

The Multifaceted Essence: Aristotle's Essentialism

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ABSTRACT

This study develops a systematic account of Aristotle's essentialism through the distinction between logical essence and causal essence, which are the two facets of Aristotelian essence. It offers a comprehensive treatment of their historical origins, philosophical motivations, and the relation between them.

The first part, which concerns logical essence, argues that the notion of logical essence originates in the Platonic 'What is it?' question and Plato's theory of Forms, and that it is philosophically motivated as a way of articulating essence through essential predication.

The second part, which deals with causal essence, argues that this notion originates in Aristotle's attempt to answer the question 'What is the principle, or what are the principles, of something?'. It further shows that the notion of causal essence is philosophically motivated as a way of articulating essence through the causal explanation of the *definiendum*'s being.

The last part argues that, in the case of *infimae species*, the final specific difference in a logical definition is ontologically based on the form or the cause in a causal definition. This correspondence ensures that the same entity can possess both logical and causal essence, without the unity of its essence being compromised.

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Introduction

‘Essentialism’, in its various forms, is the doctrine that at least some entities possess essence and essential attributes.¹ In contemporary metaphysics, there has been a renewed interest in Aristotle’s doctrine of essence, giving rise to what is often called ‘Aristotelian essentialism’. One distinctive feature of contemporary Aristotelian essentialism, as opposed to ‘modal essentialism’, is its rejection of the view that essences and essential attributes are to be determined in terms of modal notions such as necessity. The present study, however, is not concerned with contemporary Aristotelian essentialism, but rather with Aristotle’s own doctrine of essence—that is, Aristotle’s essentialism as it appears in the history of philosophy.

General Features and Technical Expressions of Aristotle’s Essentialism

According to Aristotle, every existing entity has an essence,² although different kinds of entities possess essences in different ways. More specifically, a substance possesses an essence primarily (*prōtōs*) and without qualification (*haplōs*), whereas a non-substantial entity possesses an essence only in a derivative sense.³ Non-substantial entities include several kinds: non-substantial categorial entities (such as whiteness),

¹ On the definition of essentialism, see Quine 1966, 173–4; Yablo 1998, 417–22; and Ishii 2020.

² For the claim that non-existing entities such as goat-stag do not possess an essence, see *Posterior Analytics* II 7, 92^b5–8.

³ See *Metaph.* Z 4, 1030^a16–^b13.

per se compounds (such as snub nose),⁴ accidental compounds (such as white man), trans-categorical entities (such as motion), entities capable of functioning as higher-order predicates (such as species-hood),⁵ and the matter of a composite subject.

Since the present study examines not only the essences of substances but also those of non-substantial entities, the term ‘essence’ will be used in a broad and general sense unless otherwise indicated.

To refer to essence, Aristotle employs different expressions, among which the most important are the following:⁶

(a) the what-it-is (*to ti esti*)⁷

(b) the what-it-is-to-be (*to ti ēn einai*)⁸

⁴ Insofar as Aristotle maintains that a house can be causally defined (cf. *DA* I 1, 403^b3–7, *Metaph.* Z 17, 1041^a26–7, H 2, 1043^a14–21), I take artefacts to be *per se* compounds possessing scientifically knowable causes. For Aristotle’s treatment of the definition of *per se* compounds, see *Metaphysics* Z 5.

⁵ Recently, Shapiro 2025 has defended a realist interpretation of entities that function as ‘higher-order’ predicates such as individuality and species-hood. In Shapiro 2025, 13, he argues that ‘since Aristotle accepts that “Socrates is an individual” is true, his theory of truth commits him to accepting the existence of individuality. The same applies to species-hood, genus-hood, universality, and the other problematic entities we have been considering.’

⁶ For the following expressions and their occurrences in the Aristotelian corpus, see already Kung 1977, 361–2.

⁷ It is to be noted that, although *to ti esti* is sometimes used interchangeably with *to ti ēn einai*, in other contexts it appears to have a broader sense. In this broader sense, *to ti esti* can refer not only to the essence, but also to a genus. For this usage, see *Topics* I 9. See also *De Anima* III 6, 430^b28, where Aristotle speaks of ‘the what-it-is in the sense of the what-it-is-to-be’ (τὸ τί ἐστι κατὰ τὸ τί ἦν εἶναι). On the distinction between *to ti esti* and *to ti ēn einai*, see also Arpe 1938, 23–4.

⁸ For the choice of the imperfect ἦν in τὸ τί ἦν εἶναι, I follow Natorp 1921, 2; Arpe 1938, 17; Bassenge 1960, 25–47; and Liske 1985, 261, 278 in taking it to be the so-called ‘philosophical imperfect’, indicating that the meaning expressed by a definition is already known to us and remains permanently identical. For discussions, see also Trendelenburg 1828, 479; Schwegler 1848, 372–4; Ross 1924b, 127.

(c) essence (*ousia*)⁹

(d) nature (*phusis*)¹⁰

(e) ‘what it just is’ (*hoper esti*)¹¹

He likewise employs a number of expressions to refer to essential predication, among which the most important ones are the following:

- (1) ‘To be SAID OF¹² ... as of a subject’ (*kath’ hupokeimenou legesthai* ...). This expression is introduced in *Categories* 5, 2^a19–27. According to *Categories* 5, 2^a19–21, something is SAID OF another thing as of a subject if and only if both its name and its account (*logos*) are predicated of that subject.¹³ Such a

⁹ It appears that *ousia*, when used in the sense of essence, is not restricted to the essence of substances but may also refer to the essences of non-substantial entities. See, for example, *Metaphysics* Δ 14, 1020^a33, where Aristotle speaks of the difference of the essence (*tēs ousias*). As an example, he mentions the specific difference of the circle. See also *Posterior Analytics* II 13, 97^a13, 97^a19.

¹⁰ For Aristotle, *phusis* refers to the essence of a natural substance (*Metaphysics* Δ 4, 1015^a13–4). One notable exception, however, occurs at *Metaphysics* B 3, 998^b1, where Aristotle speaks of the *phusis* of bed. It is possible that Aristotle uses *phusis* in that passage just because he is reporting the view of the Pre-Socratics.

¹¹ It should be noted that *hoper esti* may refer either to a thing’s complete essence, as in *Categories* 7, *passim*, *Topics* VI 4, 141^a35, and *Posterior Analytics* I 4, 73^b8, or to a genus of it, as in *Posterior Analytics* I 22, 83^a27–30 and I 33, 89^b4, where Aristotle states that man is *hoper* animal.

¹² Here I follow Rapp 2024 in capitalizing SAID OF and IN to mark their technical sense as determined in *Categories* 5, 2^a19–34. Elsewhere, *kath’ hupokeimenou legesthai* may be used in a broader and non-technical sense, meaning simply ‘to be said of’ or ‘to be predicated of’.

¹³ See *Cat.* 5, 2^a19–21:—φανερὸν δὲ ἐκ τῶν εἰρημένων ὅτι τῶν καθ’ ὑποκειμένου λεγομένων ἀναγκαῖον καὶ τοῦνομα καὶ τὸν λόγον κατηγορεῖσθαι τοῦ ὑποκειμένου.

predication is an essential predication.¹⁴ For example, since man is SAID OF a particular man, man is predicated essentially of that particular man.

- (2) ‘To inhere in the what–it–is’ (*en tō[i] ti esti huparchein*). This expression is discussed in connection with the sense of *per se* mentioned in *Posterior Analytics* I 4, 73^a34–7.¹⁵ For example, line inheres in the what–it–is of triangle. It should be noted, however, that the name of what inheres in the what–it–is of something need not be ‘logically’ predicated of that thing. For example, although line inheres in the what–it–is of triangle, ‘line’ is not logically predicated of triangle.¹⁶

- (3) ‘To be predicated in the what–it–is’ (*en tō[i] ti esti katēgoreisthai*).¹⁷ For example, animal is predicated in the what–it–is of man. This expression indicates that an essential predicate is a part of the essence of the subject.

¹⁴ It is widely accepted in the scholarly literature that ‘to be SAID OF ... as of a subject’ and ‘to be IN ... as in a subject’ correspond respectively to essential and non-essential predication. For this interpretation, see, for example, Wedin 1979; Code 1985, 103–4; 1986, 429–31; Perin 2007, 128; Ademollo 2021, 155. For a challenge to this interpretation, see Crivelli 2017, 540–1. For recent defenses of the traditional view against Crivelli’s objections, see Shapiro 2023; Rapp 2024.

In the present study, I prefer the distinction between essential and non-essential predication to the distinction between essential and accidental predication. The reason is that certain *per se* attributes belong to a subject neither essentially nor merely accidentally. For example, ‘having interior angles equal to two right angles’ (2R) holds of a triangle neither essentially nor merely accidentally, but *per se*. Such *per se* attributes are of particular importance because they are studied by all demonstrative sciences.

¹⁵ See *An. post.* 73^a34–7: Καθ’ αὐτὰ δ’ ὅσα ὑπάρχει τε ἐν τῷ τί ἐστιν, οἷον τριγώνῳ γραμμὴ καὶ γραμμῇ στιγμή (ἢ γὰρ οὐσία αὐτῶν ἐκ τούτων ἐστί, καὶ ἐν τῷ λόγῳ τῷ λέγοντι τί ἐστιν ἐνυπάρχει), [...].

¹⁶ For this interpretation, see already McKirahan 1992, 86–7; Vlasits 2017, 68.

¹⁷ See *Top.* I 5, 102^a31–5, *Top.* VII 3, 153^a15–22, VII 5, 154^a27–8, *An. post.* I 22, 82^b37–83^a1, 83^a21–3.

(4) ‘What it just is’ (*hoper esti*). This expression can either refer to the whole essence of something¹⁸ or one of its genera. Only in the latter case does it refer to an essential predicate in the proper sense.¹⁹

Among these expressions, ‘to be SAID OF ... as of a subject’ and ‘to inhere in the what-it-is’ refer to essential predication as ontological predication rather than logical predication. By ‘ontological predication’, I mean the ontological fact that an attribute belongs to or holds of an underlying subject.²⁰ By contrast, ‘logical predication’ concerns the propositional relation between two terms that represent the attribute and the underlying subject. With ‘to be SAID OF ... as of a subject’, Aristotle explicitly says that it is a relation between beings (*ta onta*).²¹ The expression ‘to inhere in the what-it-is’ expresses ontological predication, since ‘line’ is not logically predicated of triangle, though line as an entity holds of triangle ontologically. By contrast, ‘to be

¹⁸ See *Categories* 7, *passim.*, *Topics* VI 4, 141^a35, *Posterior Analytics* I 4, 73^b8.

¹⁹ See *Top.* IV, *passim.* See also *An. post.* I 22, 83^a28–30, I 33, 89^b4–5.

²⁰ For the distinction between ontological predication and linguistic (or logical) predication, see Code 1985, 103; Code 1986, 422; Lewis 1991, 3–12; Perin 2007, 125–6, with note 2; and Zuppolini 2018, 122. For the view that ‘to be SAID OF... as of a subject’ and ‘to be IN ... as in a subject’ express ontological rather than logical predications, see Ackrill 1963, 82; Furth 1988, 11–12; Lewis 1991, 54–5; Perin 2007, 125–6, with note 2; Crivelli 2017, 531–2; Shapiro 2023, 362; and Rapp 2024, 147.

It should be noted that a logical predication may or may not mirror the structure of the corresponding ontological predication. When it does, the logical subject coincides with the ontological subject and the logical predicate with the ontological predicate. In such cases, Aristotle speaks of a ‘natural predication’ or a predication without qualification (*haplōs*), as opposed to a predication made accidentally. For this distinction, see *An. post.* I 22, 83^a2–5. See also *An. post.* I 19, 81^b24–9. For discussions of ‘natural predication’ or predication ‘without qualification’, see Alexander, *in An. Pr.* 290.29–291.31; Philoponus, *in An. Pr.* 271.30–272.15; Philoponus, *in An. Post.* 235.17–236.10; Zuppolini 2019, 131; Malink 2022, 172; Gugumcu 2025, 2 note 8.

²¹ See *Cat.* 2, 1^a20.

predicated in the what-it-is' and 'what it just is' more usually refer to logical predication, rather than ontological predication.

Essence is an ontological entity revealed by a definition, which is a logical account (*logos*). Aristotle typically refers to definition by means of terms such as *horismos*, *horos*,²² *logos*, and *logos tēs ousias*.²³ He frequently characterizes definition in terms of the what-it-is-to-be or the what-it-is:²⁴ a definition is an account which signifies the what-it-is-to-be²⁵ or an account about the what-it-is.²⁶

²² I maintain that *horos* and *horismos*, when used to refer to the *definiens*, can be employed interchangeably. An alternative interpretation is offered by Chiba 2010, 219, who argues that *horismos* denotes a sentential phrase, such as 'Man is the two-footed animal', whereas *horos* denotes the sub-sentential defining phrase, such as 'two-footed animal'. Furthermore, Chiba (ibid. 206, note 3) contends that '*definiens*' is not a proper rendering for *horos*, since the former presupposes an already established definition, whereas *horos* designates a predicable that is, as she puts it, 'located in advance of definitional practice'.

²³ See *Cat.* 1, 1^a2, 1^a4, 1^a7. According to Bodéüs 2002, 2, the τῆς οὐσίας at 1^a2 is attested in numerous ancient commentaries, including those of Andronicus, Boethus, Ammonius, David, Philoponus, Olympiodorus, Porphyry, and Simplicius. By contrast, Waitz 1844, 6 deletes the phrase, while Bodéüs 2002, 2 brackets it, on the ground that it is uncertain whether it is from Aristotle himself or was added by ancient commentators. See also Bodéüs 1996 for a detailed discussion.

I argue that the reading λόγος is preferable to λόγος τῆς οὐσίας. In Aristotle's definitions of homonym and synonym in *Categories* 1, the *logos* of something is given with respect to the corresponding name, and such a *logos* need not be the definition of this thing. For example, Aristotle says that man and ox are synonyms insofar as they share the name 'animal' and the account with respect to the name 'animal'. In this case, the common account given for man and ox are not definitions of man and ox respectively. Rather, this account is the definition of animal. For λόγος τῆς οὐσίας, see also *An. post.* II 13, 97^a19, *Gen. an.* A 1, 715^a5, B 1, 731^b19–20, E 1, 778^a35, *Metaph.* B 3, 998^b12, Δ 9, 1018^a10–11.

²⁴ It is to be noted that in the official determinations of what a definition is, Aristotle does not make use of the notion of *ousia* or that of *physis*.

²⁵ See *Top.* I 5, 101^b38: ἔστι δ' ὅρος μὲν λόγος ὁ τὸ τί ἦν εἶναι σημαίνων, [...]. *Top.* VII 3, 153^a15–16: εἰ γάρ ἐστιν ὅρος λόγος ὁ τὸ τί ἦν εἶναι τῷ πράγματι δηλῶν, [...]. *Metaph.* Δ 8, 1017^b21–2: ἔτι τὸ τί ἦν εἶναι, οὗ ὁ λόγος ἐστὶν ὁρισμός, [...].

²⁶ See *An. post.* II 10, 93^b29: Ὅρισμός δ' ἐπειδὴ λέγεται εἶναι λόγος τοῦ τί ἐστι, [...].

With these technical expressions in place, we now turn to the puzzle that motivates the present study.

The Tension between Multiple Kinds of Definition and the Unity of Essence

What motivates the present study is the tension between the multiple kinds of definition and the unity of essence in Aristotle. Aristotle appears to recognize several distinct ways of defining the same entity. For instance, with respect to a species, the classical method is to define it by specifying its genus and specific differences. At the same time, Aristotle explicitly identifies the form of a species with its essence (*to ti ēn einai* or *ousia*). Moreover, he sometimes insists that the definition of a composite subject—either a composite substance or a geometrical object—must include both its form and the relevant kind of matter. Yet Aristotle is equally explicit that each entity has only one essence. This gives rise to a natural question: how can these different kinds of definitions be reconciled with the unity of essence?

To solve this problem, I first distinguish different kinds of definitions that can be found in Aristotle. First, a definition consisting of genus and specific differences is a kind of logical definition of a species. However, species are not the only entities that have logical definitions, nor is this the only form that a logical definition can take. In general, I determine a logical definition as follows:

- (i) *Logical definition*: a definition that does not state the cause of the *definiendum*'s being but consists of its essential predicates.

By contrast:

- (ii) *Causal definition*: a definition that states the cause of the *definiendum*'s being.

Among causal definitions, I further distinguish two subtypes:

- (iii) *Pure causal definition*: a definition that states only the cause of the *definiendum*'s being.
- (iv) *Impure causal definition*: a definition that states both the cause of the *definiendum*'s being and the proper subject for that cause.

These different kinds of definitions correspond to different aspects of essence:

- (a) *Logical essence*: the aspect of essence revealed by a logical definition, that is, by a definition consisting of essential predicates.
- (b) *Causal essence*: the aspect of essence revealed by a causal definition, namely one that states the cause of the *definiendum*'s being.
- (c) *Pure causal essence*: the aspect of essence revealed by a pure causal definition, which only states the cause of the *definiendum*'s being.
- (d) *Impure causal essence*: the aspect of essence revealed by an impure causal definition, which states both the cause of the *definiendum*'s being and the proper subject for this cause.

It should be emphasized that a definition that does not state the cause of the *definiendum*'s being is not necessarily a logical definition. In particular, a definition that resembles the conclusion of a demonstration is not a logical definition, even though it does not state the cause. For instance, 'noise in the clouds' is not a logical definition

of thunder. I shall refer to such a definition as a *preliminary stage of causal definition*. It is an incomplete definition that awaits completion through the specification of the cause. Because this kind of definition resembles the conclusion of a demonstration, it is restricted to the entities whose essences can be shown through a demonstration, namely attributes. As I shall argue later, the causal definition of a subject cannot be shown through a demonstration.²⁷ Accordingly, I define ‘preliminary stage of causal definition’ as follows:

- (v) *Preliminary stage of causal definition*: the definition of an attribute that does not state the cause of that attribute’s being, but merely specifies a general term (like ‘noise’) together with the proper subject (like ‘clouds’) to which both the attribute and its cause hold *per se*.

Summary of Literature

Before developing my own account, it is worth noting that the distinction between logical and causal definition, together with the corresponding distinction between logical and causal essence, is by no means unprecedented. Comparable distinctions have already been employed in modern scholarship, although, as I shall argue, none has been developed into a fully systematic account. In what follows, I examine several representative studies and explain how the present account differs from them.

²⁷ For the distinction between attributes and subjects, see *Posterior Analytics* II 2. For how to show the causal definition of an attribute through a demonstration, see *Posterior Analytics* II 8. Later in 6.1, I shall argue that inquiry into ‘why it is’ of a subject as described in *Metaphysics* Z 17 cannot be recast in the form of a demonstration.

In his monograph *Das τί ᾗν εἶναι bei Aristoteles* (1938), Curt Arpe distinguishes three senses of essence in Aristotle: essence ‘in the logical sense’ (*im logischen Sinn*), primarily associated with *Topics* and *Posterior Analytics*; essence ‘in the teleological sense’ (*im teleologischen Sinn*), understood as cause in *Physics*; and essence ‘in the ontological sense’ (*im ontologischen Sinn*), as developed in *Metaphysics Z*. Arpe’s recognition of these different aspects of essence is pioneering. Nevertheless, his account has several limitations. First, Arpe explains the different senses of essence through a developmentalist approach,²⁸ whose interpretative value is now increasingly questioned. Second, by assigning different senses of essence to different groups of works, his account suggests that each sense is confined to a particular stage or corpus of Aristotle’s writings. However, this is not the case. Rather, different aspects of essence sometimes operate within the same work. Third, the distinction between the teleological and the ontological sense of essence appears unnecessary. Insofar as the form discussed in *Metaphysics Z* functions as a cause no less than the form discussed in *Physics*, I subsume both under the broader notion of causal essence.

In her article ‘La Définition chez Aristote’ (1939), LeBlond insightfully relates Aristotle’s theory of definition to the method of analysis.²⁹ Corresponding to three

²⁸ See Arpe 1938, 7: ‘[...] da es sich um eine Entwicklung innerhalb dieser Bedeutungen handelt, [...]’. The developmentalist view regarding Aristotle’s philosophy was first systematically proposed by Jaeger 1923.

²⁹ For instances of ἀνάλυσις in Aristotle, see *An. Pr.* I 38, 49^a19, I 45, 51^a18, *Gen. corr.* II 1, 329^a23. Note that Aristotle himself does not distinguish between the different kinds of analysis, nor does he offer an account of what analysis is. An account of analysis and a detailed classification of the different kinds of analysis can be found in Alexander of Aphrodisias, in *An. pr.* 7. 11–33. See also Alexander of Aphrodisias, in *An. pr.* 275, 32–7 and *Quaestiones* 4. 4–7. For classifications of different kinds of analysis in other ancient scholars, see Alcinous, *Didaskalikos* 156–7, Ammonius, in *An. Pr.* 5.10–7.25,

types of analysis, she distinguishes between three kinds of definition: definition by form and matter, definition by cause and effect, and definition consisting of genus and specific differences.³⁰ Whereas definition consisting of genus and specific differences serves primarily to classify the *definiendum*, the other two kinds of definition are intended to ‘explain and express the intrinsic nature of the object’³¹. According to LeBlond, while definition by cause and effect applies to the non-substantial facts and events, that by form and matter applies to substances.³² This distinction will also be adopted in the present study. I depart from LeBlond, however, in two respects. First, I argue that definition by form and matter applies not only to substances but to all composite subjects, including geometrical objects and artefacts. Second, whereas LeBlond reserves the expression ‘causal definition’ (*la définition par la cause*) exclusively for definitions by cause and effect,³³ I argue that definition by form and matter is also causal, insofar as the form of a composite subject is also its cause.

David Charles likewise distinguishes different levels in Aristotle’s theory of definition in his monograph *Aristotle on Meaning and Essence* (2000). According to Charles, Aristotle’s account has several ‘layers’: the general/logical notions about definition in *Topics*, the ‘causal-definitional scheme’ in *Analytics*, and the ‘causal-definitional scheme with physical notions’.³⁴ In Charles’s view, the latter accounts are

Philoponus, in *An. pr.* 307. 6–8. I owe these references to Barnes/Bobzien/Flannery/Ierodiakonou 1992, 49, note 50.

³⁰ LeBlond 1939, 356–9.

³¹ LeBlond 1939, 361: ‘[...] expliquer, pour exprimer le dynamisme intérieur de la chose elle-même.’ The English translation is taken from LeBlond (1979), 69.

³² LeBlond 1939, 362–3.

³³ LeBlond 1939, 363.

³⁴ Charles 2000, 253.

progressively more determinate than the former ones. A similar distinction can be found in Christof Rapp's unpublished manuscript 'Aristotle's Three Approaches to Essentialism'.³⁵ Compared to Arpe and LeBlond, Charles and Rapp emphasize that while hylomorphism plays no role in Aristotle's treatment of essence in *Posterior Analytics* and other logical works, it becomes central in *Metaphysics*. This observation is of particular importance for the present study because it reveals two fundamentally different approaches to the essence of subjects. In *Posterior Analytics*, Aristotle treats a subject as having itself as cause. By contrast, in *Metaphysics*, Aristotle maintains that the cause of a composite subject is the form, which is something different from the composite subject itself.

With respect to the relation between logical definition and causal definition, and how these two aspects are compatible with the unity of essence, scholars hold different views. While Arpe explains this from a developmentalist perspective, LeBlond and Rapp treat them as different approaches to essence. By contrast, scholars like Charlotte Witt, David Charles, and Tianqin Ge deny that a logical definition is itself a complete definition. In their view, an adequate definition must ultimately be causal; consequently, logical definition must either be replaced by or completed through the statement of cause. For example, in her monograph, *Substance and Essence in Aristotle. An Interpretation of Metaphysics VII–IX* (1989), Witt has criticized what I call logical definition in the following terms:

³⁵ In his manuscript Rapp has distinguished three 'layers' of Aristotle's essentialism: the non-explanatory general term essentialism (in *Categories* and *Topics*), the explanatory essentialism without forms (in *Posterior Analytics*), and the explanatory, exclusive, sortal form essentialism (in *Metaphysics*).

On this interpretation, since Socrates and Plato are members of the same species, they share an essence that is also shared by all other human beings. This idea—i.e., a universal essence shared by all members of the same species—I call the species–essence. [...] First, it is wrong in holding that the most important function of form or essence is to explain species membership. [...] Aristotle describes form or essence as the cause of being of individual substances. What he means is that the form or essence is (i) the cause of there being an actual individual substance and (ii) the cause of its being a unity rather than a heap. [...] Second, the traditional interpretation mistakenly holds that the essence of an individual, composite substance is universal rather than individual. [...] Third, on my view, an essence is not a property (or a cluster of properties) of the substance whose essence it is.³⁶

I believe that this criticism loses its force once we acknowledge that definition can have not only the function of causal explanation but also that of classification. I take logical definition to be an adequate definition in terms of the function of classification. Moreover, the acknowledgement of logical definition does not lead to the claim that essence is a universal. Rather, it means only that essence is grasped as a universal. Finally, the notion of logical essence does not imply that essence is a property of the bearer of essence. The present study distinguishes between logical essence as a whole and an essential predicate as a part of logical essence. While the latter is a property that is predicated of the subject, the former is not.

David Charles proposes a different strategy for reconciling logical and causal definition. In *Aristotle on Meaning and Essence*, he argues that a complete definition combines genus and specific differences as *explananda* with the cause as *explanans*.

³⁶ Witt 1989, 2–3.

Thus, logical and causal elements are integrated into a single unified definition. For instance, in the following passage, Charles says:

The *Analytics*, so interpreted, articulates a unified account of these definitions. Its completed definitions may refer to differentiation through genus and differentia, and to the unique, causally basic essence of the kind. [...] So understood, there is no contrast or tension between definition by genus and *differentia* and definition by causally basic feature. Both can be elements in one unified definition because both play a mutually supportive role in an appropriate constitutive causal story. Nor is their integration an accident. The *differentiae* are demarcated (in part) by their role as the *explananda* in the relevant causal story. But equally the *explananda* are themselves (in part) selected because they are *differentiae* which locate the particular kind in a wider system of classification. Some have argued that Aristotle offers several distinct theories of definition, which fail to form a unified whole: definition by genus and *differentia*, definition by basic causal feature, and definition by matter and form. However, in the *Analytics*, the first two are integrated parts of one account of definition.³⁷

A similar approach can be found in Tianqin Ge's recently published monograph in Chinese 《亚里士多德“本质”与“原因”概念关系研究》 (*The Relationship between Essence and Cause in Aristotle*) (2025). Ge argues that the definition arrived at by division in *Metaphysics* Z 12 must ultimately be completed by the causal investigation in Z 17.³⁸

³⁷ Charles 2000, 247.

³⁸ See Ge 2025, 182.

Unlike Charles and Ge, and following LeBlond and Rapp in this regard, I hold that logical and causal definition constitute two independent, yet equally legitimate routes to the same essence. Logical definition is not merely an incomplete stage awaiting causal completion. Rather, it is itself a complete and final definition, although it reveals essence under a different aspect from causal definition.

Thesis of the Present Study

The existing literature, however, has only employed distinctions comparable to the distinction between logical and causal essence, but it has not explicitly defended their philosophical legitimacy. The central aim of the present study is therefore to demonstrate that Aristotle's essentialism can be systematically reconstructed in terms of this distinction. More specifically, I argue that the distinction between logical and causal essence is historically grounded, philosophically motivated, and compatible with the unity of essence.

Outline of the Present Study

The study is divided into three parts. Part I (Chapters 1–3) examines logical essence. After that, Part II (Chapters 4–6) focuses on causal essence. Finally, Part III (Chapter 7) investigates the relation between logical essence and causal essence.

Chapter 1 traces the historical origin of the notion of logical essence. I argue that it originates in the Platonic 'What is it?' question and Plato's theory of Forms, and that

Aristotle adds some new twists to this notion so that it may fit his own metaphysical and epistemological framework.

Chapter 2 argues that the philosophical motivation for the notion of logical essence is the articulation of essence through essential predication. I shall first show that the parts of a logical essence, namely genus and specific differences, are essential predicates of their subjects, both on an ontological level and on a logical level. On an ontological level, genus and specific differences are SAID OF their subjects. On a logical level, they are predicated in the what-it-is of their subjects. I argue that the ontological predication ‘to be SAID OF ... as of a subject’ underlies the logical predication ‘to be predicated in the what-it-is’. After that, I shall deal with the puzzle of how a specific difference can be SAID OF its subject, with both its name and account being predicated of its subject. Finally, as part of the solution to the puzzle just mentioned, I argue that since a specific difference is predicated in the category of ‘of what sort it is’ (*poion ti esti*), it does not add its own genus to its subject when constituting its essence. Consequently, the account of an entity *qua* specific difference need not mention its own genus and can be predicated of its subject.

Chapter 3 deals with how we can grasp the logical essence of species through three steps: induction, selection of essential predicates, and division. After that, it argues against Bronstein (2016) that demonstrations are not required for grasping the *nous* of a logical *definiens*.

Chapter 4 investigates the notion of causal essence. It argues that the notion of causal essence has its origin in Aristotle’s attempt to answer the question, ‘What is the principle, or what are the principles, of something?’. This chapter further examines the two fundamental moves concerning the notion of causal essence in *Posterior Analytics*.

Chapters 5 and 6 argue that the philosophical motivation for the notion of causal essence is the articulation of essence through the causal explanation of the *definiendum*'s being. Chapter 5 focuses on the causal essence of an attribute, whereas Chapter 6 investigates the causal essence of a subject. In the case of an attribute, the cause functions as the middle term in a demonstration that explains why an attribute holds of its proper subject. In the case of a subject, by contrast, the cause is the form and cannot function as the middle term in a demonstration.

Chapter 7 argues that there is a correspondence between logical essence and causal essence. More specifically, in the case of *infimae species*, I argue that the final specific difference in a logical definition is ontologically based on the form or the cause in a causal definition, though the genus is only analogous to the matter. In this way, an entity with a scientifically knowable cause can have both logical and causal essence without undermining the unity of its essence.

Part I: Logical Essence

1. The Origin of the Notion of Logical Essence and Its Aristotelian Twists

Part I deals with the notion of logical essence. In Chapter 1, I argue that the notion of logical essence originates in the Platonic ‘What is it?’ question and Plato’s theory of Forms. After that, I show the three twists Aristotle adds to the notion of logical essence. First, Aristotle allows the possibility of asking the ‘What is it?’ question about a sensible particular *qua* an instance of its species or genus. Second, Aristotle establishes a hierarchy of essences. Third, Aristotle determines (logical) essence through *per se* predication.

1.1. The Origin of the Notion of Logical Essence

1.1.1. The Definitional Practice of the Pre-Socratics, Socrates, and Antisthenes

Recall that, in the Introduction, ‘logical essence’ was defined as the aspect of essence that is revealed by a definition consisting of essential predicates. I suggest that this notion ultimately originates with Plato, and more specifically, in his conjunction of ‘What is it?’ question with the theory of Forms.

To be sure, the ‘What is it?’ question as such does not originate with Plato but can be traced back to earlier thinkers, though in a superficial and non–systematic way. In *Metaphysics* A 5, 987^a20–2, Aristotle reports that the early Pythagoreans had already ‘began to speak about the what–it–is (*to ti esti*) and to define (*horizesthai*)’. However, they defined things too superficially (λίαν δ’ ἀπλῶς). Further, in *Metaphysics* M 4, 1078^b19–23, Aristotle remarks that Democritus only ‘slightly touched upon’ (ἐπὶ μικρὸν ἥψατο) the universal and defined the warm and the cold ‘in a certain way’ (πῶς). In that passage, Aristotle further observes that the early Pythagoreans defined only a limited number of things by reducing them to numbers.³⁹

In contrast to such ‘piecemeal’ definitional practice among the Pre–Socratics, Aristotle reports in *Metaphysics* A 6, 987^b1–4 that the historical Socrates was the first philosopher to pursue definitions systematically and to turn from particulars to universals:

The work Socrates did, on the other hand, was concerned with the ethical issues, not at all with the nature as a whole. In these, however, he was inquiring into the universal (*to katholou*) in these things and was the first to fix his thought on definitions (*horismōn*).⁴⁰

³⁹ See also *Phy.* B 2, 194^a20–1, where Aristotle says that Empedocles and Democritus touched on the form and the what–it–is–to–be very slightly (ἐπὶ μικρὸν γάρ τι μέρος Ἐμπεδοκλῆς καὶ Δημόκριτος τοῦ εἶδους καὶ τοῦ τί ἦν εἶναι ἥψαντο). See also *De Partibus Animalium* I 1, 642^a26–8: ‘Although Democritus was the first to touch upon it, it was not as something necessary to the study of the nature but because he was carried away by the facts themselves.’ (trans. Balme 1972, slightly modified: [...]) ἄλλ’ ἥψατο μὲν Δημόκριτος πρῶτος, ὥς οὐκ ἀναγκαίου δὲ τῇ φυσικῇ θεωρίᾳ, ἀλλ’ ἐκ φερόμενος ὑπ’ αὐτοῦ τοῦ πράγματος, [...]). I owe the references to *Physics* and *De Partibus Animalium* to Annas 1976, 154.

⁴⁰ See *Metaph.* A 6, 987^b1–4, trans. C. D. C. Reeve 2016, slightly modified: Σωκράτους δὲ περὶ μὲν τὰ ἠθικά πραγματευομένου περὶ δὲ τῆς ὅλης φύσεως οὐθέν, ἐν μέντοι τούτοις τὸ καθόλου ζητοῦντος καὶ

These remarks suggest that Socrates is the first philosopher to treat definition as a serious philosophical undertaking. However, the Socratic ‘What is it?’ question leads only to the notion of logical definition but not yet to the notion of logical essence, since it is not clear whether the historical Socrates is a realist regarding essence or not.

Another possible source of the notion of logical essence is Socrates’ follower Antisthenes. According to Diogenes Laertius, ‘Antisthenes was the first to define “definition”, saying: “A definition is an account revealing what a thing was or is.” (λόγος ἐστὶν ὁ τὸ τί ἦν ἢ ἔστι δηλῶν)’ (*Vitae Philosophorum* 6.3, 1–2)⁴¹ Antisthenes’s philosophical reflection on definition may be due to Socrates’s inquiry into definition. However, according to the evidence in Plato’s *Theaetetus* 201d8–202c7⁴² and Aristotle’s *Metaphysics* H 3, 1043^b23–32, Antisthenes seems to hold that a definition of something consists of its material constituents.⁴³ Since such an account does not consist of essential predicates, it neither constitutes a logical definition nor reveals logical essence. Rather, it continues the Pre–Socratic tradition of explaining things in terms of their primary material constituents. Moreover, insofar as the available

περὶ ὁρισμῶν ἐπιστήσαντος πρώτου τὴν διάνοιαν, [...]. See also *Metaph.* M 4, 1078^b17–19, 27–31, *EE* I 5, 1216^b2–9, Xenophon, *Mem.* 1.1.16.

⁴¹ Translation is taken from Malink 2024, 31: *πρωτός τε ὥριστο λόγον εἰπών, ‘λόγος ἐστὶν ὁ τὸ τί ἦν ἢ ἔστι δηλῶν.’* For a recent discussion of this phrase, see Meijer 2017, 56–61. Meijer *ibid.* 59 argues that *logos* in Antisthenes should not be understood in the technical sense of definition, but rather in a more general sense. Therefore, according to him, the Antisthenean *logos* cannot be regarded as a precursor of the notion of definition.

⁴² Scholars have suggested that Antisthenes may be one proponent of the so-called ‘dream theory’ reported by Socrates in *Theaetetus* 201d8–202c7. See, for instance, Burnyeat 1970, 108–117; 1990, 164–73; Malink 2024, 35, 44.

⁴³ According to Navia 2001, 61–2, for Antisthenes, one indicates what something is merely by pointing to the thing at hand, which leads to his view that the non-sensible things cannot be defined.

evidence indicates that Antisthenes held that only sensible particulars exist,⁴⁴ he can hardly be regarded as a realist concerning essence.

If Socrates and Antisthenes were the first thinkers to reflect systematically on the ‘What is it?’ question and the notion of definition,⁴⁵ Plato may nevertheless be regarded as the first philosopher to combine the ‘What is it’ question with a realist conception of essence and thus as the first genuine essentialist. According to Plato, the essences are the Forms.⁴⁶ As Aristotle reports in *Metaphysics* A 6, 987^b4–10, Plato maintains that the proper objects of definition are entities distinct from sensible particulars, that is, the Forms or Ideas:

Plato, following him [i.e. Socrates], took it that this fixing is done concerning other things and not the perceptible ones, since it is impossible for there to be a common definition of any of the perceptibles, as they at any rate are always changing. He, then, called beings of this other sort ‘Ideas,’ and the perceptibles are beyond these and are all called after these.⁴⁷

⁴⁴ Scholars such as Cornford 1935, 243 often suggest that Antisthenes belongs to the ‘native earthborn giants’ (οἱ γε αὐτῶν σπαρτοὶ τε καὶ αὐτόχθονες, 247c5) as described in *Sophist* 246a4–249b8 (the so-called *gigantomachia* passage). According to them, only the tangible bodies are beings, whereas the ‘friends of the forms’ (οἱ τῶν εἰδῶν φίλοι, 248a4) take the Forms to be beings. For this view, see also Navia 2001, 62, Meijer 2017, 59.

⁴⁵ See also Arpe 1938, 9: ‘Die Frage τί ἐστὶν in der Bedeutung der Frage nach der Definition gab es nicht vor Sokrates.’

⁴⁶ For a recent defense of the view that Plato is an essentialist according to whom essences are just Forms, see Politis 2021.

⁴⁷ *Metaph.* A 6, 987^b4–9, trans. C. D. C. Reeve 2016, slightly modified: [...] ἐκεῖνον ἀποδεξάμενος διὰ τὸ τοιοῦτον ὑπέλαβεν ὡς περὶ ἐτέρων τοῦτο γινόμενον καὶ οὐ τῶν αἰσθητῶν· ἀδύνατον γὰρ εἶναι τὸν κοινὸν ὅρον τῶν αἰσθητῶν τινός, ἀεὶ γε μεταβαλλόντων. οὗτος οὖν τὰ μὲν τοιαῦτα τῶν ὄντων ἰδέας προσηγόρευσε, τὰ δ’ αἰσθητὰ παρὰ ταῦτα καὶ κατὰ ταῦτα λέγεσθαι πάντα. See also *Metaph.* M 4, 1078^b17–19, M 9, 1086^b3–4.

Aristotle's report therefore suggests that Plato inherits from Socrates the search for definitions and universals, while at the same time going beyond Socrates by positing Forms as real entities that are both *definienda* and essences.⁴⁸ In this sense, the historical Socrates and Antisthenes may be regarded as the first thinkers to take seriously the notion of definition, whereas Plato is the first philosopher to connect this practice with a realist conception of essence. It is in this sense that the notion of logical essence originates only when the 'What is it?' question is connected to the theory of Forms. Thus, I propose that its origin, properly speaking, is the Platonic, rather than Socratic 'What is it?' question, and Plato's theory of Forms.

1.1.2. *The Definitional Practice of Plato*

To clarify the origin of the notion of logical essence, it is necessary to examine Plato's definitional practice. In what follows, I shall sketch the practice of definition in both his Socratic dialogues and the so-called 'doctrinal dialogues'.⁴⁹

In Plato's Socratic dialogues, Plato raises the 'What is it?' question with respect to various kinds of virtue. For instance, he asks what courage (*andreia*) is in *Laches*, what beauty (*to kalon*) is in *Hippias Major*, what piety (*hosion*) is in *Euthyphro*, what

⁴⁸ Note that Aristotle leaves out mathematical entities, which, according to Plato, are also definable, insofar as they do not undergo generation and corruption. However, mathematical entities are not essences but merely have the corresponding Forms as essences.

⁴⁹ For the distinction between the 'Socratic dialogues' and the 'doctrinal dialogues', see Dancy 2001, 5. Compared with the chronological distinction between 'early', 'middle', and 'late' dialogues, this distinction has the advantage that it need not consider the date of composition. More recently, Clark 2022, 3 emphasizes that the Socratic dialogues, which are connected in more than merely chronological terms, can be seen as a thematic 'family'.

temperance (*sōphrosunē*) is in *Charmides*, and what justice is in Book 1 of *Republic*. In addition, he asks what virtue (*aretē*) itself is in *Meno* and what rhetoric (*rhētorikē*) is in *Gorgias*.⁵⁰

Already in these dialogues, Plato establishes several criteria that an adequate answer to the ‘What is it?’ question must satisfy⁵¹: First, it must state what the *definiendum* itself is, rather than merely identifying an instance of it.⁵² Second, it must apply to all and only the instances of the *definiendum*.⁵³ Third, it must provide a standard by which one can determine whether a particular is an instance of the *definiendum*.⁵⁴ Fourth, it must explain why a particular qualifies as an instance of the *definiendum*.⁵⁵ I propose that the emphasis on the *definiendum* as being universal, standard, and explanatory of its instantiations already implies the existence of the theory of Forms, though Plato has not explicitly introduced and explicated it. Therefore, I argue that the ‘What is it?’ question as presented in Plato’s Socratic dialogues cannot be called ‘Socratic’, but rather ‘Platonic’.

In *Sophist* and *Statesman*, which are among Plato’s ‘doctrinal’ dialogues, we find definitions of various kinds of crafts, including angling, sophistry, weaving, and

⁵⁰ For a list of 41 definitions offered by the interlocutors and Socrates himself in Plato’s Socratic dialogues, see Santas 1979, 98–100.

⁵¹ For definition and the ‘What is it?’ question in the Socratic dialogues, see especially Dancy 2001; Politis 2015; Clark 2022.

⁵² See *Euthpr.* 6d9–e2, *La.* 191e10–11, *Men.* 72c6–73c8. This is ‘the generality requirement’ mentioned in Politis 2015, 45.

⁵³ See *La.* 192b–d. This is ‘the Substitutivity Requirement’ in Dancy 2001, 80–114 and ‘the co-extensivity condition’ in Politis 2015, 45.

⁵⁴ See *Euthpr.* 6e3–6. This is ‘the Paradigm Requirement’ in Dancy 2001, 115–33 and ‘the standard requirement’ in Politis 2015, 44.

⁵⁵ See *Euthpr.* 9e1–11b1. This is ‘the Explanatory Requirement’ in Dancy 2001, 134–47 and ‘the explanatoriness requirement’ in Politis 2015, 45.

statesmanship. This shows that the project of definition is extended beyond the virtues as compared with the Socratic dialogues. In these dialogues, Plato is less concerned with the criteria that a definition must satisfy than with the methodological rules governing division. Among these rules are that one should divide according to genuine kinds rather than merely according to parts,⁵⁶ which is in line with the famous motto of dividing along ‘the natural joints’.⁵⁷ Another rule is that we should not divide too ‘quickly’ so that no genuine difference between kinds is overlooked in the process of division.⁵⁸ Expressions such as ‘real kinds’, ‘natural joints’, and ‘genuine differences’ indicate that division presupposes the theory of Forms and that one should divide according to the Forms. Recall that in the Socratic dialogues, the requirements for successful definitions also presuppose the existence of Platonic Forms. Thus, Plato’s definitional practice in both Socratic dialogues and ‘doctrinal dialogues’ presupposes the theory of Forms.

A further commonality is that in both Socratic dialogues and ‘doctrinal dialogues’, a definition consists of essential predicates and is thus a logical definition. At the risk of interpreting Plato under an Aristotelian lens, one may say that the definitions found in the ‘doctrinal’ dialogues consist of a genus together with specific differences. What, then, should we say about the definitions in the Socratic dialogues? My suggestion is that some of them, when seen under an Aristotelian lens, also consist of a genus and

⁵⁶ See, for instance, *Plt.* 262a8–263e1, 285a4–7.

⁵⁷ See *Phdr.* 265e1–3: ‘This, in turn, is to be able to cut up each kind according to its species along its natural joints, and to try not to splinter any part, as a bad butcher might do.’ (trans. Nehamas/Woodruff, in Cooper [1997]: Τὸ πάλιν κατ’ εἶδη δύνασθαι διατέμνειν κατ’ ἄρθρα ἧ πέφυκεν, καὶ μὴ ἐπιχειρεῖν καταγνύναι μέρος μηδέν, κακοῦ μαγείρου τρόπῳ χρώμενον’).

⁵⁸ See *Plt.* 285b1–3; *Phlb.* 16c5–17a5. For discussions of the rules of division, see also Vlasits 2017, 42–52.

specific differences. For instance, in *Laches* 192b8, courage is defined as ‘a certain endurance of the soul’ (καρτερία τις τῆς ψυχῆς), and in 192d10, it is defined as ‘wise endurance’ (φρόνιμος καρτερία).⁵⁹ By contrast, others consist of a single essential predicate that cannot be further analyzed into genus and specific differences. For instance, courage is defined as ‘a certain endurance of the soul’ (καρτερία τις τῆς ψυχῆς) in *Laches* 192b8.⁶⁰

Indeed, in *Theaetetus* 201d8–202c7 and 206e6–208b10, Plato explicitly rejects the attempt to answer the ‘What is it?’ question by analyzing things into their primary material constituents. This suggests that one important motivation for Plato’s conception of logical definition—and consequently of logical essence—was to respond to the ‘material definition’ that is predominant among Pre-Socratics.

Having shown Plato’s definitional practice in both Socratic dialogues and ‘doctrinal dialogues’, I now turn to the twists added by Aristotle to the notion of logical essence. These developments allow the notion of logical essence to fit Aristotle’s metaphysical and epistemological framework.

First, unlike Plato, Aristotle regards particular substances as genuine beings and indeed as primary beings, when hylomorphism is not yet introduced. Consequently, he allows the ‘What is it?’ question to be asked of a sensible particular insofar as it is an instance of a species or a genus.

Second, Aristotle establishes a hierarchy of essences. For Plato, essences, namely Forms, do not differ from each other *qua* essences: each Form is the essence for itself in the same way. By contrast, for Aristotle, the essences of different kinds of entities

⁵⁹ For more instances, see Santas 1979, 98–100.

⁶⁰ For more instances, see Santas 1979, 98–100.

are not called essences in the same way. Rather, there is a hierarchy of essences that is parallel to the hierarchy of beings. In other words, if an entity is called being in a more proper sense, then its essence is called an essence in a more proper sense.

Third, Aristotle determines the notion of logical essence through *per se* predication, which is not yet explicitly introduced by Plato.

1.2. Aristotelian Twist (1): The ‘What Is It?’ Can Also Be Asked of a Sensible Particular

According to Aristotle’s report in *Metaphysics* A 6, 987^b4–10, for Plato, there can be no definition of a sensible particular as such. Aristotle endorses the same view in *Metaphysics* Z 15:

This is also why there is neither definition (*horismos*) nor demonstration (*apodeixis*) of the substances that are perceptible and particular, [namely,] because they have matter whose nature is such that it is capable of both being and not being (which is why all the particular ones of them can pass away). At all events, if demonstration is of necessary things and definition is a matter of scientific knowledge (*epistēmē*), and if, just as scientific knowledge cannot be scientific knowledge at one time and ignorance at another (but instead it is belief that is like that), so neither definition nor demonstration can be that way either. Rather, it is belief (*doxa*) that is of what admits of being otherwise. Therefore, it is clear that there will not be either definition or demonstration of such things. For things that pass away are unclear to those who have scientific knowledge when they have departed from perception, and, though the accounts (*tōn logōn*) are preserved the same in their soul, there will still not be either definition or demonstration. That is why, in issues relating to definition, when

someone is defining one of the particular things, we must not be ignorant of the fact that it is always possible to do away with this definition, since particulars cannot be defined.⁶¹

In this passage, Aristotle argues that there can be neither definition nor demonstration of sensible particulars *as such*. As things that pass away, sensible particulars as such are not objects of scientific knowledge (*epistēmē*). Rather, they fall within the domain of belief (*doxa*).⁶²

In the simile of the divided line in *Republic*, Plato represents a similar view according to which visible things, as belonging to the realm of becoming, are objects of belief (*doxa*), rather than of knowledge (*epistēmē*).⁶³ Although Plato never explicitly

⁶¹ *Metaph.* Z 15, 1039^b27–1040^a7, trans. C. D. C. Reeve 2016, slightly modified: διὰ τοῦτο δὲ καὶ τῶν οὐσιῶν τῶν αἰσθητῶν τῶν καθ' ἕκαστα οὔτε ὁρισμὸς οὔτε ἀπόδειξις ἔστιν, ὅτι ἔχουσιν ὕλην ἧς ἡ φύσις τοιαύτη ὥστ' ἐνδέχεται καὶ εἶναι καὶ μὴ· διὸ φθαρτὰ πάντα τὰ καθ' ἕκαστα αὐτῶν. εἰ οὖν ἢ τ' ἀπόδειξις τῶν ἀναγκαίων καὶ ὁ ὁρισμὸς <ὁ> ἐπιστημονικός, καὶ οὐκ ἐνδέχεται, ὥσπερ οὐδ' ἐπιστήμην ὅτε μὲν ἐπιστήμην ὅτε δ' ἄγνοιαν εἶναι, ἀλλὰ δόξα τὸ τοιοῦτόν ἐστιν, οὕτως οὐδ' ἀπόδειξιν οὐδ' ὁρισμόν, ἀλλὰ δόξα ἐστὶ τοῦ ἐνδεχομένου ἄλλως ἔχειν, δῆλον ὅτι οὐκ ἂν εἴη αὐτῶν οὔτε ὁρισμὸς οὔτε ἀπόδειξις. ἄδηλά τε γὰρ τὰ φθειρόμενα τοῖς ἔχουσι τὴν ἐπιστήμην, ὅταν ἐκ τῆς αἰσθήσεως ἀπέλθῃ, καὶ σφωζομένων τῶν λόγων ἐν τῇ ψυχῇ τῶν αὐτῶν οὐκ ἔστι οὔτε ὁρισμὸς ἔτι οὔτε ἀπόδειξις. διὸ δεῖ, τῶν πρὸς ὅρον ὅταν τις ὀρίζηται τι τῶν καθ' ἕκαστον, μὴ ἀγνοεῖν ὅτι ἀεὶ ἀναιρεῖν ἔστιν· οὐ γὰρ ἐνδέχεται ὀρίσασθαι. Here, Aristotle appears to use 'scientific knowledge' (*epistēmē*) in a broad sense, encompassing not only the knowledge acquired through demonstration but also that attained through definition.

⁶² Aristotle says that even though we do not possess scientific knowledge about sensible particulars, we possess accounts (*logoi*) about them in the soul. Such accounts, I suggest, are on the level of experience (*emperia*). Although experience is concerned with particulars (see *Metaph.* A 1, 981^a15–16), Aristotle nevertheless holds that it involves notions (*ennoēmata*, see *Metaph.* A 1, 981^a6), reason (*logos*, see *An. post.* II 19, 100^a2), and rational accounts. An account of a sensible particular as such must apply exclusively to it and enable us to recognize it as the individual that it is. For instance, in Plato's *Theaetetus*, Socrates offers an account of the sun as 'the brightest of the bodies that moves round the earth in the heavens' (*Tht.* 208d2–3) and an account of Theaetetus as 'a man with this specific form of snub-nosedness and other specific bodily features' (*Tht.* 209b2–c9).

⁶³ See *Resp.* VI 509d1–511e5, 533e7–534a8.

states that there can be no definition of sensible particulars as such, this appears to be his view, because Plato implicitly takes definition to be a kind of knowledge. This is indicated by the fact that Plato consistently associates the ‘What it is?’ question with the cognates of *eidenai*,⁶⁴ *gignōskein*,⁶⁵ and *apodeiknūnai*.⁶⁶ Moreover, Plato’s own definitional practice confirms that the *definienda* are never sensible particulars.

Thus, both Plato and Aristotle deny that there can be a definition of a sensible particular *qua* that sensible particular, and they do so for basically the same reason. Put differently, neither of the two allows the ‘What is it?’ question to be asked of a sensible particular simply insofar as it is that sensible particular. For example, we cannot ask ‘What is Socrates?’ insofar as Socrates is Socrates. However, Aristotle departs from Plato in an important respect. Although Aristotle agrees that no definition can be given of a sensible particular as such, he nevertheless maintains that the ‘What is it?’ question may be asked of a sensible particular insofar as it is an instance of a species or a genus. No corresponding possibility is found in Plato.

That Aristotle allows the ‘What is it?’ question to be asked of a sensible particular *qua* an instance of a species or a genus is evident from *Categories* 5. There Aristotle states that, in answering the question what a sensible particular is, one may state either

⁶⁴ See, for instance, *Grg.* 505e3–5: εἰ μέντοι ποιήσομεν, οἶμαι ἔγωγε χρῆναι πάντας ἡμᾶς φιλονίκως ἔχειν πρὸς τὸ εἰδέναι τὸ ἀληθὲς τί ἐστὶν περὶ ὧν λέγομεν καὶ τί ψεῦδος· *Meno* 71b3–4: ὁ δὲ μὴ οἶδα τί ἐστὶν, πῶς ἂν ὁποῖόν γέ τι εἰδείην; *Tht.* 147b2: ἢ οἶε τίς τι συνήσιν τινος ὄνομα, ὃ μὴ οἶδεν τί ἐστὶν;

⁶⁵ See, for instance, *Chrm.* 165c4–6: εἰ γὰρ δὴ γινώσκειν γέ τί ἐστὶν ἢ σωφροσύνη, δῆλον ὅτι ἐπιστήμη τις ἂν εἴη καὶ τινός· ἢ οὐ;

⁶⁶ See, for instance, *Prt.* 354e5–7: πρῶτον μὲν γὰρ οὐ ῥᾶδιον ἀποδείξαι τί ἐστὶν ποτε τοῦτο ὃ ὑμεῖς καλεῖτε τῶν ἡδονῶν ἥττω εἶναι. Note that for Plato, *apodeiknūnai* does not have the Aristotelian technical meaning of ‘to demonstrate’. Rather, it has the broader sense of ‘to show forth (in a rational way)’. For the broader sense of the cognate *apodeixis* and the contrast between *apodeixis* and *mythos* in Plato, see Vlasits 2021, 279, note 20.

a species or a genus to which it belongs. He further remarks that it is more knowledge-conveying (*gnōrimōteron*) and more appropriate (*oikeiōteron*) to state a species than a genus (*Cat.* 5, 2^b8–10, *Cat.* 5, 2^b31–4).

In *Metaphysics* Z 4, 1029^b13–16, Aristotle speaks of the what–it–is–to–be–you (*to soi einai*), indicating that a particular instance also possesses an essence:

First let us say something about it [i.e. the what–it–is–to–be] in general (*logikōs*):⁶⁷ the what–it–is–to–be for each thing (*to ti ēn einai hekastō[i]*) is what is said to be because of itself (*kath' hauto*). For what–it–is–to–be–you (*to soi einai*) is not the what–it–is–to–be–musical (*to musikō[i] einai*). For you are not musical because of you. Rather, the what–it–is–to–be–you is what you are because of you.⁶⁸

Here, the what–it–is–to–be–you is the what–it–is–to–be for a particular man, namely, what that particular man is said to be in virtue of himself (*kath' hauton*).⁶⁹ It should be noted that ‘in virtue of himself’ does not imply that each particular possesses an essence

⁶⁷ For discussions of the meaning of *logikōs* in this passage, see Waitz 1846, 353–4, who interprets it as *dialektikōs*; Bonitz 1966/2019, 181 (‘im allgemeinen’); Ross 1924b, 168; Lewis 2013, 76, note 20 (‘linguistic inquiries or considerations’); Frede/Patzig 1988b, 59 (‘rein formal’); Wedin 2000, 201 (‘logically’); Burnyeat 2001, 19–25 (‘in general’). I follow Burnyeat’s interpretation, according to which *logikōs* here characterizes a mode of inquiry that proceeds from general and common premises, as opposed to premises that are proper to a particular science. By contrast, *phusikōs* characterizes a mode of inquiry that proceeds from premises proper to natural philosophy. See also Ferejohn 1994, 292–3; Angioni 2014, 76–7; Zingano 2017.

⁶⁸ *Metaph.* Z 4, 1029^b13–16, trans. C. D. C. Reeve 2016, modified: καὶ πρῶτον εἰπόμεν ἓνια περὶ αὐτοῦ λογικῶς, ὅτι ἐστὶ τὸ τί ἦν εἶναι ἐκάστω ὃ λέγεται καθ’ αὐτό. οὐ γὰρ ἐστὶ τὸ σοὶ εἶναι τὸ μουσικῶς εἶναι· οὐ γὰρ κατὰ σαντὸν εἶ μουσικός. ὁ ἄρα κατὰ σαντόν. Following Jaeger 1957, I read τὸ τί ἦν εἶναι ἐκάστω at 1029^b14, rather than τὸ τί ἦν εἶναι ἐκάστου as Ross 1924b does.

⁶⁹ See also *Metaph.* Δ 18, 1022^a25–7, where Aristotle speaks of the what–it–is–to–be for Callias, who is a particular man.

that is expressed by a distinct account. Rather, I propose that although the what-it-is-to-be-you is proper to ‘you’ ontologically, it is epistemologically indistinguishable from the what-it-is-to-be for another man.⁷⁰ In other words, the account of the what-it-is-to-be for a particular man is identical to that of the corresponding *infima species* ‘man’.

The reason for this difference between Plato and Aristotle lies in their contrasting conceptions of sensible particulars. For Aristotle, each sensible particular possesses a stable nature that is shared by all the sensible particulars under the same species, whereas Plato denies this. Accordingly, Plato never asks ‘What is it?’ of a sensible particular; rather, he always directs the question towards an intelligible entity, which can be a Platonic Form or a mathematical object. Even if we assume the existence of a Form ‘Man’, that Form is the essence not of any particular man but of the Form ‘Man’ itself. This is because, for Plato, the relation of participation between Socrates and the Form ‘Man’ is not different in kind from that between Socrates and the Form ‘White’. Indeed, Socrates’ participation in the Form ‘Man’ is no more necessary than his participation in the Form ‘White’. Both relations are contingent.

The view that for Plato, sensible particulars possess neither a stable nature nor an essence has already been defended by several scholars. For instance, Alan Code,

⁷⁰ However, my interpretation differs from that of Bostock 1994, 86–7, who argues that the what-it-is-to-be-you is numerically identical to the what-it-is-to-be for another man. By contrast, I maintain that the forms inhering in different particulars are ontologically distinct and thus numerically different, although they are indistinguishable in account. For the view that an Aristotelian form is ontologically particular, but epistemologically universal, see Kwon 2009. It should also be noted that proponents of particular forms generally maintain that the forms of particular instances of the same species are defined by one and the same formula. See, for instance, A.C. Lloyd 1981, 36–41, Frede/Patzig 1988a, 48–57.

drawing on his distinction of ‘X Is Y’ (Y belongs to X essentially) and ‘X Has Y’ (Y belongs to X non-essentially), argues that:

Plato accounts for and explains the application of language to items in the sensible realm in terms of what those items Have (at least in some key cases, in terms of the separable Forms in which they participate), not in terms of what they Are—for there is nothing definable or scientifically knowable that they Are. The forms, but not the sensible particulars, are endowed with essential natures—the very natures that the Forms Are.⁷¹

On this interpretation, sensible particulars possess neither essences nor essential predicates, since the relation of participation between a sensible particular and a Form is always accidental rather than essential.⁷²

A similar point is made by Wolfgang–Rainer Mann, who argues that sensible particulars, for Plato, lack a stable nature precisely because they are always subject to the process of becoming:

Plato’s distinction (as it is presented in the middle dialogues) partitions all the items that are loosely speaking called beings into, on the one hand, the beings strictly speaking, that is, the Forms; and, on the other hand, the becomings strictly speaking, that is, the participants. Given that partition, it turns out that no claims made about the participants are true in virtue of their nature. Indeed, as we will see, on Plato’s view, the participants do not have natures at all.⁷³

⁷¹ Code 1986, 427.

⁷² See also Mann 2000, 77–8, note 5. There, Mann argues that, for Plato, the relation of participation between a sensible particular and a Form corresponds to accidental predication.

⁷³ Mann 2000, 87.

Mann has rightly pointed out that for Plato, a sensible particular, insofar as it belongs to the realm of ‘becoming’, never ‘is’ anything, but always ‘becomes’ some other thing. This leads to the result that the ‘What is it?’ question cannot reasonably be asked of it.

So far, I have shown that for both Plato and Aristotle, there is neither essence nor definition of a sensible particular *qua* that sensible particular. In other words, for both of them, one cannot ask ‘What is it?’ about a sensible particular *qua* that sensible particular. At the same time, while Aristotle admits that we can ask ‘What is it?’ of a sensible particular insofar as it is an instance of a species or a genus, no corresponding possibility can be found in Plato.

1.3. Aristotelian Twist (2): The Hierarchy of Essences

The second twist Aristotle adds to the notion of logical essence is his establishment of a hierarchy of essences concerning the different ways in which an essence is essence.

I suggest that Plato does not presuppose a hierarchy of essences concerning the different ways in which an essence is essence. To be sure, for Plato, different entities possess essences in different ways. For him, only intelligible entities, namely, Forms and mathematical objects, possess essences, since only they are exempt from generation and corruption. Platonic Forms and mathematical objects possess essences in different ways: while the essence of a Form is simply the Form itself,⁷⁴ the essence

⁷⁴ Insofar as Platonic Forms have themselves as essences, I suppose that it is legitimate to claim that Platonic Forms both are essences and have essences. By contrast, Politis 2021 argues that Platonic Forms are essences rather than entities that have essences. This view appears to presuppose that, if something

of a mathematical object is the corresponding Form. For example, the essence of the Form ‘three’ is itself, whereas the essence of the mathematical number three is the Form ‘three’.

However, what I mean by ‘hierarchy of essences’ does not concern the different ways some entity possesses an essence, but the different ways an essence is essence. I suggest that such a hierarchy of essences is not found in Plato, since for Plato, all Forms are essences in the same way. To be sure, we may find some kinds of hierarchy among Forms. For example, in *Sophist*, the *megista genē* are distinguished from the other Forms in that they are structuring, whereas the other Forms are structured. Moreover, if the kinds attained through the method of division in *Sophist* and *Statesman* are themselves Forms, then there is also a hierarchy of generality among Forms. Neither of these, however, constitutes a hierarchy of essences in the relevant sense, that is, a hierarchy concerning the manner in which an essence is essence. Rather, Being is the essence of itself just in the same way as another Form is the essence of itself. In other words: even though there are different kinds of hierarchy among Platonic Forms, they are essences in the same way.

Aristotle, by contrast, establishes a hierarchy of essences, parallel to his hierarchy of beings. His account rests on two fundamental metaphysical assumptions. The first is that ‘being’ is said in many ways, primarily of substances and derivatively of non–

has an essence, its essence must be distinct from the thing itself. See Politis id. 11, 231, 234. Yet Politis himself speaks of ‘the essence of’ a Form, while maintaining that this essence is simply the Form itself (id. 231). As Politis id. 234 later remarks, ‘[...] if a thing *has* an essence in the strict sense, then it is *identical with* its essence; [...]’ (Emphases are mine.) In my view, this is precisely the sense in which it is legitimate to say that Forms both are and have essences. Thanks to Béatrice Lienemann for pressing me on this point.

substantial entities. The second is that there is a parallel between being and essence. The first assumption is explicated in *Metaphysics* Γ 2, 1003^b5–10:

[...] so, too, being is said in many ways (*to on legetai pollachōs*), but all with reference to one principle. For some are said to be because they are substances, others because they are attributes of substances, others because they are a route to substance, or else by being corruptions, privations, or qualities of substance, or productive or generative either of substance or of things that are said with reference to substance, or denials of one of these or of substance. That is why we say even of non-being that it is not being.⁷⁵

Here Aristotle maintains that ‘being’ is said in many ways, but always with reference to one ‘principle’, namely substances. Substances are beings in the primary sense, whereas non-substantial entities are beings only insofar as they stand in an appropriate relation to substance—as attributes of substances, as processes leading to them or as corruptions of them, as privations or as qualities of them, and so forth.

Unlike Plato, who holds that only Forms are essences and that they are essences in the same way, Aristotle acknowledges that the essences of different kinds of entities are not called essences in the same way: if an entity is called being in a more proper sense, its essence is likewise called an essence in a more proper sense.⁷⁶ Such a parallel

⁷⁵ *Metaph.* Γ 2, 1003^b5–10, trans. C. D. C. Reeve 2016, slightly modified: [...] οὕτω δὲ καὶ τὸ ὄν λέγεται πολλαχῶς μὲν ἀλλ’ ἅπαν πρὸς μίαν ἀρχήν· τὰ μὲν γὰρ ὅτι οὐσίαι, ὄντα λέγεται, τὰ δ’ ὅτι πάθη οὐσίας, τὰ δ’ ὅτι ὁδὸς εἰς οὐσίαν ἢ φθοραὶ ἢ στερήσεις ἢ ποιότητες ἢ ποιητικὰ ἢ γεννητικὰ οὐσίας ἢ τῶν πρὸς τὴν οὐσίαν λεγομένων, ἢ τούτων τινὸς ἀποφάσεις ἢ οὐσίας· διὸ καὶ τὸ μὴ ὄν εἶναι μὴ ὄν φαμεν.

⁷⁶ For the idea of a hierarchy of essences in *Metaphysics* Z 4, see already Loux 1991, 90–1; Galluzzo/Mariani 2006, 139; Lewis 2013, 90–2. I argue that Aristotle’s hierarchy of essences is structured according to two interrelated criteria: ontological priority and unity. These criteria are closely intertwined since what is ontologically prior also possesses unity to a greater degree. This should come

between being and essence can be found in *Metaphysics* Z 4, 1030^a17–1030^b13, where Aristotle extends the parallel also to definition, the logical counterpart of essence:

Or is the definition, like the what–it–is, also said in many ways? For the what–it–is signifies in one way the substance and the this something, and in another way it signifies each of the other things that are predicated—quantity, quality, and the like. For just as the being (*to estin*) holds of all of them, though not in the same way, but of one primarily, and of the others in a derivative way, so also the what–it–is holds unqualifiedly of the substance and in some way also of the others. For we can also ask what the quality is, and so quality is also among the what–it–is, but not unqualifiedly. [...] We must, then, also investigate how we should speak about each of them, but not more than how the thing in fact is. That is why now too, since what is said is evident, it is also evident that the what–it–is–to–be will hold similarly primarily and unqualifiedly of the substance, and derivatively of the others, just as with the what–it–is—not what–it–is–to–be without qualification, but what–it–is–to–be for a quality, or what–it–is–to–be for a quantity.⁷⁷

as no surprise, given Aristotle’s well-known correlation between being and unity. For the significance of unity in establishing the hierarchy of essences, see, for example, *Metaph.* Z 4, 1030^b7–12. Lewis 2013, 87–90 has already identified ‘unity’ and ‘primacy’ as two conditions governing definition and essence, although he does not explicitly argue that the two conditions are intertwined.

⁷⁷ *Metaph.* Z 4, 1030^a17–32, trans. C. D. C. Reeve 2016, modified: ἡ καὶ ὁ ὁρισμὸς ὥσπερ καὶ τὸ τί ἐστὶ πλεοναχῶς λέγεται; καὶ γὰρ τὸ τί ἐστὶν ἓνα μὲν τρόπον σημαίνει τὴν οὐσίαν καὶ τὸ τόδε τι, ἄλλον δὲ ἕκαστον τῶν κατηγορουμένων, ποσὸν ποιὸν καὶ ὅσα ἄλλα τοιαῦτα. ὥσπερ γὰρ καὶ τὸ ἔστιν ὑπάρχει πᾶσιν, ἀλλ’ οὐχ ὁμοίως ἀλλὰ τῷ μὲν πρώτῳ τοῖς δ’ ἐπομένως, οὕτω καὶ τὸ τί ἐστὶν ἀπλῶς μὲν τῇ οὐσίᾳ πῶς δὲ τοῖς ἄλλοις· καὶ γὰρ τὸ ποιὸν ἐροίμεθ’ ἂν τί ἐστὶν, ὥστε καὶ τὸ ποιὸν τῶν τί ἐστὶν, ἀλλ’ οὐχ ἀπλῶς, [...] —δεῖ μὲν οὖν σκοπεῖν καὶ τὸ πῶς δεῖ λέγειν περὶ ἕκαστον, οὐ μὴν μᾶλλον γε ἢ τὸ πῶς ἔχει· διὸ καὶ νῦν ἐπεὶ τὸ λεγόμενον φανερόν, καὶ τὸ τί ἦν εἶναι ὁμοίως ὑπάρξει πρώτῳ μὲν καὶ ἀπλῶς τῇ οὐσίᾳ, εἴτα καὶ τοῖς ἄλλοις, ὥσπερ καὶ τὸ τί ἐστὶν, οὐχ ἀπλῶς τί ἦν εἶναι ἀλλὰ ποιῷ ἢ ποσῷ τί ἦν εἶναι.

According to Aristotle, the what-it-is and the what-it-is-to-be, like ‘being’ (*to estin*), hold primarily of substances, and derivatively of non-substantial categorial entities. This leads to the claim that the what-it-is-to-be for a non-substantial categorial entity is not the what-it-is-to-be ‘without qualification’ (*haplōs*) but must instead be qualified by expressions such as ‘for a quality’ (*poiō[i]*) and ‘for a quantity’ (*posō[i]*). In other words, the essence of a non-substantial categorial entity is called essence in a less proper way than that of a substance. Later in *Metaphysics* Z 4, 1030^b12–13, Aristotle indicates that an accidental compound such as ‘white man’ also has a definition and an essence. However, essence holds of an accidental compound in an even more derived sense than of a non-substantial categorial entity. Correspondingly, the essence of an accidental compound is called essence in an even less proper way than that of a non-substantial categorial entity.⁷⁸

In sum, though both Plato and Aristotle admit that different kinds of entities possess essences in different ways, Aristotle establishes a hierarchy of essences concerning the way in which an essence is essence, whereas Plato does not. Aristotle’s hierarchy of essences as presented in the passage cited above needs to be supplemented with further details. First, since substantial forms turn out to be the causes of being of composite substances, the essences of substantial forms, which are the forms themselves, should occupy the highest level. Composite substances come next, followed by attributes and then by *per se* compounds. *Per se* compounds rank below attributes because their being depends on both an attribute and its proper subject. On an even lower level, we find

⁷⁸ *Metaph.* Z 4, 1030^b12–13: ‘That is why there will be an account and a definition also of white man, but in another way than there is of white and of substance.’ (trans. C. D. C. Reeve 2016, modified: διὸ καὶ λευκοῦ ἀνθρώπου ἔσται λόγος καὶ ὁρισμός, ἄλλον δὲ τρόπον καὶ τοῦ λευκοῦ καὶ οὐσίας.)

accidental compounds. Their position below *per se* compounds is explained by their mode of being. The being of a *per se* compound is dependent on a *per se* predication between an attribute and its proper subject, whereas the being of an accidental compound is dependent merely on an accidental predication between an attribute and a subject.⁷⁹

1.4. Aristotelian Twist (3): The Notion of *per se* Predication

1.4.1. Aristotle's Determination of Logical Essence in Terms of *per se* Predication

The third, and perhaps the most significant, Aristotelian twist with respect to the notion of logical essence is that he determines it through *per se* predication. It should first be noted that *per se* predication is broader than essential predication. Although every essential predication is *per se*, most *per se* predications are not essential. For instance, 'having interior angles equal to two right angles' (2R) holds of the triangle *per se* but not essentially.

⁷⁹ The kinds of beings listed here are not exhaustive. Aristotle also recognizes trans-categorical entities such as motion, entities that function as higher-order predicates such as species-hood and genus-hood, and the matter of a composite subject. It is, however, difficult to determine where the essences of these entities should be located on the hierarchy. Among these cases, I maintain that the essence of the matter of a composite subject is the form which the matter is potentially. For this view, see Pfeiffer 2024, 152. See also *DA* II 1, 412^a19–21, 412^b11, where Aristotle identifies the soul as the what-it-is-to-be for a natural body having life potentially. Concerning the essences of trans-categorical entities and entities that function as higher-order predicates, Aristotle is not explicit about their status. It is probable that their essences occupy an even lower position than those of accidental compounds.

As noted above, in *Metaphysics* Z 4, 1029^b13–16, Aristotle characterizes essence in terms of *per se* predication: ‘essence is what something is said to be *per se* (ἐστὶ τὸ τί ἦν εἶναι ἐκάστῳ ὃ λέγεται καθ’ αὐτό)’. The notion of essence at issue here must be that of logical essence, since an entity and its cause are not related through *per se* predication.⁸⁰

Aristotle distinguishes several senses of *per se* in both *Posterior Analytics* I 4 and *Metaphysics* Δ 18. Essence is said to be *per se* in one specific sense, namely the one described in *Metaphysics* Δ 18, 1022^a25–7:

In one way the what–it–is–to–be for something is what it is *per se*, for instance, Callias is *per se* Callias and the what–it–is–to–be for Callias.⁸¹

Aristotle thus explicates essence in terms of *per se* predication, according to a specific sense of *per se*. We see that this specific sense of *per se* again makes use of the notion of essence. In fact, in *Posterior Analytics* I 4, 73^a34–^b5, the two senses of *per se* predication are determined in terms of the notion of the what–it–is. This mutual determination of logical essence and *per se* predication indicates that both notions are primary and must therefore be determined through their mutual relation.

It should be noted, however, that we should not take the determination of essence in terms of *per se* predication to imply, as Charlotte Witt claims, that essence is a

⁸⁰ Note that Aristotle acknowledges that we may say ‘Socrates is his soul’, where the cause also becomes a predicate. However, it is unclear whether this can be seen as a *per se* predication. For the possibility of stating that ‘Socrates is his soul’, see, for instance, *Metaph.* Z 10, 1035^a7–9, 1036^a16–19, Z 11, 1037^a7–8.

⁸¹ *Metaph.* Δ 18, 1022^a25–7: translation is mine: ἐν μὲν γὰρ καθ’ αὐτὸ τὸ τί ἦν εἶναι ἐκάστῳ, οἷον ὁ Καλλίας καθ’ αὐτὸν Καλλίας καὶ τὸ τί ἦν εἶναι Καλλία.

property of its bearer.⁸² I suggest instead that an essence is predicated of its bearer *per se* in a different sense from that in which an essential predicate or property holds of it. It is legitimate to say that ‘essence’ is predicated of its bearer *per se*, since the account that signifies essence—namely, the definition—can take the place of a predicate. Such a predication, however, is merely a logical predication that does not reflect any real attribution of an attribute or property to a subject. In *Posterior Analytics* I 4, we only find the sense of *per se* in which an essential predicate or property holds of its subject:

The things that inhere in the what-it-is [of something] [hold of that thing] *per se*. For instance, line [holds *per se* of] of triangle and point [holds *per se* of] line (for their essences consist of these, and these are present in the account which states what it is).⁸³

The examples of line and triangle and of point and line show that this sense of *per se* applies not only to essential predicates, but more generally to whatever is contained in the essence of a thing, even when its name is not logically predicated of the subject. Aristotle refers to this sense again in *Metaphysics* Δ 18, 1022^b27–9, as a different sense of *per se* from that in which an essence is predicated of its bearer, mentioned in 1022^b25–7. If so, then Aristotle recognizes two distinct kinds of *per se* predications: one between essence and its bearer, and another between an essential predicate (or a constituent of essence) and its subject.⁸⁴ Significantly, the sense of *per se* in which an

⁸² See Witt 1989, 105.

⁸³ *An. post.* I 4, 73^a34–7, translation is mine: Καθ’ αὐτὰ δ’ ὅσα ὑπάρχει τε ἐν τῷ τί ἐστίν, οἷον τριγώνῳ γραμμῇ καὶ γραμμῇ στιγμῇ (ἡ γὰρ οὐσία αὐτῶν ἐκ τούτων ἐστί, καὶ ἐν τῷ λόγῳ τῷ λέγοντι τί ἐστίν ἐνυπάρχει), [...].

⁸⁴ I thus do not agree with Witt 1989, 105, 287, M.L. Gill 2024, 208, according to whom essence holds of the thing also in the sense of *per se* mentioned in *Posterior Analytics* I 4, 73^a34–7.

essence is predicated of its bearer is only described in *Metaphysics* Δ 18, but not in *Posterior Analytics* I 4. This omission is deliberate, since the discussion of the different senses of *per se* in *Posterior Analytics* I 4 is intended to determine the sense in which the premises and conclusions of demonstrations must be *per se*.⁸⁵ Predications in demonstrations, however, must be predications ‘without qualification’ (*haplōs*), which scholars often call ‘natural predications’, in *Posterior Analytics* I 22.⁸⁶ In such predications, which correctly reflect the ontological predicative structure of reality, the predicate is always a property, and the subject is always a substance or a mathematical object.⁸⁷

If the *per se* predication between an essence and its bearer is not a natural predication, then essence need not be a property of its bearer. In fact, essence–predication is not a predication of a property but an identity predication: the predicate states what the subject is, rather than attributing a property to it.⁸⁸ This, I suggest, explains why Aristotle omits this sense of *per se* from *Posterior Analytics* I 4, while introducing it only in *Metaphysics* Δ 18, where the theory of demonstration is not at issue. The same, I suggest, should hold for *Metaphysics* Z 4,1029^b13–16, where essence is determined through *per se* predication. There Aristotle does not mean to attribute essence as a property to its bearer. Rather, the sense of *per se* predication there is a special one, namely, identity predication.

⁸⁵ See *An. post.* I 4, 73^a24–7: ληπτέον ἄρα ἐκ τίνων καὶ ποίων αἱ ἀποδείξεις εἰσὶν. πρῶτον δὲ διορίσωμεν τί λέγομεν τὸ κατὰ παντὸς καὶ τί τὸ καθ’ αὐτὸ καὶ τί τὸ καθόλου.

⁸⁶ See *An. post.* I 22, 83^a18–21.

⁸⁷ See *An. post.* I 22, 83^a1–20.

⁸⁸ For the idea that reflexive predication, that is, identity predication, is not applicable in demonstration, since it is not the ‘predication without qualification (*haplōs*)’ in *Posterior Analytics* I 22, see already Malink 2022, 198, note 107.

1.4.2. *The Notion of per se Predication as Not Introduced by Plato*

I have argued that Aristotle determines logical essence in terms of *per se* predication, according to one specific sense of *per se*. This raises the question of whether the notion of *per se* predication is original to Aristotle or can already be found in Plato. I suggest that Plato has not yet introduced *per se* predication explicitly. More specifically, I defend the following points. First, in Plato, the phrase *auto kath' hauto* and its feminine form *autē kath' hautē* do not refer to *per se* predication. Rather, these phrases refer to the state of being considered separately from and independently of anything else. Second, the notion of *per se* predication appears only implicitly and negatively in *Phaedo* 102c1–2. Third, predications like ‘snow is cold’ and ‘fire is warm’ in *Phaedo* 103c–105e express necessary predications that are not *per se*. Finally, the so-called ‘self-predication’ of Platonic Forms can only be seen as an anticipation, but not as an explicit introduction, of *per se* predication. With these points taken together, I argue that the notion of *per se* predication is not yet introduced by Plato.

The first point I wish to establish is that, in Plato, the phrase *auto kath' hauto* and its feminine form *autē kath' hautē*⁸⁹ do not refer to *per se* predication. Rather, they characterize something as being considered separately from and independently of anything else.

For example, in *Phaedo* 64c5–8, Socrates asks: ‘Do we believe that death is this, namely, that the body comes to be separated by itself apart from the soul, and the soul

⁸⁹ See, for instance, *Phd.* 64c5–8, 66a2, 78d5–6, 83b1–2, 100b6.

comes to be separated by itself apart from the body.’⁹⁰ In this passage, *auto kath’ hauto* and *autē kath’ hautē* describe the body and the soul as being separated from each other.

In *Theaetetus*, there are several instances of *auto kath’ hauto* that appear to qualify the *copula* and thus to express *per se* predication (cf. *Tht.* 152d3, 153e4, 157a8, 182b3–4). In these passages, Plato formulates the relativist claim that ‘nothing is *kath’ hauto* one thing’ (see, for example, *Tht.* 152d2–3: ἐν μὲν αὐτὸ καθ’ αὐτὸ οὐδέν ἐστιν). Does *auto kath’ hauto* in these passages indeed express *per se* predication? I argue that closer examination shows that *auto kath’ hauto* in these cases does not qualify the copula but rather characterizes the ontological status of something as being considered separately from and independent of any other thing. Accordingly, ἐν μὲν αὐτὸ καθ’ αὐτὸ οὐδέν ἐστιν should not be understood to mean that ‘one thing’ is not a *per se* predicate of anything. Rather, it means that ‘nothing, when considered separately from and independent of anything, is one thing’. The background theory for this claim is the relativist theory, according to which nothing becomes anything when considered in isolation; rather, everything becomes what it is only in relation to something else. This point is especially clear from the following passage in *Theaetetus* 156e7–157b1:

We must understand this account as applying in the same way to hard and hot and everything else: nothing, as we were saying before, is in itself (*auto kath’ hauto*) any of these. All of them, of all kinds whatsoever, are what things become through association with one another (*pros allēla homilia[i]*), as the result of motion. For even in the case of the active and passive motions it is impossible, as they say, for thought, taking them singly

⁹⁰ *Phd.* 64c5–8, trans. G.M.A. Grube, in Cooper 1997: καὶ εἶναι τοῦτο τὸ τεθνάναι, χωρὶς μὲν ἀπὸ τῆς ψυχῆς ἀπαλλαγὴν αὐτὸ καθ’ αὐτὸ τὸ σῶμα γεγονέναι, χωρὶς δὲ τὴν ψυχὴν [ἀπὸ] τοῦ σώματος ἀπαλλαγεῖσαν αὐτὴν καθ’ αὐτὴν εἶναι;

(*epi henos*), to pin them down to being anything. There is no passive till it meets the active, no active except in conjunction with the passive; and what, in conjunction with one thing (*tini sunelthon*), is active, reveals itself as passive when it falls in with something else. And so, wherever you turn, there is nothing, as we said at the outset, which in itself (*auto kath' hauto*) is just one thing; all things become relatively to something (*tini*).⁹¹

The same also applies to the occurrence of *auto kath' hauto* at *Theaetetus* 205c6, where Socrates examines a theory that, as he says, he once heard in a dream:

Socrates: Now, my friend, a little while ago, if you remember, we were inclined to accept a certain proposition which we thought put the matter very well—I mean the statement that no account can be given of the primaries of which other things are constituted, because each of them is in itself (*auto kath' hauto*) incomposite; and that it would be incorrect to apply even the term ‘being’ to it when we spoke of it or the term ‘this’, because these terms signify different and alien things; and that is the reason why a primary is an unaccountable and unknowable thing. Do you remember?⁹²

⁹¹ *Th.* 156e7–157b1, trans. M. J. Levett, rev. M. Burnyeat, in Cooper 1997: καὶ τᾶλλα δὴ οὕτω, σκληρὸν καὶ θερμὸν καὶ πάντα, τὸν αὐτὸν τρόπον ὑποληπτέον, αὐτὸ μὲν καθ’ αὐτὸ μηδὲν εἶναι, ὃ δὴ καὶ τότε ἐλέγομεν, ἐν δὲ τῇ πρὸς ἄλληλα ὁμιλίᾳ πάντα γίνεσθαι καὶ παντοῖα ἀπὸ τῆς κινήσεως, ἐπεὶ καὶ τὸ ποιοῦν εἶναι τι καὶ τὸ πάσχον αὐτῶν ἐπὶ ἐνὸς νοῆσαι, ὥς φασιν, οὐκ εἶναι παγίως. οὔτε γὰρ ποιοῦν ἐστὶ τι πρὶν ἂν τῷ πάσχοντι συνέλθῃ, οὔτε πάσχον πρὶν ἂν τῷ ποιοῦντι· τό τε τι συνελθὼν καὶ ποιοῦν ἄλλω αὐτῷ προσπεσὼν πάσχον ἀνεφάνη. ὥστε ἐξ ἀπάντων τούτων, ὅπερ ἐξ ἀρχῆς ἐλέγομεν, οὐδὲν εἶναι ἐν αὐτῷ καθ’ αὐτό, ἀλλὰ τι ἀεὶ γίνεσθαι, [...].

⁹² *Th.* 205c4–10, trans. M. J. Levett, rev. M. Burnyeat, in Cooper 1997: {ΣΩ.} Μέννησαι οὖν, ὃ φίλε, ὅτι ὀλίγον ἐν τῷ πρόσθεν ἀπεδεχόμεθα ἡγούμενοι εἶ λέγεσθαι ὅτι τῶν πρώτων οὐκ εἴη λόγος ἐξ ὧν τᾶλλα σύγκειται, διότι αὐτὸ καθ’ αὐτὸ ἕκαστον εἴη ἀσύνθετον, καὶ οὐδὲ τὸ “εἶναι” περὶ αὐτοῦ ὀρθῶς ἔχει προσφέροντα εἰπεῖν, οὐδὲ “τοῦτο,” ὥς ἕτερα καὶ ἀλλότρια λεγόμενα, καὶ αὕτη δὴ ἡ αἰτία ἀλογόν τε καὶ ἄγνωστον αὐτὸ ποιοῖ;

Here again, with the claim ‘each of the primaries is *auto kath’ hauto* incomposite’, Plato does not mean that ‘incomposite’ is a *per se* predicate of a primary entity. Rather, he means that when a primary entity is considered separately from and independently of anything else, it is incomposite.

The second point I shall suggest is that while *Phaedo* 102c1–2 seems to express the notion of *per se* predication, it is only an implicit and negative use. There Socrates says: ‘For it is not according to nature (*pephukenai*) that Simmias is taller in virtue of being Simmias (*tō[i] ximian einai*). Rather, [it is according to nature that Simmias is taller] in virtue of the tallness he happens to have.’⁹³ I do not take *pephukenai* here to mean that ‘it belongs to the nature of Simmias’ as though Plato were attributing a stable nature to Simmias. Rather, I take *pephukenai* impersonally, as indicating what corresponds to reality.⁹⁴ Plato’s point, then, is that it is not the case that Simmias is taller in virtue of being Simmias. Instead, Plato’s aim is to show that the cause of an attribute belonging to a particular subject does not lie in the subject itself, but in the attribute that it happens to possess. I propose that ‘the tallness Simmias happens to have’ is the immanent form inhering in Simmias, resulting from his participation in the Form ‘Tallness’, rather than the Form ‘Tallness’ itself. Thus, to say that Simmias is tall in virtue of the tallness he happens to have amounts to saying that he is tall in virtue of his participation in the Form ‘Tallness’. Since the cause of an attribute holding of a particular subject lies in something other than the particular subject itself, this relation

⁹³ *Phd.* 102c1–2, translation is mine: οὐ γὰρ που πεφυκέναι Σιμμίαν ὑπερέχειν τούτῳ, τῷ Σιμμίαν εἶναι, ἀλλὰ τῷ μεγέθει ὃ τυγχάνει ἔχων.

⁹⁴ See Mann 2000, 132, note 97: ‘φύω in its various forms need not imply a commitment to natures in any strong sense of nature.’ For the view that *pephukenai* indicates that the predicate holds in virtue of the nature of the subject, see O’Brien 1967, 199.

may, from an Aristotelian perspective, be regarded as a case of *per accidens* relation. Plato himself, however, does not draw a distinction between *per se* and *per accidens* predication. Rather, the phrase ‘not in virtue of being Simmias’ can only be seen as an implicit and negative use of *per se* predication.

The third point I wish to establish is that predications like ‘snow is cold’ and ‘fire is warm’ in *Phaedo* 103c–105e merely express necessary predications that are not *per se*. This interpretation contrasts with the widespread view that such propositions are instances of *per se* predication, or even of essential predication.⁹⁵

For example, in *Phaedo* 103c10–e5, Plato argues that snow admits the Form ‘Cold’, but never the Form ‘Warm’, whereas fire admits the Form ‘Warm’, but never the Form ‘Cold’:

“Consider then whether you will agree to this further point. There is something you call warm and something you call cold.”—“There is”. “Are they the same as what you call snow and fire?” —“By Zeus, no.” “So the warm is something other than fire, and the cold is something other than snow?” —“Yes.” “You think, I believe, that being snow it will not admit the warm, as we said before, and remain what it was and be both snow and warm, but when the warm approaches it will either retreat before it or be destroyed.” —“Quite so.” “So fire, as the cold approaches, will either go away or be destroyed; it will never venture to admit coldness and remain what it was, fire and cold.” —“What you say is true.” “It is true then about some of these things that not only the Form itself deserves its own name

⁹⁵ For the view that such claims are essential predications, see O’Brien 1967, 199–200 with note 1; Nehamas 1973, 469–73; Nehamas 1975, 108–9; Gallop 1975, 207, 216; D. Frede 1978, 29; 2011, 147–51.

for all time, but there is something else that is not the Form but has its character (*morphē*) whenever it exists. [...].”⁹⁶

At this point, it is unclear whether snow and fire are to be understood as Forms, immanent forms, or particular instances. I follow Gallop (1975) in taking them to be particular instances that participate in the Form ‘Snow’ and the Form ‘Fire’. One argument offered by Gallop is based on *Phaedo* 106a3–10, where Plato says that ‘snow would retreat safe and unthawed’ and that fire ‘would neither be quenched nor destroyed, but retreat safely’.⁹⁷ Gallop is right in pointing out that the predicates ‘unthawed’ and ‘quenched’ should qualify the particular instances. Another argument from Gallop is that if snow and fire are immanent forms, the possibility that they might perish would fail to be a genuine alternative.⁹⁸ A further argument is indicated by the final phrase in the passage cited above: ‘[...] but there is something else that is not the Form but has its character whenever it exists’. In this phrase, I suppose that ‘something else that is not the Form but has its character’ is a particular instance, and the character

⁹⁶ *Phd.* 103c10–e5, trans. G. M. A. Grube, in Cooper 1997, slightly modified: “Ἐτι δὴ μοι καὶ τότε σκέψαι, ἔφη, εἰ ἄρα συνομολογήσεις. θερμόν τι καλεῖς καὶ ψυχρόν; Ἐγώ γε. Ἄρ’ ὅπερ χιόνα καὶ πῦρ; Μὰ Δί’ οὐκ ἔγωγε. Ἀλλ’ ἕτερόν τι πυρὸς τὸ θερμόν καὶ ἕτερόν τι χιόνος τὸ ψυχρόν; Ναί. Ἀλλὰ τότε γ’ οἶμαι δοκεῖ σοι, οὐδέποτε χιόνα γ’ οὔσαν δεξαμένην τὸ θερμόν, ὥσπερ ἐν τοῖς πρόσθεν ἐλέγομεν, ἔτι ἔσεσθαι ὅπερ ἦν, χιόνα καὶ θερμόν, ἀλλὰ προσιόντος τοῦ θερμοῦ ἢ ὑπεκχωρήσειν αὐτῷ ἢ ἀπολεῖσθαι. Πάνυ γε. Καὶ τὸ πῦρ γε αὖ προσιόντος τοῦ ψυχροῦ αὐτῷ ἢ ὑπεξίεναι ἢ ἀπολεῖσθαι, οὐ μέντοι ποτὲ τολμήσειν δεξάμενον τὴν ψυχρότητα ἔτι εἶναι ὅπερ ἦν, πῦρ καὶ ψυχρόν. Ἀληθῆ, ἔφη, λέγεις. Ἔστιν ἄρα, ἦ δ’ ὅς, περὶ ἑνία τῶν τοιούτων, ὥστε μὴ μόνον αὐτὸ τὸ εἶδος ἀξιοῦσθαι τοῦ αὐτοῦ ὀνόματος εἰς τὸν αἰὶ χρόνον, ἀλλὰ καὶ ἄλλο τι ὃ ἔστι μὲν οὐκ ἐκείνο, ἔχει δὲ τὴν ἐκείνου μορφήν αἰεὶ, ὅταν περ ᾖ.

⁹⁷ Trans. G. M. A. Grube, in Cooper 1997.

⁹⁸ See Gallop 1975, 198. This view is followed by D. Frede 1978, 34. For the view that snow and fire here are immanent forms, see Vlastos 1969, 318 with note 70 and Keyt 1963, 168 with note 2. I owe these references to Gallop *ibid.*, 198. More recently, Ebery 2023, 260, calls them ‘bringers’, which are distinguished from both Forms themselves and the immanent forms.

(*morphē*) of the Form is the relevant quality inhering that particular instance, like tallness in Simmias, and coldness in snow, not the Form itself.

Unlike the case of ‘Simmias is taller’, ‘snow is cold’ is a necessary predication. In the former case, Simmias can participate in the Form ‘Tall’ and the Form ‘Short’ at different times or from different aspects. In the latter case, a particular instance of snow, insofar as it is snow, must participate in the Form ‘Cold’, but never in the Form ‘Warm’. Plato expresses the necessity by saying that each has the character (*morphē*) of the relevant Form *whenever it exists* (*aei, hotanper ēi*)’ (*Phd.* 103e4–5).⁹⁹

Is the claim that ‘snow is cold’ also a *per se* predication? In other words, is a particular instance of snow cold *per se*, that is, in virtue of itself? I argue that Plato’s claim that ‘snow, being snow (χιόνα γ’ οὔσαν), will never admit the warm’ at *Phaedo* 103d5–6 indicates the opposite. A particular instance of snow is necessarily cold not in virtue of its being *that particular instance of snow*, but insofar as it is *snow*. Since a particular instance of snow is snow by participating in the Form ‘Snow’, it follows that it is necessarily cold not in virtue of itself, but in virtue of *its participation in the Form ‘Snow’*.

The final point for which I argue is that the so-called ‘self-predication’ of Platonic Forms should be regarded at most as an anticipation but not as an explicit introduction, of the notion of *per se* predication.¹⁰⁰ According to the ‘self-predication’ of Forms, a certain Form is itself characterized by the very predicate to which it corresponds. For instance, in *Phaedo* 76d5–6, Socrates asks whether the equal things are equal in the same way as ‘what the equal is itself (*auto to ho estin*)’, that is, the Form ‘Equal’. Later

⁹⁹ See *Phd.* 103e4–5: [...] ἔχει δὲ τὴν ἐκείνου μορφήν αἰεί, ὅτανπερ ᾖ.

¹⁰⁰ Thanks to Béatrice Lienemann for pressing me on this issue.

in *Phaedo* 100c4–5, he asks whether ‘there is anything beautiful besides the Beautiful itself’ (εἴ τί ἐστιν ἄλλο καλὸν πλὴν αὐτὸ τὸ καλόν).¹⁰¹

In modern scholarship, self-predication of Form is most commonly discussed in connection with the so-called ‘Third Man Argument’ in Plato’s *Parmenides* 132a1–b2. The outline of the ‘Third Man Argument’ is as follows. Suppose that all large things are large in virtue of participating in the Form ‘Largeness’. If the Form ‘Largeness’ is itself large in the same way as the large particulars, there must be a second Form ‘Largeness*’ in virtue of which both the Form ‘Largeness’ and the large particulars are large. If ‘Largeness’, ‘Largeness*’, and the large particulars are again large, a third Form ‘Largeness**’ will likewise be required. The process therefore continues without end, yielding an infinite regress of Largeness.¹⁰² Given that this conclusion is plainly unacceptable, at least one premise in the argument must be rejected. Vlastos argues that we must either reject the self-predication of Form or the non-identity of something that is F and that in virtue of which it is F.¹⁰³

Scholars remain divided over how the self-predication of Platonic Forms should be understood. According to one interpretation, which may be called the ‘identity interpretation’, self-predication is not a genuine predicative statement but merely an

¹⁰¹ For other passages that indicate ‘self-predication’ of Forms, see *Prt.* 330c4–e3, 331b, *Hp. mai.* 289c, 291e, 292e, 294a–b, *Lysis* 217a, *Symp.* 210e–211d, *Soph.* 258b11–c1. I owe these references to Allen 1960, 148, note 3 and Lienemann 2011, 117, note 1.

¹⁰² See *Parm.* 132^{a1}–^{b2}: Οἶμαί σε ἐκ τοῦ τοιοῦδε ἓν ἕκαστον εἶδος οἶεσθαι εἶναι· ὅταν πόλλ’ ἅττα μεγάλα σοι δόξη εἶναι, μία τις ἴσως δοκεῖ ιδέα ἢ αὐτὴ εἶναι ἐπὶ πάντα ιδόντι, ὅθεν ἓν τὸ μέγα ἢ γῆ εἶναι. Ἀληθῆ λέγεις, φάναι. Τί δ’ αὐτὸ τὸ μέγα καὶ τᾶλλα τὰ μέγала, ἐὰν ὡσαύτως τῇ ψυχῇ ἐπὶ πάντα ἴδῃς, οὐχὶ ἓν τι αὐτὸ φανέται, ὃ ταῦτα πάντα μεγάλα φαίνεσθαι; Ἔοικεν. Ἄλλο ἄρα εἶδος μεγέθους ἀναφανήσεται, παρ’ αὐτό τε τὸ μέγεθος γεγονός καὶ τὰ μετέχοντα αὐτοῦ· καὶ ἐπὶ τούτοις αὐτῶσιν ἕτερον, ὃ ταῦτα πάντα μεγάλα ἔσται· καὶ οὐκέτι δὴ ἓν ἕκαστόν σοι τῶν εἰδῶν ἔσται, ἀλλὰ ἄπειρα τὸ πλῆθος.

¹⁰³ For ‘Self-Predication Assumption’ and ‘Nonidentity Assumption’, see Vlastos 1954, 324–5.

identity statement about the Form. Thus, the proposition ‘Largeness is large’ does not attribute the property of being large to Largeness. Rather, it merely states that Largeness is identical to the property of ‘being large’.¹⁰⁴ However, the passages where self-predication is present indicate that Plato does aim to attribute the relevant property to the Form. For example, in asking whether the Form ‘Equal’ is equal in the same way as equal things, Plato clearly means to attribute ‘being equal’, whatever it means, to the Form ‘Equal’.

By contrast, other scholars interpret self-predication of Form as a genuine case of predication and seek to explain how the same predicate can be predicated both of a Form and of its participants. For example, in his seminal paper ‘The Third Man Argument in the *Parmenides*’ (1954), Gregory Vlastos argues that the participants in a Form are F only ‘deficiently’, whereas the Form itself is F perfectly.¹⁰⁵

Alexander Nehamas (1979) develops a different account. According to him, when Plato says that a Form is F, he attributes to the Form not merely the property of ‘being F’, but rather ‘what it is to be F’. He takes the view that being F belongs to the nature of the Form, so that the Form is F essentially, whereas its participants are F only accidentally.¹⁰⁶ Nehamas further emphasizes that a Form is F always, in every case,¹⁰⁷ ‘purely’ and ‘really’.¹⁰⁸ Although he also maintains that a Form possesses the relevant characteristic by being that characteristic itself, his interpretation goes beyond the

¹⁰⁴ For this interpretation, see Cherniss 1944, 298; Allen 1960, 150.

¹⁰⁵ See Vlastos 1954, 337.

¹⁰⁶ See Nehamas 1979, 95–6.

¹⁰⁷ See Nehamas 1979, 95.

¹⁰⁸ See Nehamas 1979, 97.

‘identity interpretation’. Similarly, Meinwald (1991) interprets self-predication of Form as a statement about the Form’s nature and its relations to other Forms.

A different interpretation that treats self-predication of Form as a genuine case of predication is proposed by Sandra Peterson (1973). Peterson draws attention to what she calls ‘Pauline Predication’. In a ‘Pauline Predication’ like ‘Charity suffers long and is kind’, what appears to be predicated of ‘charity’ is in fact attributed to the persons and actions that are charitable.¹⁰⁹ She proposes that self-predication of Form should be understood along similar lines. Moreover, Peterson maintains that Form is said to be F only in the sense that it ‘brings about’ the fact that its participants are F.’¹¹⁰

This latter suggestion anticipates Gail Fine’s causal interpretation of self-predication in her monograph *On Ideas. Aristotle’s Criticism of Plato’s Theory of Forms* (2004). According to Fine, a Form is called F because it is the cause in virtue of which all of its participants are F.¹¹¹ Fine further combines this causal interpretation with the view that Forms are standards or paradigms, maintaining that a Form is F in a perfect sense because it can never be non-F.¹¹²

More recently, Béatrice Lienemann (2011) has argued that self-predication should be understood literally, although the predicate is predicated of the Form without qualification, whereas it is predicated of participants with qualification.¹¹³ On this basis, Lienemann criticizes all interpretations that do not interpret self-predication in a literal way, including what she calls the ‘standard interpretation’ proposed by P. T. Geach

¹⁰⁹ See Peterson 1973, 457–8.

¹¹⁰ See Peterson 1973, 470.

¹¹¹ See G. Fine 2004, 62–3.

¹¹² See G. Fine 2004, 63–4.

¹¹³ See Lienemann 2011, 348–52.

(1956), which, in her view, assumes that the Form and its participants are F in qualitatively the same way.¹¹⁴ By contrast, Lienemann's distinction between 'with qualification' and 'without qualification' already indicates that the Form and its participants are F in qualitatively different ways.

I think this latter family of interpretations, according to which self-predication of Form is a genuine case of predication, is more promising than the 'identity interpretation'. At the same time, I take the view that the varieties of this family of interpretations are not mutually exclusive but complementary. In a sense, we are entitled to claim that a Form is F essentially, without qualification, as a standard, and as the cause for the instances' being F. Here we need not suppose, as Bluck¹¹⁵ and Lienemann do, that an instance that is F and the standard of being F are called F in qualitatively the same way. In any case, a Form is a standard for being F, not a standard for being sensibly F. We can construe a way of being equal that is not sensible.

Now, let us return to the solution of the Third Man Argument suggested by Vlastos: we must either reject the self-predication of Form or the non-identity of something that is F and that in virtue of which it is F. As we said, self-predication of Forms is also present in other dialogues. Therefore, we do not have sufficient reason to reject self-predication of Form. The problem probably lies with the non-identity assumption. With particular instances, the non-identity assumption certainly holds: a particular F is F in virtue of the F-ness that is different from itself. However, a problem arises when we apply it to a Form that is F. If F-ness is F in virtue of another F-ness, the regress

¹¹⁴ See Lienemann 2011, 287–317.

¹¹⁵ See Bluck 1957, 120.

looms. If so, the implicit message in the Third Man Argument is that F-ness is F not in virtue of some further F-ness, but in virtue of itself.

If we interpret it in this way, we can claim that F-ness is F *per se*. However, Third Man Argument as it stands says nothing explicit about it. It is designed as a *reductio ad absurdum* of some false premise that is still to be identified by the reader. Plato does not say explicitly that a Form and its instances are F in different ways, or that a Form is F in virtue of itself, though he may already have had these ideas in his mind. In this sense, self-predication of Form can at most be seen as an anticipation, not an explicit introduction, of *per se* predication.

Let me summarize the arguments developed above. First, in Plato, *auto kath' hauto* and its feminine form *autē kath' hautē* do not refer to *per se* predication, but to the status of being taken separately from and independent of anything else. Second, we can only find an implicit and negative use of the notion of *per se* predication in *Phaedo* 102c1–2, which is, however, not expressed by *kath' hauto*. Third, predications like ‘snow is cold’ and ‘fire is warm’ in *Phaedo* 103c–105e are merely necessary predications that are not *per se*. Fourth, self-predication of the Form can only be seen as an anticipation but not an explicit introduction of *per se* predication. With these points taken together, I argue that Plato has not yet explicitly introduced the notion of *per se* predication. Rather, it is Aristotle who first explicitly and systematically introduces the notion of *per se* predication and determines logical essence in terms of *per se* predication.

2. The Philosophical Motivation for the Logical Essence: Articulating Essence through Essential Predication

In Chapter 1, I have sketched the origin of the notion of logical essence, that is, the Platonic ‘What is it?’ question and Plato’s theory of Forms. In addition, I have explicated the three twists Aristotle added to this notion. The present chapter examines the philosophical motivation for logical essence as a way of articulating essence through essential predication. In 2.1, I show that the parts of a logical essence, that is, genus and specific differences, are essential predicates of their subjects both on an ontological level and on a logical level. On an ontological level, genus and specific differences are SAID OF their subjects. On a logical level, genus and specific differences are predicated in the what–it–is of their subjects. I argue that the ontological predication ‘to be SAID OF ... as of a subject’ underlies the logical predication ‘to be predicated in the what–it–is’. Then, in 2.2, I deal with the puzzle of how a specific difference can be SAID OF its subject, with both its name and account being predicated of its subject. Finally, in 2.3, as part of the solution to the puzzle addressed in 2.2, I argue that since a specific difference is predicated in the category of ‘of what sort it is’ (*poion ti esti*), it does not add its own genus to its subject when constituting its essence. Consequently, the account of an entity *qua* specific difference need not mention its own genus and can be predicated of its subject.

2.1. Genus and Specific Differences as Essential Predicates of Their Subjects

In this section, I show that the parts of a logical essence, that is, genus and specific differences, are essential predicates of their subjects both on an ontological level and on a logical level. I begin with the ontological level, explicating Aristotle's claim that genus and specific differences are SAID OF their subjects, in the sense that both their names and accounts are predicated of their subjects. Then, I argue that the ontological predication 'to be SAID OF ... as of a subject' (*kath' hupokeimenou legesthai ...*) underlies the logical predication 'to be predicated in the what-it-is' (*en tōi ti esti katēgoreisthai*).

The relation 'to be SAID OF ... as of a subject', together with its opposite, 'to be IN ... as in a subject', is determined in *Categories* 5, 2^a19–34:

It is clear from what has been said that of what is SAID OF a subject, it is necessary that both its name and its account are predicated of the subject.¹¹⁶ For example, man is SAID OF a subject, a particular man, and the name is of course predicated (since you will be predicating man of a particular man), and the account of man will be predicated of a

¹¹⁶ Rapp 2024, 155–6 insightfully observes that the transition from 'to be SAID OF as of a subject' (*kath' hupokeimenou legesthai ...*) to 'to be predicated of ...' (*katēgoreisthai kata ...*) makes a shift from ontological to linguistic predication, since names and accounts are linguistic entities. It should be noted, however, that even when a name or an account is predicated, the subject of predication may still be an ontological entity rather than a linguistic one. For this point, see already Perin 2007, 128. Moreover, I prefer to describe names and accounts as logical, rather than linguistic, entities. A single logical name or account may be expressed by different linguistic expressions in different languages. For example, the English 'cat' and the German 'Katze' are distinct linguistic expressions for the same logical name.

particular man (since a particular man is also a man). Thus, both the name and the account will be predicated of the subject. But as for things which are IN a subject, in most cases neither the name nor the account is predicated of the subject. In some cases, there is nothing to prevent the name from being predicated of the subject, but it is impossible for the account to be predicated. For example, the white, which is IN a subject (the body), is predicated of the subject; for a body is called white. But the account of the white will never be predicated of the body.¹¹⁷

Regarding the two relations, ‘to be SAID OF ... as of a subject’ and ‘to be IN ... as in a subject’, I follow the generally accepted view that they correspond, respectively, to essential predication and non-essential predication.¹¹⁸ I also adopt the widely accepted view that these are ontological rather than logical predications.¹¹⁹

As the passage quoted above shows, the criteria for determining whether one entity is SAID OF or IN another are as follows:

(SAID-OF) *X* is SAID OF *Y* as of a subject if and only if both the name and account of *X* are predicated of *Y*.

¹¹⁷ *Cat.* 5, 2^a19–34, trans. Ackrill 1963, slightly modified: —φανερὸν δὲ ἐκ τῶν εἰρημένων ὅτι τῶν καθ’ ὑποκειμένου λεγομένων ἀναγκαῖον καὶ τοῦνομα καὶ τὸν λόγον κατηγορεῖσθαι τοῦ ὑποκειμένου· οἷον ἄνθρωπος καθ’ ὑποκειμένου λέγεται τοῦ τινὸς ἀνθρώπου, καὶ κατηγορεῖται γε τοῦνομα,—τὸν γὰρ ἄνθρωπον κατὰ τοῦ τινὸς ἀνθρώπου κατηγορήσεις·—καὶ ὁ λόγος δὲ τοῦ ἀνθρώπου κατὰ τοῦ τινὸς ἀνθρώπου κατηγορηθήσεται, —ὁ γὰρ τις ἄνθρωπος καὶ ἄνθρωπός ἐστιν· —ὥστε καὶ τοῦνομα καὶ ὁ λόγος κατὰ τοῦ ὑποκειμένου κατηγορηθήσεται. τῶν δ’ ἐν ὑποκειμένῳ ὄντων ἐπὶ μὲν τῶν πλείστων οὔτε τοῦνομα οὔτε ὁ λόγος κατηγορεῖται τοῦ ὑποκειμένου· ἐπ’ ἐνίων δὲ τοῦνομα μὲν οὐδὲν κωλύει κατηγορεῖσθαι τοῦ ὑποκειμένου, τὸν δὲ λόγον ἀδύνατον· οἷον τὸ λευκὸν ἐν ὑποκειμένῳ ὄν τῷ σώματι κατηγορεῖται τοῦ ὑποκειμένου, —λευκὸν γὰρ σῶμα λέγεται, —ὁ δὲ λόγος τοῦ λευκοῦ οὐδέποτε κατὰ τοῦ σώματος κατηγορηθήσεται. Capitalizations are mine.

¹¹⁸ For references, see footnote 14 in Introduction.

¹¹⁹ For references, see footnote 20 in Introduction.

(IN) X is IN Y as in a subject if and only if the name of X is predicated of Y only occasionally, whereas its account is never predicated of Y .¹²⁰

Many scholars reconstruct these determinations as follows:

(SAID–OF*) X is SAID OF Y as of a subject if and only if ‘ X ’ is predicated of Y and X belongs to the same ontological category as Y .

(IN*) X is IN Y as in a subject if and only if X belongs to a different ontological category from Y .¹²¹

According to these reconstructions, specific differences, which normally do not belong to the same ontological category as their subjects, are not SAID OF their subjects. However, Aristotle is explicit that a specific difference is not IN its subject but is rather SAID OF it.¹²² We therefore need alternative paraphrases of (SAID–OF) and (IN).

A more promising interpretation is suggested by Porphyry, who identifies ‘to be SAID OF ... as of a subject’ with ‘to be predicated in the what–it–is’:¹²³

¹²⁰ I follow Lewis 1991, 59–60 in taking these two determinations to have the form of biconditionals rather than mere conditionals. Recently, however, scholars have often interpreted them as one–way conditionals. For this latter interpretation, see Shapiro 2023, 341; Rapp 2024, 148.

¹²¹ For similar reconstructions, see Furth 1988, 14; Lewis 1991, 74.

¹²² See *Cat.* 5, 3^a21–8, *Cat.* 5, 3^a33–^b9.

¹²³ For a similar suggestion, see Rapp 2024, 145.

He says that something is predicated of something as of a subject when it is predicated in the what-it-is. For instance, ‘walking around’ is predicated of Socrates. But if we were to state what Socrates is, we may not say that he is walking around. Therefore, ‘walking around’ is not predicated of Socrates as of a subject. But ‘man’ is also predicated of Socrates, for we may state: Socrates is man. But if you were asked ‘What is Socrates?’, you may state that he is man, so that ‘man’ is predicated of Socrates as of a subject.¹²⁴

This interpretation is supported by Aristotle’s remark that ‘a particular man is also a man’,¹²⁵ which points to a close connection between ‘to be SAID OF ... as of a subject’ and ‘to state what it is’. However, it should be noted that while ‘to be SAID OF ... as of a subject’ corresponds to an ontological predication, ‘to state what it is’ refers to a logical predication. Given that ontological predication underlies logical predication, I suggest that ‘to be SAID OF ... as of a subject’ underlies ‘to state what it is’.

Moreover, in *Topics* I 5, 102^a32–5, Aristotle determines ‘to be predicated in the what-it-is’ (*katēgoreisthai en tōi ti esti*) in terms of appropriate answers to the ‘What is it?’ question:

¹²⁴ Porphyry, in *Cat.* 80.4–11, trans. Strange 1992, slightly modified: Καθ’ ὑποκειμένου φησὶν ἐκεῖνο κατηγορεῖσθαι τινος, ὅταν ἐν τῷ τί ἐστι κατηγορῇται ἐκεῖνο <ὁ> ἀποδίδοται. οἷον τὸ περιπατεῖν κατηγορεῖται κατὰ Σωκράτους· ἀλλ’ ἐὰν ἀποδιδῶμεν, τί ἐστὶν Σωκράτης, οὐκ ἂν εἴποιμεν αὐτὸν τὸ περιπατεῖν, ὥστε οὐ καθ’ ὑποκειμένου κατηγορεῖται τοῦ Σωκράτους τὸ περιπατεῖν. κατηγορεῖται δὲ τοῦ Σωκράτους καὶ ὁ ἄνθρωπος· εἴποις γὰρ ἂν Σωκράτης ἄνθρωπος· ἀλλὰ κἂν ἐρωτηθῇς, τί Σωκράτης, ἀποδιδούς ἂν ὅτι ἄνθρωπος· ἀλλὰ κἂν ἐρωτηθῇς, τί Σωκράτης, ἀποδιδούς ἂν ὅτι ἄνθρωπος. ὁ τοίνυν ἄνθρωπος κατὰ τοῦ Σωκράτους καθ’ ὑποκειμένου κατηγορεῖται.

¹²⁵ *Cat.* 5, 2^a25–6: ὁ γὰρ τις ἄνθρωπος καὶ ἄνθρωπός ἐστιν·

Let us say that those sorts of things are ‘predicated in the what–it–is’ which it would be appropriate to state when asked what the thing in question is, as in the case of a man, when asked what it is, it is appropriate to state that he is an animal.¹²⁶

In this passage, Aristotle claims that any appropriate answer to the ‘What is it?’ question is predicated in the what–it–is. Since ‘to state what it is’ is a matter of logical predication, it follows that ‘to be predicated in the what–it–is’ likewise belongs to the level of logical predication. If the ontological predication ‘to be SAID OF ... as of a subject’ underlies the logical predication ‘to state what it is’, then it also underlies the logical predication ‘to be predicated in the what–it–is’. In fact, according to *Topics* VII 3 and 5, genera and specific differences are predicated in the what–it–is of their subjects.¹²⁷ Accordingly, we can determine ‘to be SAID OF ... as of a subject’ and ‘to be IN ... as in a subject’ as follows:

(SAID–OF**) *X* is SAID OF *Y* as of a subject if and only if, on the level of logical predication, *X* is predicated in the what–it–is of *Y*.¹²⁸

¹²⁶ *Top.* I 5, 102^a32–5, trans. R. Smith 1997, slightly modified: ἐν τῷ τί ἐστι δὲ κατηγορεῖσθαι τὰ τοιαῦτα λεγέσθω ὅσα ἀρμόττει ἀποδοῦναι ἐρωτηθέντα τί ἐστι τὸ προκείμενον· καθάπερ ἐπὶ τοῦ ἀνθρώπου ἀρμόττει, ἐρωτηθέντα τί ἐστίν, εἰπεῖν ὅτι ζῷον.

¹²⁷ See *Top.* VII 3, 153^a17–18: κατηγορεῖται δ’ ἐν τῷ τί ἐστι τὰ γένη καὶ αἱ διαφοραί. *Top.* VII 5, 154^a27–8: καὶ ὅτι ἐν τῷ τί ἐστι τὸ γένος καὶ αἱ διαφοραὶ κατηγοροῦνται.

¹²⁸ Shapiro 2023 interprets what is SAID OF another thing as of a subject as a formal part of that subject, that is, a part that determines what something is. On his view, a species is also a formal part of its particular instances. I am reluctant to adopt this terminology, however, because the expression ‘formal part’ more naturally refers to the constituent parts of a form itself. What Shapiro has in mind is better described as the constituents stated in a definition.

(IN**) *X* is IN *Y* as in a subject if and only if, on the level of logical predication, *X* is not predicated in the what–it–is of *Y*.

According to these determinations, a specific difference is SAID OF its subject even though it belongs to a different ontological category from its subject.

We have now shown that the parts of logical essence, namely, genera and specific differences, are essential predicates of their subjects, both on an ontological level and on a logical level. On an ontological level, they are SAID OF their subjects. On a logical level, they are predicated in the what–it–is of their subjects. Moreover, the ontological predication ‘to be SAID OF ... as of a subject’ underlies the logical predication ‘to be predicated in the what–it–is’.

2.2. A Puzzle: How Can a Specific Difference Be SAID OF Its Subject?

I have shown in 2.1 that a specific difference is SAID OF its subject, in the sense that both its name and its account are predicated of its subject. This, however, gives rise to a puzzle. Given that a specific difference is a quality (see *Metaph.* Δ 14, 1020^a33–^b2),¹²⁹ how can its name and account be predicated of its subject, which is usually not a quality?

¹²⁹ With regard to the categorial status of specific differences, Porphyry holds that a specific difference is neither substance without qualification nor quality without qualification. Rather, it is an essential quality (ποιότης οὐσιώδης), because it is complete (συμπληρωτική) of essence (οὐσία) (Porphyry, in *Cat.* 95.17–96.2). Similarly, Simplicius maintains that a specific difference occupies an intermediate position between substance and quality (Simplicius, in *Cat.* 99.4–6).

Morrison 1993, however, criticizes this view as a ‘fudge’, arguing that ‘Aristotle has set up his categories so that every being falls into one of them or another. The categories are discrete, not stages

Consider the specific difference footed. If its account is ‘the state of having feet’, it is difficult to see how this account can be predicated of man. Further, if its name is ‘footedness’, rather than ‘footed’, it is equally difficult to understand how the name ‘footedness’ can be predicated of man.

This difficulty was already noted by Dexippus in his *Commentary on Aristotle’s Categories*.¹³⁰ He proposes the following solution:

For they, separating the footedness by thought (ἐπινοία), are not prepared to accept that a specific difference is that which is taken along with the subject. But it is one thing to separate something by the thought (τῇ ἐπινοίᾳ), and another to grasp it as being together with the subject. Therefore, when Aristotle, in connection with the definitional account, says here that to be predicated synonymously holds of the specific differences, he has said about the specific differences taken together with the matter, and we understand him in that sense.¹³¹

on a continuum.’ (English original by Morrison, for which the French translation by Brunschwig in Morrison 1993, 152 is ‘Aristote a édifié ses catégories de façon que tout être tombe dans l’une ou l’autre d’entre elles. Les catégories sont discrètes, elles ne sont pas des étapes dans un continuum.’). Instead, Morrison (ibid., 149–50) argues that a specific difference may belong to any ontological category, depending on its ‘intrinsic logical features’ (English original by Morrison, for which the French translation by Brunschwig is ‘caractéristiques logiques intrinsèques’). In support of this view, he appeals to *Topics* VI 6, 145^a13–18, where Aristotle states that the specific differences that qualify a relative are themselves relatives. Thus, since knowledge is a relative, the specific differences that qualify it—theoretical, practical, and productive—must likewise be relatives. This argument, however, is not decisive. The fact that some specific differences are relatives does not preclude their also being qualities. Aristotle himself observes in *Categories* 8, 11^a37–8 that there is nothing absurd if the same thing is both a quality and a relative. Consequently, the passage in *Topics* VI 6 does not establish that specific differences cease to be qualities merely because they also belong to the category of relatives.

¹³⁰ See Dexippus, in *Cat.* 49.26–50.9.

¹³¹ Dexippus, in *Cat.* 50.12–18, trans. J. Dillon 1990, slightly modified: ἐπινοία γὰρ χωρίζοντες τὴν πεζότητα οὐ βούλονται τὸ μετὰ τοῦ ὑποκειμένου συνειλημμένον εἶναι διαφοράν. ἄλλο δέ ἐστι χωρίσαι

According to Dexippus, the difficulty arises only when the specific difference is considered in abstraction, that is, when it is separated ‘by the thought’ (τῇ ἐπινοίᾳ) from the genus of which it is a determination. Once it is considered together with its proper genus, its account can be predicated of its subject. This view is followed by Ackrill (1963) and Oehler (2006).¹³²

The motivation for this view appears to lie in Aristotle’s claim that every specific difference ‘brings’ (ἐπιφέρει) with itself its proper genus (τὸ οἰκεῖον γένος). For example, footed always brings with itself its proper genus, animal, and odd always brings with itself its proper genus, number.¹³³ This claim, however, does not license identifying a specific difference with the compound formed by that difference and its proper genus. Rather, it implies only that a specific difference is a qualification that can belong exclusively to its proper genus. For example, footed qualifies only animal, and odd qualifies only number. It does not follow that footed is equivalent to footed animal, or that odd is equivalent to odd number. Consequently, the view proposed by Dexippus and adopted by Ackrill and Oehler cannot be sustained.¹³⁴

τι τῇ ἐπινοίᾳ, ἄλλο ὥς συνυπάρχον τῷ ὑποκειμένῳ συλλαβεῖν. ἐπεὶ οὖν καὶ ὁ Ἀριστοτέλης περὶ τοῦ ὀριστικοῦ λόγου λέγει ἐνταῦθα καὶ τὸ συνωνύμως κατηγορεῖσθαι ἐπὶ τῶν διαφορῶν εἶρηκε τῶν συνευλημμένων μετὰ τῆς ὕλης, καὶ ἡμεῖς οὕτως ἐκδεχόμεθα·

¹³² See Ackrill 1963, 86: ‘To ascribe the differentia “two-footed” to man is as good as to say that he is a two-footed land animal. Thus the differentia is, in a way, the *whole* of the “what is it” of a secondary substance.’ (emphasis in the original). See also Oehler 2006, 265.

¹³³ *Top.* VI 6, 144^b16–8: ἐπιφέρει γὰρ ἐκάστη τῶν διαφορῶν τὸ οἰκεῖον γένος, καθάπερ τὸ πεζὸν καὶ τὸ δίπουν τὸ ζῷον συνεπιφέρει.

¹³⁴ Mann 2000, 194–5, 202–4 suggests that the difficulty concerning specific differences shows that the ‘name-and-definition-test’, precisely because it is linguistic or logical in character, cannot perfectly mirror the underlying ontological relations. With respect to specific differences, he proposes that abstract nouns such as ‘footedness’ should not be regarded as referring to specific differences. Moreover, he

A different solution is proposed by Iamblichus. According to him, the account of a specific difference should be the account of it not *qua* quality, but *qua* what is complete of the essence. As Simplicius reports in his *Commentary on Aristotle's Categories*:

“...The reason for the confusion is that sometimes they take the specific differences as completing the essence and as parts of the species, but when they construct the defining account, they no longer take the specific differences as complete, but regard them as a quality, and the account of the states does not apply to all the subjects. If they took the specific differences as complete in both these cases, as would be proper, both the name and the defining account would certainly be predicated of the subjects.” This, then, Iamblichus says by way of solution to the problem.¹³⁵

Simplicius does not report further how, according to Iamblichus, a specific difference should be accounted for *qua* what is complete of the essence. Nevertheless, Iamblichus's proposal highlights two important points. First, an entity capable of functioning as a specific difference may be considered either simply as a quality or as

maintains that even if such abstract nouns are unavoidable, we should not acknowledge their ontological import. See *ibid.*, 204. At *ibid.*, 195, Mann suggests that ‘it seems most natural to assimilate differentiae to *ousiai* after all.’

¹³⁵ Simplicius, in *Cat.* 101.4–12, trans. De Haas/Fleet 2001, modified: “... αἴτιον δὲ τῆς ταραχῆς, ὅτι ποτὲ μὲν ὡς συμπληρωτικὰς τῆς οὐσίας λαμβάνουσι τὰς διαφορὰς καὶ ὡς μέρη τοῦ εἶδους, ὅταν δὲ τὸν λόγον τὸν ὀριστικὸν ποιῶνται, οὐχ ὡς συμπληρωτικὰς ἔτι τὰς διαφορὰς λαμβάνουσιν, ἀλλ’ ὡς κατὰ ποιότητα θεωρουμένας, καὶ τὸν λόγον οὐ πᾶσιν ἐφαρμόζειν τοῖς ὑποκειμένοις τὸν τῶν ἔξεων. εἰ δὲ ὥσπερ ἦν προσῆκον ἐλάμβανον ἐπ’ ἀμφοτέρων τούτων τὰς διαφορὰς ὡς συμπληρωτικὰς, πάντως ἂν καὶ τὸ ὄνομα καὶ ὁ ὀριστικὸς λόγος κατηγορεῖτο κατὰ τῶν ὑποκειμένων”. ταῦτα μὲν οὖν ὁ Ἰάμβλῖχος τὴν ἀπορίαν διαλύων φησίν.

that which completes the essence. Second, only when it is considered as complete of essence will its name and account be predicated of its subject.

Building on Iamblichus's insight, I propose that an entity capable of functioning as a specific difference admits two distinct modes of consideration: it may be regarded either as a full-fledged ontological entity or as a specific difference of something. Corresponding to these two modes of consideration, it possesses two names and two accounts. When considered as a full-fledged ontological entity, its name is a substantive, such as 'footedness'. By contrast, when considered as a specific difference of something, its name is an adjective, such as 'footed'.¹³⁶ The same distinction applies to the corresponding accounts. The account associated with the substantive 'footedness' accounts for it as a full-fledged ontological entity and must mention its own genus. For example, the account given for the name 'footedness' will be something like 'the state of having feet'. By contrast, the account associated with the adjective 'footed' accounts for it as a specific difference of something. Such an account need only clarify what the adjective 'footed' means, without mentioning the genus of footed, namely, quality. For instance, the account given for the name 'footed' will be something like 'having feet'.¹³⁷ This is precisely how Porphyry defines 'footed' in his *Commentary on Aristotle's Categories* 94.34–6: 'But as it is, one can say that man is footed and can

¹³⁶ It should be noted that Aristotle almost always refers to specific differences by adjectives rather than substantives. One passage where Aristotle uses substantives to denote specific differences is *Topics* IV 5, 126^b16: 'For neither excess nor intensity is genus, but specific difference.' (translation is mine: οὔτε γὰρ ἡ ὑπερβολὴ οὔθ' ἡ σφοδρότης γένος, ἀλλὰ διαφορά).

¹³⁷ Porphyry, in *Cat.* 94.34–6, trans. Strange 1992, slightly modified: νῦν δὲ τὸν ἄνθρωπον εἶποις ἄν πεζόν, εἵποις δ' ἄν καὶ λόγον τοῦ πεζοῦ, ὅπερ ἐστὶν ἐπὶ γῆς διὰ σκελῶν βαδιστικόν.

also state the account of ‘footed’ (*pezon*) of man, that is, “capable of walking over the earth by means of legs”.’

The following passage in *Topics* VI 12, 149^a29–37 indicates that Aristotle defines a specific difference in terms of an adjectival account, without mentioning its own genus:

If he has given the definition (*horos*) of the specific difference, examine whether the given definition (*horismos*) is also common to something else. For example, when he says that the odd number is a number that has a middle, we must determine in which way it has a middle. For ‘number’ is common to both phrases, while the account has been substituted for ‘odd’; and both a line and a solid have a middle, although they are not odd. So that this would not be a definition of odd. But if ‘having a middle’ (*to meson echon*) is said in many ways, we must determine in what way it has a middle. So that there will be a criticism or a deduction showing that he has not defined.¹³⁸

In this passage, Aristotle derives the account of the specific difference ‘odd’ by subtracting ‘number’ from the definition of ‘odd number’.¹³⁹ Admittedly, the resulting account, ‘having a middle’, is not sufficiently determinate and must be further specified

¹³⁸ *Top.* VI 12, 149^a29–37, trans. A. Schiaparelli 2023, slightly modified: Εἰ δὲ τῆς διαφορᾶς τὸν ὅρον ἀποδέδωκε, σκοπεῖν εἰ καὶ ἄλλου τινὸς κοινὸς ὁ ἀποδοθεὶς ὀρισμός. οἷον ὅταν τὸν περιττὸν ἀριθμὸν ἀριθμὸν μέσον ἔχοντα εἴπῃ, ἐπιδιοριστέον τὸ πῶς μέσον ἔχοντα. ὁ μὲν γὰρ ἀριθμὸς κοινὸς ἐν ἀμφοτέροις τοῖς λόγοις ὑπάρχει, τοῦ δὲ περιττοῦ μετείληπται ὁ λόγος· ἔχει δὲ καὶ γραμμὴ καὶ σῶμα μέσον, οὐ περιττὰ ὄντα. ὥστ’ οὐκ ἂν εἴη ὀρισμός οὗτος τοῦ περιττοῦ. εἰ δὲ πολλαχῶς λέγεται τὸ μέσον ἔχον, διοριστέον τὸ πῶς μέσον ἔχον. ὥστ’ ἢ ἐπιτίμησις ἔσται, ἢ συλλογισμὸς ὅτι οὐχ ὥρισταί.

¹³⁹ With respect to the idea of deriving the account of a specific difference by subtraction, I have been influenced by Sebastiano Belleggia’s talk ‘Definitions without Essences? The Residual Accounts of Aristotle’s Paronyms’ held in the workshop ‘Definitions between Plato and Aristotle’ (November 17–18, 2023, Fribourg).

as ‘having a middle in a certain way’. Nevertheless, the passage clearly shows that, when an entity is considered as a specific difference of something, its account need not mention its own genus. Rather, it is obtained simply by replacing the adjectival name with its corresponding adjectival account.

It should be noted that my claim that an entity capable of functioning as a specific difference has two accounts does not imply that one and the same entity has two different *definitions*.¹⁴⁰ Rather, I propose that only the account given for an entity considered as a full-fledged ontological entity counts as its definition properly speaking. By contrast, the account given when the same entity is considered as a specific difference of something is merely a ‘partial account’ of that entity.

Now, we see that both the name and the account of an entity capable of functioning as a specific difference are twofold. When considered as a full-fledged ontological entity, it is designated by a substantive, and its account must specify its own non-substantial genus. Such an account cannot be predicated of its subject. By contrast, when the same entity is considered as a specific difference of something, it is designated by an adjective, and its account does not mention its genus. Such an account, being only an adjectival phrase, can be predicated of its subject.

Why, then, does the account of an entity *qua* a specific difference of something not need to mention its own genus? I suggest that the answer lies in Aristotle’s theory of predication categories. A specific difference is predicated, according to Aristotle, not in the category of ‘what it is’ (*ti esti*), but in that of ‘of what sort it is’ (*poion ti esti*) with respect to its subject. Consequently, when it contributes to the constitution of the

¹⁴⁰ In *Topics* VI 4, 141^a35, Aristotle explicitly states that there is only one essence or ‘what it essentially is’ for one thing: ἐκάστῳ γὰρ τῶν ὄντων ἓν ἐστὶ τὸ εἶναι ὅπερ ἐστίν.

essence of a species, it does not introduce its own genus into the definition of that species. The following section develops this claim in detail.

2.3. Specific Difference as Predicated in the Category of ‘of What Sort It Is’

2.3.1. *The Predicational Categories in Topics I 9*

In claiming that a specific difference is predicated in the category of ‘of what sort it is’ (*poion ti esti*), I use the term ‘category’ not to refer to one of the ten ontological categories in *Categories* 4, but rather to one of the predicational categories. By ‘predicational category’, I mean the manner in which a predicate is predicated of its subject. One passage that, I suggest, provides a complete list of the predicational categories is *Topics* I 9.¹⁴¹

In *Topics* I 9, 103^b21–3, Aristotle introduces the following list of categories, beginning with ‘what it is’ (*ti esti*):

Now then, after that, we must distinguish the kinds of the categories (*ta genē tōn katēgoriōn*), in which the mentioned four items (*hai rhētheisai tettares*) inhere (*huparchousin*). These are ten in number: what it is (*ti esti*), how much (*poson*), of what

¹⁴¹ For the distinction between ontological or metaphysical categories and predicational categories, see already Ebert 1985, 137–8, M. Frede 1987, 38–9, 47–8, Morrison 1993, 148. By contrast, Malink 2007 holds that both the categories in *Categories* 4 and those in *Topics* I 9 are categories of predicates or predications. More recently, Granieri 2016, 14 holds that while the categories in *Categories* 4 are categories of predicates, those in *Topics* I 9 are categories of predications.

sort (*poion*), relative (*pros ti*), where (*pou*), when (*pote*), being-in-a-position (*keisthai*), having (*echein*), doing (*poiein*), being-affected (*paschein*).¹⁴²

A comparison with the list of categories in *Categories* 4 shows that the two lists differ only in their first item. Whereas the list in *Categories* 4 begins with substance (*ousia*), the list in *Topics* I 9 begins with ‘what it is’ (*ti esti*). Because of this close resemblance, scholars disagree as to whether the two lists are fundamentally the same¹⁴³ or represent distinct classificatory schemes.¹⁴⁴ Because of space constraints, I simply adopt the latter view without arguing for this stance in detail. I also suppose that the list beginning with *ousia* classifies kinds of beings, whereas the list beginning with *ti esti* classifies the different ways in which predicates are predicated of their subjects. Accordingly, the former consists of ontological categories, whereas the latter consists of predicational categories.

2.3.2. *The Predicational Category of Specific Difference: ‘of What Sort It Is’*

Suppose that the list of categories in *Topics* I 9 is a list of predicational categories. Under which predicational category, then, should a specific difference be classified?

¹⁴² *Top.* I 9, 103^b20–3, trans. R. Smith 1997, modified: Μετὰ τοίνυν ταῦτα δεῖ διορίσασθαι τὰ γένη τῶν κατηγοριῶν, ἐν οἷς ὑπάρχουσιν αἱ ῥηθεῖσαι τέτταρες. ἔστι δὲ ταῦτα τὸν ἀριθμὸν δέκα, τί ἐστι, ποσόν, ποιόν, πρὸς τι, ποῦ, ποτέ, κείσθαι, ἔχειν, ποιεῖν, πάσχειν.

¹⁴³ For this view, see Alexander of Aphrodisias, in *Top.* 65.14–19; Arpe 1938, 11–14; Fait 2023, Rapp (forthcoming).

¹⁴⁴ For this view, see Ebert 1985, 137–8; M. Frede 1987, 37–9; Morrison 1993, 148; Malink 2007, 273; Granieri 2016, 4–5.

According to *Topics* I 4, 101^b18–19, a specific difference is to be treated together with the predicable genus, since it is ‘genus-like’ (*genikē*) (cf. *Top.* I 4, 101^b18–19). Moreover, in *Topics* I 9, 103^b35–9, Aristotle explicitly states that the genus as a predicable is predicated of its subject in the category of ‘what it is’:

With each of these, both when the thing is said about itself and when the genus is said about this thing, one signifies what it is. But when [the predicate] is said about something other [than itself], then one does not signify what it is, but how much [it is] or of what sort [it is] or one of the other categories.¹⁴⁵

This passage generalizes the condition under which a predicate is predicated in the category of ‘what it is’, on the basis of the examples given earlier in *Topics* I 9, 103^b27–35. In those examples, the predicate is either the subject itself (man, white, one-cubit-long length) or its genus (animal, color). By ‘a thing is predicated of itself’, Aristotle does not mean tautological predications such as ‘man is man’. Rather, what he has in mind should be *definiens*-predications like ‘man is two-footed rational animal’.¹⁴⁶ By contrast, whenever a predicate is said of ‘something other than itself’, then the predicate is neither the *definiens* nor the genus of the subject. In such a case, one does not signify ‘what it is’, but one of the other predicational categories. For example, in the predication ‘man is white’, the predicate ‘white’ is predicated of its subject in the category of ‘of what sort it is’ (*poion ti esti*). It follows, therefore, that genus–

¹⁴⁵ *Top* I 9, 103^b35–39, trans. R. Smith 1997, modified: ἕκαστον γὰρ τῶν τοιούτων, εἴαν τε αὐτὸ περὶ αὐτοῦ λέγεται εἴαν τε τὸ γένος περὶ τούτου, τί ἐστι σημαίνει· ὅταν δὲ περὶ ἑτέρου, οὐ τί ἐστι σημαίνει ἀλλὰ ποσὸν ἢ ποιὸν ἢ τινα τῶν ἄλλων κατηγοριῶν.

¹⁴⁶ For this view, see Alexander of Aphrodisias, in *Top.* 67.8–11; Malink 2007, 280–1.

predications and *definiens*–predications belong to the predication category of ‘what it is’, whereas predications whose predicate is a peculiar property or an accident belong to one of the other nine predication categories.

Does the fact that a specific difference is genus–like imply that it is also predicated of its subject in the category of ‘what it is’? In *Topics* VI 6, Aristotle states explicitly that a specific difference does not signify ‘what it is’, but rather ‘of what sort it is’ (*poion ti*):

Therefore, if the state is a genus of virtue, it is clear that the good is not a genus, but rather a specific difference. Furthermore, the state signifies what virtue is, but the good does not signify “what it is”, but rather “of what sort it is” (*ou ti esti alla poion*). In fact, the specific difference seems to signify “of what sort it is” (*poion ti*).¹⁴⁷

Accordingly, although a specific difference is genus–like, it is not predicated in the category of ‘what it is’, but rather ‘of what sort it is’. However, in *Topics* VII 3 and 5, Aristotle explicitly states that both genera and specific differences are predicated in the what–it–is (*en tō[i] ti esti katēgoreisthai*) of their subjects.¹⁴⁸ Does Aristotle thereby commit himself to a contradiction? In the following, I shall deal with this puzzle in more detail.

¹⁴⁷ *Top.* VI 6, 144^a15–19, trans. A. Schiapparelli 2023, slightly modified: εἰ οὖν ἡ ἕξις τῆς ἀρετῆς γένος, δῆλον ὅτι τὰγαθὸν οὐ γένος ἀλλὰ μᾶλλον διαφορά. ἔτι ἡ μὲν ἕξις τί ἐστι σημαίνει ἡ ἀρετή, τὸ δ’ ἀγαθὸν οὐ τί ἐστὶν ἀλλὰ ποῖον· δοκεῖ δ’ ἡ διαφορά ποιόν τι σημαίνειν.

¹⁴⁸ See *Top.* VII 3, 153^a17–18: κατηγορεῖται δ’ ἐν τῷ τί ἐστι τὰ γένη καὶ αἱ διαφοραί. *Top.* VII 5, 154^a27–8: καὶ ὅτι ἐν τῷ τί ἐστι τὸ γένος καὶ αἱ διαφοραὶ κατηγοροῦνται.

2.3.3. Contradictory Attributions to Specific Difference?

In his *Commentary on Aristotle's Categories* (80.4–5), Porphyry identifies ‘to be predicated ... as of a subject’ (*kath’ hupokeimenou katēgoreisthai*), which amounts to the same as ‘to be SAID OF ... as of a subject’ in Aristotle,¹⁴⁹ with ‘to be predicated in the what–it–is’ (*en tō[i] ti esti katēgoreisthai*) of that subject.¹⁵⁰ Since a specific difference is SAID OF its subject, it follows, according to Porphyry, that it is ‘predicated in the what–it–is’ (*en tō[i] ti esti katēgoreisthai*) of its subject. Yet, in *Isagoge* 11.7–13, Porphyry also states that a specific difference is *not* predicated in the ‘what it is’ (*ouk en tō[i] ti esti katēgoreisthai*) but predicated in the ‘of what sort it is’ (*poion ti esti*) of its subject.¹⁵¹ Thus, Porphyry appears not to recognize that he attributes two apparently contradictory modes of predication to the specific difference.

Eustratius, by contrast, attempts to avoid this difficulty by arguing that a specific difference is ‘said in the what–it–is’ (*en tō[i] ti esti legesthai*) of its subject only when it is taken together with its proper genus and considered as an ‘unnamed’ genus. As Eustratius puts it, ‘each specific difference, when taken together with the genus, is an

¹⁴⁹ For Porphyry, both *kath’ hupokeimenou katēgoreisthai*... and *kath’ hupokeimenou legesthai*... express the relation ‘to be SAID OF ... as of a subject’. By contrast, Aristotle only uses the latter to express that relation.

¹⁵⁰ Porphyry, *in Cat.* 80.4–5, trans. S. K. Strange 1992, slightly modified: Καθ’ ὑποκειμένου φησὶν ἐκεῖνο κατηγορεῖσθαι τινος, ὅταν ἐν τῷ τί ἐστι κατηγορῆται ἐκεῖνο <ὁ> ἀποδίδεται.

¹⁵¹ Porphyry, *Isagoge* 11.7–13, trans. Barnes 2003, modified: Ὅρίζονται δὲ αὐτὴν καὶ οὕτως· διαφορὰ ἐστὶ τὸ κατὰ πλείονων καὶ διαφερόντων τῷ εἶδει ἐν τῷ ποῖόν τί ἐστι κατηγορούμενον· τὸ γὰρ λογικὸν καὶ τὸ θνητὸν τοῦ ἀνθρώπου κατηγορούμενον ἐν τῷ ποῖόν τί ἐστιν ὁ ἄνθρωπος λέγεται ἀλλ’ οὐκ ἐν τῷ τί ἐστιν. τί μὲν γάρ ἐστιν ὁ ἄνθρωπος ἐρωτωμένων ἡμῶν οἰκεῖον εἰπεῖν ζῶον, ποῖον δὲ ζῶον πυνθανομένων λογικὸν καὶ θνητὸν οἰκείως ἀποδώσομεν.

unnamed genus and is said in the what–it–is.’¹⁵² However, when Aristotle says that a specific difference is SAID OF its subject or predicated in the what–it–is of its subject, he is speaking of the specific difference itself, not of the combination of the difference with its proper genus. Eustratius’s interpretation therefore suffers from the same defect as that of Dexippus, Ackrill, and Oehler, as discussed above.

The underlying problem is that Eustratius fails to distinguish between ‘to be predicated in the what–it–is’ and ‘to signify “what it is”’, which can also be expressed as ‘to be predicated in the category of ‘what it is’’. A specific difference is in fact predicated in the what–it–is, without signifying ‘what it is’ or being predicated in the category of ‘what it is’. Failing to recognize this, Eustratius uses *en tō[i] ti esti katēgoreisthai* indiscriminately for both. I propose that this is also what leads Porphyry to maintain that a specific difference is both *en tō[i] ti esti katēgoreisthai* and *ouk en tō[i] ti esti katēgoreisthai*.

By contrast, I draw a strict distinction between ‘to be predicated in the what–it–is’ and ‘to be predicated in the category of “what it is”’. I argue that Aristotle never uses *en tōi ti esti katēgoreisthai* to express the latter relation. Rather, his expression for this relation is *ti esti sēmainein*, as is clear from *Topics* I 9.

Among modern commentators, Morrison (1993) attempts to distinguish between *en tō[i] ti esti katēgoreisthai* (to be predicated in the what–it–is) and *ti esti sēmainein* (to signify ‘what it is’/to be predicated in the category of ‘what it is’). He argues that the former denotes ‘to be predicated in the category of essence’ in a looser sense,

¹⁵² Eustratius, *in An. Post.* 208.17–19, translation is mine: καὶ τῶν διαφορῶν γὰρ ἐκάστη τῷ γένει συνελημμένη ἀνώνυμόν τε γένος ἐστὶ καὶ ἐν τῷ τί ἐστι λέγεται.

whereas the latter expresses ‘to be predicated in the category of essence’ in a stricter sense:

Concerning the category of predicate of the differentia, I shall argue that Aristotle is himself somewhat inconsistent. His basic view is that the differentia (of any species, in any metaphysical category) is predicated of the species in the category of essence. But he recognizes a stricter sense of ‘essential predication’ according to which only the genus is predicated in the category of predication ‘essence’, and in accord with that sense, the differentia is instead predicated of the species in the category of ‘quality’.¹⁵³

This proposal has the merit that it recognizes that *en tō[i] ti esti katēgoreisthai* and *ti esti sēmainein* do not express the same relation. Nevertheless, it is misleading in that it treats the *ti esti* in both phrases as a predication category, namely, the so-called ‘category of essence’. I argue instead that whereas the *ti esti* in *ti esti sēmainein* refers to a predication category, the *ti esti* in *en tō[i] ti esti katēgoreisthai* refers to the essence as an ontological entity.

Accordingly, the claim that *X* is predicated in the what–it–is of *Y* only implies only that *X* *partially constitutes* the essence of *Y* or *wholly reveals* the essence of *Y*, where *X* can be either a genus, a specific difference, or the *definiens* of *Y*. If *X* is a genus or

¹⁵³ English original by Morrison, for which the French translation by Brunschwig in Morrison 1993, 150 is: ‘Quant à la catégorie de prédication de la différence, je soutiendrai qu’Aristote a lui-même une position quelque peu incohérente. Fondamentalement, il pense que la différence (de n’importe quelle espèce, dans n’importe quelle catégorie métaphysique) se prédique de l’espèce dans la catégorie de l’essence. Mais il admet aussi un sens plus étroit de la « prédication essentielle », selon lequel seul le genre se prédique dans la catégorie de prédication de l’« essence » ; en fonction de ce sens, la différence se prédique alors de l’espèce dans la catégorie de la « qualité ».’

the *definiens* of *Y*, it is predicated in the category of ‘what it is’. By contrast, when *X* is a specific difference of *Y*, it is predicated in the category of ‘of what sort it is’.

The fact that genera and specific differences belong to different predicational categories thus reflects the different ways in which they constitute the essence of their subjects. A genus signifies what the subject is, with its own genus and its specific difference(s) being applied to its subject. A specific difference, by contrast, signifies of what sort the subject is and does not introduce its own genus to the subject.¹⁵⁴ This explains why, in accounting for a quality *qua* the specific difference of something, there is no need to mention the genus ‘quality’ or a sub-genus of it.

2.4. Conclusion

In this chapter, I have shown that the philosophical motivation of the notion of logical essence is the articulation of essence through essential predication. First, I have shown that the parts of logical essence, namely, genus and specific differences, are essential predicates of their subjects, both on an ontological level and on a logical level. On an ontological level, they are SAID OF their subjects, with both their names and accounts predicated of them. On a logical level, they are predicated in the what–it–is of their subjects. Moreover, I have argued that the ontological predication ‘to be SAID OF ... as of a subject’ underlies the logical predication ‘to be predicated in the what–it–is’. After that, I have addressed the puzzle of how a specific difference can be SAID OF its

¹⁵⁴ In his *Commentary on Aristotle’s Categories* (98.8–9), Simplicius states that specific differences ‘do not contribute to the being (*to einai*) but to the being such (*to toionde einai*).’ Trans. De Haas/Fleet 2001, slightly modified: οὐ γὰρ εἰς τὸ εἶναι, ἀλλ’ εἰς τὸ τοιόνδε εἶναι συμβάλλονται.

subject. My proposal is that an entity capable of functioning as a specific difference may be considered either as a full-fledged ontological entity or as a specific difference of something. In the latter case, its name is adjectival, and its account need not mention its own genus. Consequently, both its name and its account are predicated of its subject. Finally, I have argued that because a specific difference is predicated of its subject in the category of 'of what sort it is', it does not contribute its own genus when constituting the essence of that subject. This explains why the account of a quality *qua* a specific difference of something need not mention the genus 'quality' or a sub-genus of it.

3. The Three Steps to Grasp the Logical Essence of a Species

In this chapter, I argue that grasping the logical essence of a species involves three successive steps: induction, selection of the essential predicates, and division. First, by means of induction, we collect all the universal attributes shared by all the particular instances of that species *qua* instances of it. Next, from among the universal attributes, we select those that are predicated in the what-it-is of the thing. Finally, by means of division, we arrange the selected essential predicates into a well-structured and complete logical *definiens*, thereby organizing the parts of the logical essence into a unified whole.

Having examined these three steps, I argue, against Bronstein (2016),¹⁵⁵ that demonstrations are not required for attaining *nous* of a logical *definiens*. Rather, with respect to a species, I maintain that we attain *nous* of a logical *definiens* once we have arrived, through division, at a well-structured and complete *definiens*. With respect to a primary genus, by contrast, I argue that *nous* of a logical *definiens* is attained once induction has yielded a universal attribute shared by all and only the instances of that genus *qua* instances of it.

3.1. Step (1): Induction

¹⁵⁵ See Bronstein 2016, 225–47.

According to my three-step account of grasping the logical essence of a species, the first step is to collect the universal attributes through induction.

To clarify how induction functions, I shall concentrate on *Posterior Analytics* II 19, 100^a3–^b5. Induction is commonly understood as a method for arriving at universals and universal propositions. More recently, however, several scholars have argued that induction as it is described in *Posterior Analytics* II 19 is not a method, but rather a ‘quasi-automatic’ or ‘natural’ process.¹⁵⁶ I agree with this latter interpretation that *Posterior Analytics* II 19 is not a manual explaining how induction should be carried out, but a factual account of the progression of our epistemic state. Nevertheless, this does not exclude the possibility that induction functions as a method within this progression, even though Aristotle does not explicitly explain how it is to be applied.¹⁵⁷ Moreover, Aristotle’s claim in *Posterior Analytics* II 19, 100^a13–14 that the (human) soul is such that it is capable of undergoing such a progression¹⁵⁸ does not imply that the (human) soul is entirely passive throughout this process. To use a simple analogy: although a human body is naturally capable of undergoing the process of becoming healthier, one may nevertheless actively contribute to this process by adopting appropriate methods. Likewise, although Aristotle presents the development of our cognitive state as a natural progression, this does not preclude the active application of methods.

In what follows, I argue that induction proper consists in the transition from a plurality of propositions concerning particular cases to a universal proposition. This

¹⁵⁶ See Helmig 2012, 139.

¹⁵⁷ In *Posterior Analytics* II 13, 97^b6–26, Aristotle offers a guide for the application of induction as a method.

¹⁵⁸ See *An. post.* II 19, 100^a13–14: ἡ δὲ ψυχὴ ὑπάρχει τοιαύτη οὕσα οἷα δύνασθαι πάσχειν τοῦτο.

transition is neither entirely ‘automatic’ nor passive but requires the active exercise of reason (*logos*).

In *Posterior Analytics* II 19, 100^a3–^b5, Aristotle shows in detail how the development of our cognitive state proceeds:

[a] From perception there comes memory, as we call it, and from memory (when it occurs many times to the same item) experience; for memories which are many in number form a single experience. And from experience, or from the whole universal (*ek pantos tou katholou*)¹⁵⁹ which has come to rest in the soul (the one beyond the many, that is, whatever is one and the same in all these items), there comes the principle (*archē*) of craft (*technēs*) and knowledge (*epistēmēs*)—of craft if it is concerned with generation (*genesin*), of knowledge if it is concerned with the being (*to on*). [b] Thus the states in question neither inhere in us in a determinate form nor come about from perception—as in a battle, when a rout has occurred, first one man makes a stand, then another does, and then another, until a position of strength is reached. And the soul is such as to be capable of undergoing this. [c] Let us say again what we have just said but not said clearly. When one of the undifferentiated items (*tōn adiaphorōn*) makes a stand, there is a first universal (*prōton katholou*) in the soul; for although you perceive particulars, perception is of universals, —e.g. of man, not of Callias the man. Next, a stand is made among these items, until something partless and universal (*ta amerē kai ta katholou*) makes a stand. E.g. such-and-such an animal makes a stand, until animal does; and with animal a stand is made in the same way. [d] Thus, it is clear that we must get to know (*gnōrizein*) the primaries (*ta prōta*) by induction; for this is the way in which the perception instils (*empoiei*) the universal.¹⁶⁰

¹⁵⁹ For this rendering of *ek pantos tou katholou*, see Helmig 2012, 133 with note 206.

¹⁶⁰ *An. post.* II 19, 100^a3–^b5, trans. Barnes 1993, modified: Ἐκ μὲν οὖν αἰσθήσεως γίνεται μνήμη, ὥσπερ λέγομεν, ἐκ δὲ μνήμης πολλάκις τοῦ αὐτοῦ γινομένης ἐμπειρία· αἱ γὰρ πολλαὶ μνήμαι τῷ ἀριθμῷ ἐμπειρία μία ἐστίν. ἐκ δ’ ἐμπειρίας ἢ ἐκ παντὸς ἡρεμήσαντος τοῦ καθόλου ἐν τῇ ψυχῇ, τοῦ ἐνὸς παρὰ

This passage naturally falls into four sections: [a]–[d], whose content may be summarized as follows:

[a]: the progression from perception to the principle of craft or scientific knowledge;

[b]: a summary of [a], consisting of the simile of rout and the claim that the (human) soul is capable of undergoing such a progression;

[c]: a further clarification of [a], stating that we proceed from undifferentiated items through the first universal to increasingly general universals.

[d]: a summary of [a]–[c], emphasizing the role of induction in the two progressions just described.

What is the difference between the two progressions described respectively in [a] and [c]? I suggest that, in [a], Aristotle is primarily concerned with the successive stages in the development of our cognitive state, without yet specifying precisely what the ‘whole universal’ is. By contrast, in [c], he makes it clear that we first arrive at a ‘first universal’ and only subsequently proceed to more general universals. Thus, the ‘whole universal’, as attained directly from experience, should be a ‘first universal’, that is, an

τὰ πολλά, ὃ ἂν ἐν ἅπασιν ἐν ἐνῇ ἐκείνοις τὸ αὐτό, τέχνης ἀρχὴ καὶ ἐπιστήμης, ἐὰν μὲν περὶ γένεσιν, τέχνης, ἐὰν δὲ περὶ τὸ ὄν, ἐπιστήμης. οὐτε δὴ ἐνυπάρχουσιν ἀφορισμένοι αἱ ἕξεις, οὐτ’ ἀπ’ ἄλλων ἕξεων γίνονται γνωστικωτέρων, ἀλλ’ ἀπὸ αἰθήσεως, οἷον ἐν μάχῃ τροπῆς γενομένης ἐνὸς στάντος ἕτερος ἔστι, εἴθ’ ἕτερος, ἕως ἐπὶ ἀρχὴν ἦλθεν. ἡ δὲ ψυχὴ ὑπάρχει τοιαύτη οὕσα οἷα δύνασθαι πάσχειν τοῦτο. ὃ δ’ ἐλέχθη μὲν πάλαι, οὐ σαφῶς δὲ ἐλέχθη, πάλιν εἴπωμεν. στάντος γὰρ τῶν ἀδιαφόρων ἐνός, πρῶτον μὲν ἐν τῇ ψυχῇ καθόλου (καὶ γὰρ αἰσθάνεται μὲν τὸ καθ’ ἕκαστον, ἡ δ’ αἴσθησις τοῦ καθόλου ἐστίν, οἷον ἀνθρώπου, ἀλλ’ οὐ Καλλίου ἀνθρώπου)· πάλιν ἐν τούτοις ἴσταται, ἕως ἂν τὰ ἀμερῇ στῇ καὶ τὰ καθόλου, οἷον τοιονδὶ ζῷον, ἕως ζῷον, καὶ ἐν τούτῳ ὡσαύτως. δῆλον δὴ ὅτι ἡμῖν τὰ πρῶτα ἐπαγωγῇ γνωρίζειν ἀναγκαῖον· καὶ γὰρ ἡ αἴσθησις οὕτω τὸ καθόλου ἐμποιεῖ.

infima species, not a higher genus like ‘animal’. In what follows, I shall concentrate on the progression described in [a] together with the summary of the whole passage in [d].

In [a], Aristotle distinguishes five successive stages of the development of our cognitive state. These stages are: perception, memory, experience, the state in which we possess the ‘whole universal’, and finally the principle of craft and scientific knowledge, which later turns out to be *nous*. After a summary of [a] in [b], and a further clarification in [c], Aristotle summarizes in [d] that ‘we must get to know (*gnōrizein*) the primaries (*ta prōta*) by induction; for this is the way in which the perception instils (*empoiei*) the universal.’ Does this imply that induction encompasses the entire progression from perception to *nous* of principles?

I suggest that the text need not be understood in this way. Aristotle’s claim that ‘perception instils universals through induction’ implies only that the formation of the universal, which begins with perception, involves induction. According to *Topics* I 12, 105^a13–14, ‘Induction is the procedure from the particulars to the universal.’ (ἐπαγωγὴ δὲ ἡ ἀπὸ τῶν καθ’ ἕκαστα ἐπὶ τὸ καθόλου ἔφοδος). This, however, does not require that induction begins with perception, although induction presupposes perception¹⁶¹ and memory. Rather, I propose that induction proper should be understood as the transition from a plurality of *propositions* about particular cases to a universal *proposition* concerning a kind. This transition ends with the stage at which we possess ‘the whole universal’ (*pan to katholou*, *An. post.* II 19, 100^a6–7).¹⁶² Here I follow the interpretation according to which the possession of ‘the whole universal’ is a stage

¹⁶¹ See *Posterior Analytics* I 18, 81^b5–6: [...] ἐπαχθῆναι δὲ μὴ ἔχοντας αἰσθησιν ἀδύνατον. 81^b8–9: [...] οὔτε δι’ ἐπαγωγῆς ἄνευ τῆς αἰσθήσεως.

¹⁶² This interpretation differs from that of Liske 1994, 142, who holds that induction comprises the entire process from perception to the grasp of the first principles.

subsequent to experience, since experience itself remains concerned with particulars.¹⁶³ More specifically, it is the generation of a universal proposition (*hē katholou hupolēpsis*) from a plurality of thoughts (*ennoēmata*) or propositions concerning particulars, as described in *Metaphysics* A 1, 981^a5–9.¹⁶⁴ Accordingly, both experience and the state in which we possess ‘the whole universal’ involve propositions rather than mere concepts. By contrast, perception and memory¹⁶⁵ are, I suggest, neither

¹⁶³ For this interpretation, see Bronstein 2016, 236–7. Following Bronstein 2016, 237, note 37, I take the *ἦ* in *ἐκ δ’ ἐμπειρίας ἦ ἐκ παντὸς ἡρεμήσαντος τοῦ καθόλου ἐν τῇ ψυχῇ* in *Posterior Analytics* II 19, 100^a6–7 to be corrective, rather than expegetic. For the view that *ἦ* is corrective here, see also Thomas Aquinas, *Expositio libri Posteriorum Analyticorum*, Book II Lectio 20, *ad loc.*; Leshner 1973, 59, note 38; McKirahan 1992, 243; Bayer 1997, 124, note 38; Charles 2000, 149–51 (These references are taken from Bronstein *ibid.* 237 note 37), and Gasser–Wingate 2016, 8. For the view that *ἦ* here is expegetic, see Ross 1949, 674; Barnes 1993, 264; LeBlond 1996, 129–30, note 1; LaBarge 2006, 38; Hasper/Yuridin 2014, 122–3, note 7 (These references are taken from Bronstein 2016, 237, note 38).

¹⁶⁴ See *Metaph.* A 1, 981^a5–9: γίγνεται δὲ τέχνη ὅταν ἐκ πολλῶν τῆς ἐμπειρίας ἐννοημάτων μία καθόλου γένηται περὶ τῶν ὁμοίων ὑπόληψις. τὸ μὲν γὰρ ἔχειν ὑπόληψιν ὅτι Καλλία κάμνοντι τηνδὶ τὴν νόσον τοδὶ συνήνεγκε καὶ Σωκράτει καὶ καθ’ ἑκάστον οὕτω πολλοῖς, ἐμπειρίας ἐστίν· This passage describes the generation of a universal proposition from a plurality of thoughts concerning particulars. Other passages likewise suggest that induction yields universal propositions. See *Prior Analytics* II 23, where Aristotle explains how a universal primary proposition is derived from multiple propositions concerning particulars. See also *Posterior Analytics* I 18, 81^b3–4: καὶ τὰ ἐξ ἀφαιρέσεως λεγόμενα ἔσται δι’ ἐπαγωγῆς γνώριμα ποιεῖν, ὅτι ὑπάρχει ἐκάστῳ γένει ἓνα, [...]. Further, in *Topics* I 12, Aristotle illustrates induction by inferring, from the propositions that the skilled pilot is the best pilot and that the skilled charioteer is the best charioteer, the universal proposition that the skilled person is the best in each craft.

¹⁶⁵ As for memory, I argue that it involves a form of combination that is also found in some non-human animals. Such combination resembles that involved in *phantasia*, which consists in the combination of images rather than words. In *De Anima* Γ 3, 428^b2–4, Aristotle discusses a false *phantasma*, such as the appearance that the sun is one-foot long. At this stage, however, there is not yet a proposition such as ‘the sun is one-foot long’. For Aristotle holds that we can simultaneously possess this false *phantasma* and the right proposition that ‘the sun is larger than the inhabited earth’. The combination occurring in *phantasia* therefore consists merely in combining the image of the sun with the image of a one-foot magnitude. Consequently, neither such combinations nor memory and *phantasia*

propositional nor conceptual. What, then, should we say about the state in which we cognize principles?

With respect to the debate over whether the principles grasped by *nous* are concepts or propositions, I argue that they are neither unarticulated nor incompletely articulated concepts, nor are they propositions. Rather, they are concepts fully articulated in the form of *definientia* (the plural of *definiens*).¹⁶⁶ For example, what is grasped is neither the proposition ‘man is two-footed rational animal’ nor the mere concept ‘man’, but the *definiens* of man, such as ‘two-footed rational animal’.¹⁶⁷ The objects of *nous* cannot be unarticulated or incompletely articulated concepts, for possessing such concepts amounts at most to possessing a ‘whole universal’ concerning a kind, not yet to possessing *nous*. Nor can they be propositions. The faculty of *nous*, through whose actualization we attain the state of *nous*, grasps indivisibles, whereas any proposition is divisible into subject and predicate.¹⁶⁸

themselves are propositional. A proposition, by contrast, consists of articulated language, and the use of articulated language presupposes reason (*logos*).

¹⁶⁶ For an overview of this debate, together with the principal interpretations and further references, see Helmig 2012, 129–31; Bronstein 2016, 228.

¹⁶⁷ I concentrate on logical *definiens* here, although there is also *nous* of causal *definiens*, and especially pure causal *definiens*, of something. It is possible that the state in which one cognizes propositions such as ‘man is two-footed rational animal’ or shorter propositions such as ‘man is two-footed’ and ‘man is an animal’ should be identified with ‘undemonstrated scientific knowledge’ (*epistēmē anapodeiktos*). If so, it should be distinguished from *nous*. See Eelink/Hasper (manuscript), 22, who distinguish *nous* and *epistēmē anapodeiktos*, arguing that the former concerns definitions whereas the latter concerns immediate premises such as ‘man is animal’. See *Posterior Analytics* I 33, 88^b36–7, where Aristotle describes *epistēmē anapodeiktos* as an assumption concerning an immediate premise (*hupolēpsis tēs amesou protaseōs*).

¹⁶⁸ See *DA* III 6, 430^a25–7. I distinguish the faculty of *nous*, discussed in *De Anima* III 4–6, from the state of *nous* described in *Posterior Analytics* II 19. It is natural to suppose that the latter is attained through the actualization of the former. Moreover, *De Anima* III provides evidence for distinguishing

As I have argued, induction leads only to the stage at which we possess ‘the whole universal’ and does not by itself lead to *nous*. Importantly, Aristotle’s claim that ‘we must get to know (*gnōrizein*) the primaries (*ta prōta*) by induction (*epagōgē*)’ (*An. post.* II 19, 100^b4) does not imply that induction is sufficient for knowing principles. Rather, it establishes only that induction is a necessary condition for knowing them.

The reason why induction is insufficient is that it yields only universal propositions.¹⁶⁹ Such propositions are not necessarily essential propositions, let alone definitional propositions. In my view, induction is sufficient only for arriving at the logical *definiens* of a primary genus, by attaining an attribute that holds all and only the instances of that genus *qua* instances of it. By contrast, it is not sufficient for arriving at the logical *definiens* of a species. With respect to a species, induction constitutes only the first step towards grasping its logical *definiens*. Through induction, we collect the universal attributes shared by all the instances of that species *qua* instances of it. At this stage, however, we have not yet arrived at the logical *definiens* of that species.¹⁷⁰ To attain *nous* of the (logical) *definiens* of a species, we must still select the essential predicates from among these universal attributes and arrange them by means of division. These two further steps will be discussed in 3.2 and 3.3.

Taking these threads together, we can illustrate the different stages of the development of our cognitive state through the following table:

the faculty of *nous* in a broad sense, which encompasses every kind of thinking, from *nous* in the strict sense, by which first principles are recognized. For *nous* in the broad sense, see, for example, *DA* III 4, 429^a23: λέγω δὲ νοῦν ὃ διανοεῖται καὶ ὑπολαμβάνει ἡ ψυχή.

¹⁶⁹ See already Bayer 1997, 131–2.

¹⁷⁰ Thanks to Christoph Helmig and Béatrice Lienemann for pressing me to make my view concerning induction clearer.

Cognitive State	Characteristics
Perception (<i>aisthēsis</i>)	shared by all animals; non–propositional; does not involve reason (<i>logos</i>).
Memory (<i>mnēmē</i>)	shared by some animals; non–propositional; does not involve reason (<i>logos</i>).
Experience (<i>empeiria</i>)	peculiar to human beings; involves propositions concerning particulars; involves reason (<i>logos</i>).
Possession of ‘the Whole Universal’ (<i>to pan katholou</i>)	peculiar to human beings; involves universal propositions; involves reason (<i>logos</i>).
Principle of Craft or Scientific Knowledge: <i>nous</i>	peculiar to human beings; non–propositional but involves fully articulated concepts or <i>definientia</i> of kinds; involves reason (<i>logos</i>).

These stages also differ with respect to the processes by which they are attained. While the progression from perception to experience is automatic and non–reflective, the progression from experience to the possession of ‘the whole universal’ results by means of the conscious application of induction as a method. At this stage, we arrive at the universal attributes shared by all instances of a species *qua* instances of that species. However, to attain the *nous* of the logical *definiens* of a species, we still need to select from among them the essential ones and arrange them by division. In other words, induction does not begin with perception and end with *nous* but begins with experience and ends with the possession of ‘the whole universal’. Thus, regarding the debate over

whether induction is sufficient for attaining the *nous* of principles,¹⁷¹ my account differs from the ‘empiricist’ view, which holds that induction is sufficient for attaining *nous*, so that *nous* is simply the outcome or the result of induction.¹⁷² On the other hand, my interpretation also differs from the ‘intuitionist’ or ‘rationalist’ view, according to which induction must be supplemented by intuition to attain *nous*.¹⁷³ By contrast, I argue that what must supplement induction is not intuition but the selection of essential predicates and their arrangement through division.

3.2. Step (2): Selection of Essential Predicates

I have argued in the previous section that the collection of the universal attributes through induction is not sufficient for attaining *nous* of the logical *definiens* of a species. After induction, two further steps remain. First, we must select, from among the universal attributes collected by induction, the essential predicates of the subject. Second, these essential predicates must be arranged into a unified account by means of division.

The present section examines the selection of essential predicates as it is presented in *Posterior Analytics* II 13, 96^a24–^b14 and argues that it is insufficient for attaining *nous* of the logical *definiens* of a species. More specifically, this procedure suffers from

¹⁷¹ For an overview of this debate, see Bronstein 2016, 228–9.

¹⁷² For this interpretation, see Barnes 1993, 267–70; Liske 1994, 142–3; Helmig 2012, 139–40. It should be noted, however, that although McKirahan 1992, 257–9 endorses the empiricist position, he maintains that *nous* of principles consists in knowing the principles as principles (ibid. 258), which in turn requires organizing the principles and conclusions within demonstrations.

¹⁷³ For this interpretation, see Irwin 1988, 134–7, 531–2; Bayer 1997, 131–2.

three limitations. First, it cannot exclude all non-essential attributes. Second, it does not necessarily arrange the essential predicates according to a non-arbitrary order. Third, it does not guarantee that the selected essential predicates are complete. Aristotle is clearly aware of the latter two limitations, since in *Posterior Analytics* II 13, 96^b30–97^a6, he presents division as a method both for ordering the essential predicates and for ensuring their completeness. By contrast, he does not appear to recognize the first limitation.

I begin by examining the three criteria Aristotle employs for selecting the essential predicates and then show that this procedure, by itself, is insufficient for attaining *nous* of the logical *definiens* of a species.

3.2.1. *The Three Criteria by Which We Select Essential Predicates*

In *Posterior Analytics* II 13, 96^a24–96^b1, Aristotle shows how to hunt for ‘what is predicated in the what-it-is’ through the example of the number three:

Of those which hold of something always, some extend further than it without being outside its genus. I call those which hold of each universally but also hold of something else ‘extending further.’ For instance, there is something that holds of each triad but also of what is not a triad: being holds of three but also what is not a number; odd holds of every triad and extends further (it also holds of five), but it is not outside its genus—for five is number, and nothing outside number is odd. We should take items of this type up to the point at which we have for the first time taken just so many that, while each extends further, all of them together do not extend further: this must be the essence of the object. For instance, number holds of every triad, and so do odd and prime (in both senses—both as

not being measured by number and as not being compounded from numbers). This, then, is precisely what three is: a number that is odd, prime, namely, prime in this specific sense.¹⁷⁴ Each of former items holds of all the odd numbers as well, and the last item holds of two as well; but all of them together hold of nothing apart from three.¹⁷⁵

According to this passage, ‘what is predicated in the what–it–is’ must satisfy three criteria:

(1) It holds of the subject always.

¹⁷⁴ Following Barnes 1993, 241, I take *kai* in *prōtos kai hōdi prōtos* as epexegetic and understand *hōdi prōtos* (‘primary in this sense’) as referring back to *to prōton amphoterōs* (‘prime in both senses’) at 96^a36. This interpretation is already adopted by Philoponus, in *An. post.* 399.9–11; Eustratius, in *An. post.* 187.7–9; Ross 1949, 656; Barnes 1993, 241; Detel 1993, 753; Charles 2000, 226, note 370; Bertagna 2024, 888. This interpretation provides the best possible way to make sense of the sentence in 96^a38–96^b1: τούτων γὰρ ἕκαστον, τὰ μὲν καὶ τοῖς περιττοῖς πᾶσιν ὑπάρχει, τὸ δὲ τελευταῖον καὶ τῇ δυάδι, πάντα δὲ οὐδενί. The contrast between τὰ μὲν and τὸ δὲ τελευταῖον indicates an exhaustive division, where τὸ δὲ τελευταῖον denotes the last predicate in the definition of three. This predicate can only apply to two and three, whereas each of the preceding predicates also applies to all odd numbers. Accordingly, τὸ τελευταῖον can only denote ‘prime, namely, prime in this sense’, namely, ‘prime in both senses’. For alternative interpretations, see Vlasits 2017, 72–3.

¹⁷⁵ *An. post.* II 13, 96^a24–96^b1, trans. Barnes 1993, modified: Τῶν δὲ ὑπαρχόντων ἀεὶ ἐκάστῳ ἔνια ἐπεκτείνει ἐπὶ πλεον, οὐ μέντοι ἔξω τοῦ γένους. λέγω δὲ ἐπὶ πλεον ὑπάρχειν ὅσα ὑπάρχει μὲν ἐκάστῳ καθόλου, οὐ μὴν ἀλλὰ καὶ ἄλλῳ. οἷον ἔστι τι ὃ πάση τριάδι ὑπάρχει, ἀλλὰ καὶ μὴ τριάδι, ὥσπερ τὸ ὄν ὑπάρχει τῇ τριάδι, ἀλλὰ καὶ μὴ ἀριθμῷ, ἀλλὰ καὶ τὸ περιττὸν ὑπάρχει τε πάση τριάδι καὶ ἐπὶ πλεον ὑπάρχει (καὶ γὰρ τῇ πεντάδι ὑπάρχει), ἀλλ’ οὐκ ἔξω τοῦ γένους· ἡ μὲν γὰρ πεντὰς ἀριθμός, οὐδὲν δὲ ἔξω ἀριθμοῦ περιττόν. τὰ δὲ τοιαῦτα ληπτέον μέχρι τούτου, ἕως τοσαῦτα ληφθῇ πρῶτον ὧν ἕκαστον μὲν ἐπὶ πλεον ὑπάρξει, ἅπαντα δὲ μὴ ἐπὶ πλεον· ταύτην γὰρ ἀνάγκη οὐσίαν εἶναι τοῦ πράγματος. οἷον τριάδι ὑπάρχει πάση ἀριθμός, τὸ περιττόν, τὸ πρῶτον ἀμφοτέρως, καὶ ὡς μὴ μετρεῖσθαι ἀριθμῷ καὶ ὡς μὴ συγκεῖσθαι ἐξ ἀριθμῶν. τοῦτο τοίνυν ἦδη ἐστὶν ἡ τριάς, ἀριθμὸς περιττὸς πρῶτος καὶ ὡδὶ πρῶτος. τούτων γὰρ ἕκαστον, τὰ μὲν καὶ τοῖς περιττοῖς πᾶσιν ὑπάρχει, τὸ δὲ τελευταῖον καὶ τῇ δυάδι, πάντα δὲ οὐδενί. I translate *πάση τριάδι* as ‘every triad,’ that is, every group of three particulars. Likewise, I translate *μὴ τριάδι* as ‘what is not a triad,’ namely, each group of particulars whose number is not three. By contrast, I translate *τῇ τριάδι* as ‘the three,’ referring to the species ‘three’.

- (2) It extends further (*epekteinei epi pleon*) than the subject, that is, it holds universally of it but also holds of something else.
- (3) It is not outside the genus (*ou exō tou genous*) of the subject.

In what follows, I shall begin with the first limitation suffered by the selection of essential predicates on the basis of these three criteria: it fails to exclude all non-essential attributes.

3.2.2. *Limitation (1): Failure to Exclude All Non-Essential Attributes*

The first limitation of the selection of essential predicates through the three criteria mentioned above is that they fail to exclude all non-essential attributes. To see why this is so, we must first consider what these criteria can exclude.

The first criterion, namely that the predicate must hold of the subject always, excludes all attributes that do not hold universally or necessarily of it. This shows that essential predicates must be universal attributes, which have already been collected through induction.¹⁷⁶

Therefore, if the selection is successful, then the second and the third criteria should exclude all the necessary but non-essential attributes. The second criterion, that the predicate must ‘extend further’ than the subject, excludes predicates that are co–

¹⁷⁶ An anonymous reviewer has suggested that ‘what holds of the subject always’ should not itself be regarded as a criterion, since the selection already proceeds from predicates that hold of the subject always. This objection is well taken. Nevertheless, insofar as this condition determines the domain within which essential predicates are to be sought, it may still be regarded as a criterion that every essential predicate must satisfy.

extensive with the subject, namely, demonstrable *per se* attributes and peculiar properties, both of which are necessary but non-essential attributes.¹⁷⁷ At this stage, we are left with all the universal attributes that extend further than the subject. Some of these, however, are not essential, for example, trans-categorical predicates such as ‘being’ and ‘one’. This is why Aristotle introduces the third criterion, namely that the predicate must not be outside the genus of the subject. In other words, it must not extend beyond the genus to which the subject belongs. This criterion excludes trans-categorical predicates such as ‘being’ and ‘one’.

Taken together, these three criteria exclude many non-essential attributes. Nevertheless, they do not exclude all of them. For example, they fail to exclude what I shall call ‘demonstrable *per se* attributes of a genus of the subject’. Consider, for example, the predicate ‘having the sum of interior angles equal to two right angles’ (2R) in relation to the isosceles triangle.¹⁷⁸ 2R is a demonstrable *per se* attribute of triangle, that is, a genus of isosceles triangle. Moreover, 2R satisfies all three criteria: it holds necessarily of every isosceles triangle, extends further than it, and does not extend beyond its genus ‘triangle’. Yet 2R is clearly not an essential predicate of the isosceles triangle. Thus, the three criteria fail to exclude all non-essential attributes.

Nor is this the only type of counterexample. Consider the predicate ‘less than four’ in relation to the number three. It holds necessarily of three, extends beyond it (since it

¹⁷⁷ It should be noted that not all demonstrable attributes are also *per se*. For example, 2R is a demonstrable attribute of isosceles triangle, but not a *per se* attribute of it. I regard all demonstrable *per se* attributes as peculiar properties, insofar as they are co-extensive with, yet not essential to, their subjects. However, not every peculiar property is a demonstrable *per se* attribute. Some peculiar properties may be merely accidental rather than *per se*.

¹⁷⁸ For this point, see already McKirahan 1992, 114: ‘An obvious counterexample is the property 2R, which belongs more widely than to isosceles triangle, without being part of its essence.’

also holds of two), and remains within the genus ‘number’. Nevertheless, it is not an essential predicate of three.¹⁷⁹ This example again shows that Aristotle’s three criteria are insufficient to exclude all non–essential attributes. However, it seems that Aristotle is not aware of this first limitation.

I now turn to the second and the third limitations, namely, that the selected predicates may fail to be arranged according to a non–arbitrary order and that the resulting list of essential predicates may be incomplete.

3.2.3. *Limitations (2) and (3): Lack of Order and Incompleteness*

Some commentators maintain that the selection of essential predicates proceeds according to a non–arbitrary order, appealing to the passage in which Aristotle tells us when the selection should come to an end.

In *Posterior Analytics* II 13, 96^a32–5, Aristotle writes:

We should take items of this type up to the point at which we have for the first time (*prōton*) taken just so many that, while each extends further, all of them together do not extend further: this must be the essence (*ousia*) of the object.¹⁸⁰

¹⁷⁹ For a similar example, see Charles 2000, 225, where he mentions ‘less than three’ as a necessary but non–essential property of the number two.

¹⁸⁰ *An. post.* II 13, 96^a32–5, trans. Barnes 1993: τὰ δὲ τοιαῦτα ληπτέον μέχρι τούτου, ἕως τοσαῦτα ληφθῇ πρῶτον ὅν ἕκαστον μὲν ἐπὶ πλεον ὑπάρξει, ἅπαντα δὲ μὴ ἐπὶ πλεον· ταύτην γὰρ ἀνάγκη οὐσίαν εἶναι τοῦ πράγματος.

The expression ‘for the first time’ (*prōton*) appears to suggest that the selection proceeds according to a non-arbitrary order. Otherwise, there could be several different sets of predicates which, taken together, are co-extensive with the subject, and there would be no principled reason for preferring one set to another.¹⁸¹ I argue, however, that *prōton* merely indicates that the predicates are selected sequentially. It does not imply that the sequence itself is objective or non-arbitrary, but only that there is a point at which we *for the first time* obtain a set of essential predicates that is co-extensive with the subject. Suppose, for example, that we first select ‘prime in both senses’, and then ‘odd’ as essential predicates of three. At this stage, we have, ‘for the first time’, obtained a set of essential predicates that is co-extensive with three. Yet to arrive at this, we do not take order into consideration.

The selection of essential predicates therefore suffers from a second limitation: it does not guarantee that the selected predicates are arranged in a non-arbitrary order.

The third limitation is that the resulting list of essential predicates may be incomplete. Again, suppose that we select only ‘prime in both senses’ and ‘odd’ as the essential predicates of three. The resulting definition—‘what is prime in both senses and odd’—is acceptable in one respect, since the genus ‘number’ is implicitly contained in each predicate. Nevertheless, we may still complain that the list of essential predicates is not complete, insofar as it leaves out ‘number’, which is in fact the most important essential predicate of the number three.

Why, then, does Aristotle confidently maintain at 96^a34, 96^a37–8, 96^b5–6, and 96^b11–13 that the selection of the essential predicates enables us to discover the ‘what

¹⁸¹ For this view, see Barnes 1993, 241.

it is' or the essence (*ousia*) of three, if he is aware that the resulting list may be disordered and incomplete?¹⁸²

One possible answer is that, even when the list of essential predicates is incomplete, the selected predicates, when taken together, nevertheless reveal the essence because the omitted predicates are already implied by those that have been selected. Even so, the selected predicates still fail to exhibit a non-arbitrary order. We may therefore conclude that, in this context, Aristotle's notion of essence does not require that the essential predicates be presented in their proper order.

3.3. Step (3): Division

In the previous section, I have argued that even the selection of essential predicates is insufficient for attaining *nous* of the logical *definiens* of a species. In the present section, I turn to Aristotle's account of division in *Posterior Analytics* II 13 and show how division remedies the second and the third limitations suffered by the selection of essential predicates.

3.3.1. Usefulness of Division (1): Order

¹⁸² See *An. post.* II 13, 96^b5–6: οὕτως ἐξ ἀνάγκης μὲν ἂν εἴη τριάς ταῦτα. ὅτι δ' οὐσία, ἐκ τῶνδε δῆλον. *An. post.* II 13, 96^b10–13: εἰ τοίνυν μηδενὶ ὑπάρχει ἄλλω ἢ ταῖς ἀτόμοις τριάσι, τοῦτ' ἂν εἴη τὸ τριάδι εἶναι (ὑποκείσθω γὰρ καὶ τοῦτο, ἡ οὐσία ἢ ἐκάστου εἶναι ἢ ἐπὶ τοῖς ἀτόμοις ἔσχατος τοιαύτη κατηγορία). Barnes 1993, 241–2 questions whether the selected set of predicates may merely constitute a peculiar property (*idion*) of the object.

The first function of division, according to Aristotle, is to arrange the selected essential predicates into a non-arbitrary order:

But it makes a difference which of the predicates are predicated first and which later—for instance, whether you say animal tame two-footed or two-footed animal tame. For if every item is made up from two things (*hapan ek duo esti*), and if animal tame constitutes a single entity (*hen*), and if man, or whatever the one in question may be (*ho ti dêpot' esti to hen*), is next made up from this and the specific difference, then you must make a division, while assuming [what is predicated in the what-it-is].¹⁸³

Why is such an order important for establishing a definition? Detel (1993) argues that the correct order of subsumption is significant because it establishes the correct explanatory relations among the universal propositions in demonstrations.¹⁸⁴ Suppose, for example, that the essential predicates of man are arranged as ‘animal, footed, two-footed’. One can then construct a demonstration in which ‘animal’ is the major term, ‘footed’ the middle term, and ‘two-footed’ the minor term. By contrast, if the essential predicates of man are arranged as ‘footed, animal, two-footed’, the resulting deduction is not sound, since its major premise ‘footed holds of all animals’ is false.

This interpretation, however, faces two difficulties. First, it explains the significance of the order of essential predicates only in relation to demonstration,

¹⁸³ *An. post.* II 13, 96^b30–5, trans. Barnes 1993, slightly modified: διαφέρει δέ τι τὸ πρῶτον καὶ ὕστερον τῶν κατηγορουμένων κατηγορεῖσθαι, οἷον εἰπεῖν ζῶον ἡμερον δίπουν ἢ δίπουν ζῶον ἡμερον. εἰ γὰρ ἅπαν ἐκ δύο ἐστὶ, καὶ ἐν τι τὸ ζῶον ἡμερον, καὶ πάλιν ἐκ τούτου καὶ τῆς διαφορᾶς ὁ ἄνθρωπος ἢ ὅ τι δήποτ' ἐστὶ τὸ ἐν γινόμενον, ἀναγκαῖον διελόμενον αἰτεῖσθαι. For a similar construal of ἀναγκαῖον διελόμενον αἰτεῖσθαι, see Ross 1949, 659; Barnes 1993, 245.

¹⁸⁴ See Detel 1993, 763–4. See also Vlasits 2017, 81.

without explaining why such an order is required for the establishment of definition. Second, it applies only to cases in which the predicates can be ordered by subsumption.¹⁸⁵ There are, however, cases in which no such ordering is possible. Consider, for example, the ordered set ‘animal, tame, two-footed’. Here, ‘two-footed’ is not subsumed under ‘tame’, and no demonstration can be constructed from the false premise ‘all two-footed things are tame’. In cases of this sort, the correct order does not help us establish the explanatory relations among the universal propositions in demonstrations.

As an alternative, I argue that the proper ordering of essential predicates serves to ensure the unity of definition, enabling us to cognize it as a well-structured whole.¹⁸⁶ In the claim ‘every item is made up of two things’ (*hapan ek duo esti*), ‘two things’ should refer to the immediate genus and the final specific difference. If the essential predicates are arranged in the correct order, we are then able to identify correctly the immediate genus and the final specific difference. For Aristotle, the immediate genus and the final specific difference of something are ‘one’ in the sense that the former is potentiality and the latter is actuality. Such a unity between the immediate genus and the final specific difference mirrors the unity of the *definiendum*. This is significant since a *definiens*, as an object of *nous*, should be cognized as a unity.

It should be noted, however, that Aristotle’s use of division is restricted to arranging the essential predicates according to the order of subsumption. This explains why, when he describes how to arrange essential predicates by means of division, he refers exclusively to the order of subsumption:

¹⁸⁵ Barnes 1993, 244–5 notes that the order of subsumption does not apply to all cases of division.

¹⁸⁶ For this view, see Detel 1993, 764; Bronstein 2016, 219.

You will be able to order the items as you should if you take the first item (*to prōton labēi*); and you will do this if you take the term which follows (*akolouthei*) all the others but is followed by none of them (there must be some such term). Once this is taken, the same now goes for the lower terms: the second term will be the first term of the others, and the third term will be the first of the following terms. For if the term above is taken away, the following will be the first of the others. Similarly in the remaining cases.¹⁸⁷

According to this passage, to arrange essential predicates by means of division, we must take the first among all the items and then take the first among the remaining items, and so on. Aristotle characterizes ‘the first item’ as the one that follows (*akolouthei*) all the others while itself being followed by none of them, namely, what is predicated of all the others but none of them is predicated of it. Such an item should be the predicate which has the greatest extension and therefore subsumes all the remaining items. This procedure, however, applies only when the essential predicates admit of an order of subsumption. Where no such order exists, division cannot determine their proper arrangement. In such cases, the appropriate ordering must instead be supplied by the relevant special science.¹⁸⁸

¹⁸⁷ *An. post.* II 13, 97^a28–34, trans. Barnes 1993, slightly modified: τὸ δὲ τάξει ὡς δεῖ ἔσται, ἐὰν τὸ πρῶτον λάβῃ. τοῦτο δ’ ἔσται, ἐὰν ληφθῇ ὅπασιν ἀκολουθεῖ, ἐκεῖνο δὲ μὴ πάντα· ἀνάγκη γὰρ εἶναι τι τοιοῦτον. ληφθέντος δὲ τούτου ἤδη ἐπὶ τῶν κάτω ὁ αὐτὸς τρόπος· δεύτερον γὰρ τὸ τῶν ἄλλων πρῶτον ἔσται, καὶ τρίτον τὸ τῶν ἐχομένων· ἀφαιρεθέντος γὰρ τοῦ ἄνωθεν τὸ ἐχόμενον τῶν ἄλλων πρῶτον ἔσται. ὁμοίως δὲ καὶ ἐπὶ τῶν ἄλλων.

¹⁸⁸ Detel 1993, 742 argues that the correct order is determined by empirical or mathematical considerations. Bronstein 2016, 209, by contrast, maintains that it is determined by the relevant special sciences. Thus, just as the order of ‘odd’ and ‘prime’ is determined by arithmetic, the order of ‘tame’ and ‘two-footed’ is determined by zoology. See also Charles 2000, 226–7; Vlasits 2017, 83–4.

3.3.2. *Usefulness of Division (2): Completeness*

The second function of division in establishing a (logical) definition is to ensure the completeness of essential predicates:

Again, only in this way is it possible to ensure that you omit nothing in the what–it–is. For if, when the first genus (*to prōton genos*) has been taken (*lēphthēi*), you then take (*lambanēi*) one of the lower divisions, not everything will fall into it. For instance, not every animal is either whole–winged or split winged—rather, every winged animal is (for it is this of which this is a specific difference). The first specific difference (*prōtē diaphora*) of animal is that into which every animal falls; similarly, for everything else, both the kinds outside it and the kinds subordinate to it, for instance, the first difference of bird is that into which every bird falls, and of which into every fish. If you continue in this way you can know that nothing has been omitted: otherwise, you are bound to omit something without knowing it.¹⁸⁹

According to Aristotle, we must begin with the first genus and divide it by means of its ‘first specific difference’ (*prōtē diaphora*), namely, what divides that genus exclusively. After that, we must repeat the same procedure for each subordinate kind. Only in this

¹⁸⁹ *An. post.* II 13, 96^b35–97^a6, trans. Barnes 1993, slightly modified: “Ἐτι πρὸς τὸ μηδὲν παραλιπεῖν ἐν τῷ τί ἐστίν οὕτω μόνως ἐνδέχεται. ὅταν γὰρ τὸ πρῶτον ληφθῇ γένος, ἂν μὲν τῶν κάτωθεν τινα διαιρέσεων λαμβάνῃ, οὐκ ἐμπεσεῖται ἅπαν εἰς τοῦτο, οἷον οὐ πᾶν ζῷον ἢ ὀλόπτερον ἢ σχιζόπτερον, ἀλλὰ πτηνὸν ζῷον ἅπαν· τούτου γὰρ διαφορὰ αὕτη. πρώτη δὲ διαφορὰ ἐστὶ ζῶου εἰς ἣν ἅπαν ζῷον ἐμπίπτει. ὁμοίως δὲ καὶ τῶν ἄλλων ἐκάστου, καὶ τῶν ἔξω γενῶν καὶ τῶν ὑπ’ αὐτό, οἷον ὄρνιθος, εἰς ἣν ἅπας ὄρνις, καὶ ἰχθύος, εἰς ἣν ἅπας ἰχθύς. οὕτω μὲν οὖν βαδίζοντι ἔστιν εἰδέναι ὅτι οὐδὲν παραλέλειπται· ἄλλως δὲ καὶ παραλιπεῖν ἀναγκαῖον καὶ μὴ εἰδέναι.

way can we be sure that we have identified the correct starting point and have not overlooked any essential predicate intermediate between the first genus and the last specific difference.¹⁹⁰

A later passage (97^a35–^b6) complements this account by explaining how we can be sure that we have reached the last specific difference:

That these are all the terms there are is clear when you take the first item by division, namely, every animal is either this or that, and that in fact holds of it; next you take the difference of this whole; and there is no further specific difference of the ultimate whole, or rather, that what you get immediately with the ultimate specific difference no longer differs in species from the composite thing. For it is plain that nothing extra has been posited (for all these items that are taken are in the what–it–is) and also that nothing is missing. If anything were missing, it would have to be either a genus or a specific difference; now the genus is the first item, and it was added to the specific differences. All the specific differences are grasped, for there is no further specific difference. Otherwise, the ultimate term would differ in species, whereas it has been said not to differ.¹⁹¹

¹⁹⁰ I distinguish between ‘the last specific difference’, which is at the end of one line of division, and ‘the final specific difference’, which, when taken together with the genus, constitutes a species. If only one line of division is involved, and the latter specific difference always entails the former, then the last specific difference is also the final specific difference. However, if there are multiple lines of division as Aristotle recommends in *De Partibus Animalium* I 3, then the final specific difference is the combination of the specific differences at the end of each line of division.

¹⁹¹ *An. post.* II 13, 97^a35–^b6, trans. Barnes 1993, modified: ὅτι δ’ ἅπαντα ταῦτα, φανερόν ἐκ τοῦ λαβεῖν τό τε πρῶτον κατὰ διαίρεσιν, ὅτι ἅπαν ἢ τόδε ἢ τόδε ζῷον, ὑπάρχει δὲ τόδε, καὶ ἄλιν τούτου ὅλου τὴν διαφορὰν, τοῦ δὲ τελευταίου μηκέτι εἶναι διαφορὰν, ἢ καὶ εὐθὺς μετὰ τῆς τελευταίας διαφορᾶς τοῦ συνόλου μὴ διαφέρειν εἶδει ἔτι τοῦτο. δῆλον γὰρ ὅτι οὔτε πλεῖον πρόσκειται (πάντα γὰρ ἐν τῷ τί ἐστὶν εἴληπται τούτων) οὔτε ἀπολείπει οὐδέν· ἢ γὰρ γένος ἢ διαφορὰ ἂν εἴη. γένος μὲν οὖν τό τε πρῶτον, καὶ μετὰ τῶν διαφορῶν τοῦτο προσλαμβάνομενον· αἱ διαφοραὶ δὲ πᾶσαι ἔχονται· οὐ γὰρ ἔτι ἐστὶν ὑστέρα· εἶδει γὰρ ἂν διέφερε τὸ τελευταῖον, τοῦτο δ’ εἴρηται μὴ διαφέρειν.

This passage is best understood in conjunction with the one discussed above (*An. post.* II 13, 96^b35–97^a6). In the earlier passage, Aristotle concentrates on the identification of the first genus, the first specific difference of that genus, and the subsequent stages of division. There, Aristotle’s emphasis is on ensuring that the correct starting point is chosen and that no intermediate essential predicates are omitted. The endpoint of the procedure—the indivisible species—is mentioned only briefly.

By contrast, in the passage just quoted, Aristotle briefly recapitulates the earlier discussion before shifting his attention to the endpoint of the process. Here the emphasis falls upon the endpoint of the process, namely, the last specific difference. Taken together, these two passages provide complementary instructions for ensuring the completeness of essential predicates.

I have now shown that the two functions of division are precisely to remedy the second and the third limitations of the selection of essential predicates.¹⁹² This suggests that Aristotle himself recognizes that the selection is insufficient in these two respects. By contrast, he appears to be unaware of its first limitation, and he is silent on whether division can also remedy it.

The discussion so far has established that division enables us to arrive at a well-structured and complete logical *definiens*. Will this be sufficient for attaining *nous* of the logical *definiens*? In the following section, I critically examine Bronstein’s claim that attaining *nous* of a logical *definiens* requires knowing it as explanatorily basic

¹⁹² This connection between the selection of essential predicates and the method of division suggests that *Posterior Analytics* II 13 possesses an inner unity and that its different parts are carefully arranged by Aristotle.

through demonstrations. By contrast, I argue that *nous* of the logical *definiens* of a species is attained as soon as we attain, by means of division, a well-structured, complete, and unified logical *definiens*.¹⁹³

3.4. Do We Need Demonstrations to Attain *nous* of a Logical *definiens*?

Against the empiricists, Bronstein argues that induction alone is insufficient for attaining *nous* of the logical *definiens*. Unlike the rationalists, he maintains that what is required in addition to induction is not intuition but demonstrations, through which one knows how a logical *definiens* explains each demonstrative conclusion.¹⁹⁴

Bronstein's position rests on two assumptions. First, to attain *nous* of principles is to know them as principles, that is, to know how they are explanatory of each demonstrative conclusion.¹⁹⁵ Second, there is a distinction between the noetic and non-noetic knowledge of the principles.¹⁹⁶ I shall argue that while the first assumption is partially correct, the second assumption should be rejected.

With respect to the first assumption, I agree that attaining *nous* of principles requires knowing them as principles. However, knowing principles as principles does

¹⁹³ I hold that there is also *nous* of a pure causal *definiens*. For present purposes, however, I restrict the discussion to logical *definiens*.

¹⁹⁴ An earlier, but brief version of this view can already be found in McKirahan 1992, 259.

¹⁹⁵ Bronstein 2016, 21. For the same assumption, see Kosman 1973, 383–5; McKirahan 1992, 258; Charles 2000, 265–6; Gasser–Wingate 2016, 2, 4. I take these references from Gasser–Wingate 2016, 2.

¹⁹⁶ See Bronstein 2016, 21, 60–1, 79.

not always amount to knowing them as explanatorily basic.¹⁹⁷ Among principles, only (logical and causal) *definientia* are explanatory of the conclusions of demonstrations. By contrast, axioms and hypotheses are principles without themselves explaining the conclusions. Rather, they function as background conditions that secure the validity and truth of demonstrations.¹⁹⁸ With respect to logical *definientia*, to attain *nous* of them is indeed to know them as logical *definientia* that are explanatorily basic. Nevertheless, this does not require us to know, by means of demonstrations, how a logical *definiens* explains each specific conclusion. In other words, the state of *nous* does not require knowledge of which term in the logical *definiens* serves as the middle term in all relevant demonstrations.

With respect to the second assumption, I deny that there is a distinction between noetic and non-noetic knowledge of principles. Rather, I argue that our knowledge of principles prior to demonstrations is already noetic. In the case of logical *definientia*, we must already grasp them as logical *definientia* that are explanatorily basic before any demonstration can proceed. Otherwise, we could not identify which propositions qualify as primary premises, namely, those that are true, primary, immediate, prior to, better known than, and explanatory of the conclusion. Likewise, we must already know axioms as axioms and hypotheses as hypotheses before demonstration, since otherwise

¹⁹⁷ Note that all scholars mentioned in the footnote 195 connect knowing principles as principles with knowing them as explanatory of conclusions.

¹⁹⁸ For the three kinds of immediate principles of deduction (*amesos archē sullogistikē*), see *An. post.* I 2, 72^a14–24, and *An. post.* I 10, 76^a31–^b22. Eelink/Hasper (manuscript), 21, argue that they do not function as premises of deductions or demonstrations. Rather, they are principles that ‘underlie’ deductions or demonstrations.

we would be unable to employ them in accordance with their respective functions within demonstrative reasoning.

Indeed, Aristotle explicitly maintains that before demonstration, we must have several kinds of ‘prior knowledge’ about principles:

There are two ways in which we must have prior knowledge: of some things we must already assume that they are, of others we must grasp what the item said is (and of some things both). For instance, of the fact that everything is either asserted or denied truly, we must believe that it is the case; of the triangle, that it signifies this; and of the unit both (both what it signifies and that it is). For these items are not all equally plain to us.¹⁹⁹

In this passage, Aristotle distinguishes three kinds of entities and the corresponding kinds of prior knowledge required for each. First, in the case of an axiom such as the Principle of the Excluded Middle (‘everything is either asserted or denied’), we need only assume ‘that it is’ (*hoti esti*). Second, in the case of a non–primary subject such as the triangle, we must grasp what the item said is or what it signifies. Finally, in the case of a primary subject such as the unit, we must assume both ‘that it is’ and what it signifies or ‘what it is’.²⁰⁰ These correspond precisely to the three kinds of principles

¹⁹⁹ *An. post.* I 1, 71^a11–17, trans. Barnes 1993, slightly modified: διχῶς δ’ ἀναγκαῖον προγινώσκειν· τὰ μὲν γάρ, ὅτι ἔστι, προὔπολαμβάνειν ἀναγκαῖον, τὰ δέ, τί τὸ λεγόμενόν ἐστι, ξυνιέναι δεῖ, τὰ δ’ ἄμφω, οἷον ὅτι μὲν ἅπαν ἢ φῆσαι ἢ ἀποφῆσαι ἀληθές, ὅτι ἔστι, τὸ δὲ τρίγωνον, ὅτι τοδὶ σημαίνει, τὴν δὲ μονάδα ἄμφω, καὶ τί σημαίνει καὶ ὅτι ἔστιν· οὐ γὰρ ὁμοίως τούτων ἕκαστον δῆλον ἡμῖν.

²⁰⁰ In this passage, ‘what it signifies’ refers back to ‘what the item spoken of is’ (*ti to legomenon esti*). In *An. post.* II 7, 92^b15–16, Aristotle states that a geometrician ‘assumes’ (*lambanein*) what triangle signifies and proves (*deiknunai*) that it exists. Likewise, in *An. post.* II 9, 93^b24–5, he says that an arithmetician supposes (*hupotithenai*) of the unit both ‘that it is’ and ‘what it is’. These passages therefore identify ‘what it signifies’ with ‘what it is’. I suggest ‘what it signifies’ is not to be regarded

of demonstrations: axioms, hypotheses concerning the existence of primary subjects, and the (logical) *definientia* of primary and non-primary subjects. Aristotle explicitly states that we must assume (*proupolambanein*)²⁰¹ or grasp (*xunienai*)²⁰² them. Both verbs suggest that the knowledge of them is possessed before demonstration.²⁰³

This interpretation is confirmed by many other passages. As regards axioms, Aristotle states in *Posterior Analytics* I 2, 72^a16–17 that one must have (*echein*) them if one is to learn anything.²⁰⁴ Likewise, in *Posterior Analytics* I 10, 76^b14–5, he describes common axioms as the primary items from which (*ex hōn*) demonstrations proceed.²⁰⁵ Similarly, in *Posterior Analytics* II 13, 96^b20–1, he states that peculiar attributes are investigated through (*dia*) the common primaries, namely the common axioms.²⁰⁶ The same point applies to definitions. In *Prior Analytics* I 27, 43^b1–3, Aristotle states that, in selecting premises, one must first assume (*hupothithenai*) the

as a nominal definition in the sense described in *Posterior Analytics* II 10, 93^b30–1. Rather, such a definition should be taken as an ‘indemonstrable posit of the what–it–is’ in *Posterior Analytics* II 10, 94^a9–10.

²⁰¹ Aristotle also uses *lambanein* in connection with the principles, see *An. post.* I 1, 71^a7–8: [...] οἱ μὲν λαμβάνοντες ὡς παρὰ ξυνιέντων, [...]. *An. post.* I 10, 76^a31–6: Λέγω δ’ ἀρχὰς ἐν ἐκάστῳ γένει ταύτας ἃς ὅτι ἔστι μὴ ἐνδέχεται δεῖξαι. τί μὲν οὖν σημαίνει καὶ τὰ πρῶτα καὶ τὰ ἐκ τούτων, λαμβάνεται, ὅτι δ’ ἔστι, τὰς μὲν ἀρχὰς ἀνάγκη λαμβάνειν, τὰ δ’ ἄλλα δεικνύναι· οἷον τί μονὰς ἢ τί τὸ εὐθὺ καὶ τρίγωνον, εἶναι δὲ τὴν μονάδα λαβεῖν καὶ μέγεθος, τὰ δ’ ἕτερα δεικνύναι.

²⁰² See *An. post.* I 1, 71^a7–8: οἱ μὲν λαμβάνοντες ὡς παρὰ ξυνιέντων, [...]. See also *An. post.* I 1, 71^a12–13: [...] τὰ δέ, τί τὸ λεγόμενον ἐστι, ξυνιέναι δεῖ, [...]. *An. post.* I 2, 71^b31–3: καὶ προγινωσκόμενα οὐ μόνον τὸν ἕτερον τρόπον τῷ ξυνιέναι, ἀλλὰ καὶ τῷ εἰδέναι ὅτι ἔστιν. *An. post.* I 10, 76^b36–7: [...] τοὺς δ’ ὅρους μόνον ξυνιέσθαι δεῖ.

²⁰³ See *An. post.* I 10, 76^a31–6, *An. post.* I 3, 72^b18–27.

²⁰⁴ See *An. post.* I 2, 72^a16–17: ἤν δ’ ἀνάγκη ἔχειν τὸν ὅτιοῦν μαθησόμενον, ἀξιώμα.

²⁰⁵ See *An. post.* I 10, 76^b14–5: [...] καὶ τὰ κοινὰ λεγόμενα ἀξιώματα, ἐξ ὧν πρώτων ἀποδείκνυσι, [...].

²⁰⁶ See *An. post.* II 13, 96^b20–1: [...] τὰ ἴδια πάθη θεωρεῖν διὰ τῶν κοινῶν πρώτων.

relevant definitions.²⁰⁷ Likewise, in *Posterior Analytics* I 33, 89^a18, he claims that demonstrations proceed through (*dia*) definitions.²⁰⁸ Finally, Aristotle makes the same point with respect to hypotheses. In *Posterior Analytics* II 2, he states that we must first know ‘that it is’ before inquiring ‘why it is’, that is, before seeking demonstrations. In all these cases, principles are presented as epistemically prior to demonstrations rather than as presupposing them.

Proponents of Bronstein’s interpretation may reply that the grasp of principles described in these passages is merely non-noetic knowledge of them. However, nowhere in these texts does Aristotle suggest that this kind of cognition falls short of *nous*. Indeed, nowhere does Aristotle indicate that there are two different modes of knowledge concerning principles.

My interpretation can also make better sense of the claim that ‘*nous* is the principle of *epistēmē*’ in *Posterior Analytics* II 19. There Aristotle argues that *nous* is the principle of *epistēmē*, because nothing is truer (*alēthesteron*) and more exact (*akribesteron*) than *epistēmē* except *nous*.²⁰⁹ This suggests that *nous* grounds the truth and exactness of *epistēmē*. In other words: the truth and exactness of knowledge of principles ground the truth and exactness of knowledge of derived facts. It is important to note that the truth and exactness at issue here is not the truth of objects but the truth

²⁰⁷ *An. pr.* I 27, 43^b1–3: ‘So one must select the premises about each subject in this way, assuming first the subject itself, and both its definitions (*tous horismous*) and whatever is peculiar to the subject; [...]’ (trans. Smith 1989: Δεῖ δὴ τὰς προτάσεις περὶ ἕκαστον οὕτως ἐκλαμβάνειν, ὑποθέμενον αὐτὸ πρῶτον καὶ τοὺς ὁρισμούς τε καὶ ὅσα ἴδια τοῦ πράγματός ἐστιν, [...].)

²⁰⁸ See *An. post.* I 33, 89^a18: [...] τοὺς ὁρισμούς δι’ ὧν αἱ ἀποδείξεις, [...].

²⁰⁹ See *An. Post.* II 19, 100^b8–12: [...] καὶ οὐδὲν ἐπιστήμης ἀκριβέστερον ἄλλο γένος ἢ νοῦς, [...] ἐπεὶ δ’ οὐδὲν ἀληθέστερον ἐνδέχεται εἶναι ἐπιστήμης ἢ νοῦν, [...] εἰ οὖν μηδὲν ἄλλο παρ’ ἐπιστήμην γένος ἔχομεν ἀληθές, νοῦς ἂν εἴη ἐπιστήμης ἀρχή.

and exactness of the corresponding cognitive states.²¹⁰ If, however, the truth and exactness of *nous*, no less than those of *epistēmē*, themselves depend upon demonstrations, then it is difficult to see in what sense the former can ground the latter and how *nous* can be the principle of *epistēmē*. On Bronstein's interpretation, the explanatory priority of principles over the demonstrated conclusions remains, but the epistemic priority of *nous* over *epistēmē* as cognitive states is lost.

In sum, I argue that *nous* of the logical *definiētia* requires grasping them as logical *definiētia* and as explanatorily basic, but it does not require knowing, through demonstrations, which term in a logical *definiens* serves as the middle term for which specific conclusion. Moreover, the logical *definiētia* must already be known as logical *definiētia* and as explanatorily basic before demonstration, since otherwise demonstration would not be possible.

If *nous* of the logical *definiens* of a species does not presuppose demonstrations, then it is attained once we have arranged the essential predicates into a well-structured, complete, and unified definition by means of division. By contrast, we attain *nous* of the logical *definiens* of a primary genus once we arrive at, through induction, a universal attribute that holds all and only the instances of that genus *qua* instances of it.

²¹⁰ For *nous* and *epistēmē* as mental states, see *An. post.* II 19, 100^b5–8: Ἐπεὶ δὲ τῶν περὶ τὴν διάνοιαν ἔξεων αἷς ἀληθεύομεν αἱ μὲν αἰ ἀληθεῖς εἰσιν, αἱ δὲ ἐπιδέχονται τὸ ψεῦδος, οἷον δόξα καὶ λογισμός, ἀληθὴ δ' αἰ ἐπιστήμη καὶ νοῦς, [...].

Part II: Causal Essence

If causal essence aims to identify the cause of a thing's being, then it is natural that the bearers of causal essence are more restricted than those of logical essence. Whereas every existent entity possesses a logical essence, I argue that only those entities that have a *scientifically knowable cause* possess a causal essence.

An entity has a scientifically knowable cause if and only if the connection between the entity and its cause is necessary in the sense that if the cause exists, the entity necessarily exists, and conversely, if the entity exists, the cause also exists.²¹¹ This requirement excludes accidental causes, such as chance (*to automaton*), including luck (*tuchē*).²¹² In such cases, the relation between the cause and the entity is merely accidental: it is possible for the cause to exist without the entity, and for the entity to exist without the cause.

It should be noted that the necessary connection between the cause and the entity does not imply that both must be eternal or immutable like God or mathematical objects. Necessary causal connections are also found within the domain of natural kinds and

²¹¹ For Aristotle's view that the existence of the cause and that of the entity mutually imply one another, see *Posterior Analytics* II 16.

²¹² For chance and luck, see *Phy.* II 4–6. For the claim that chance includes luck, see *Phy.* II 6, 197^a36–^b1. For the claim that luck is indefinite (*aoristos*) and unclear (*adēlos*) a man, see *Phy.* II 5, 197^a9–10: ὅθεν καὶ ἡ τύχη ἀορίστου εἶναι δοκεῖ καὶ ἄδηλος ἀνθρώτῳ. For the claim that luck is beyond reason (*paralogon*), see *Phy.* II 5, 197^a18–19: καὶ τὸ φάναι εἶναι τι παράλογον τὴν τύχην ὀρθῶς

natural phenomena. For example, the form of man is necessarily the cause of man, and ‘the extinction of fire’ is necessarily the cause of thunder.²¹³

Accordingly, I suppose that the following kinds of entities possess a causal essence, insofar as they possess a scientifically knowable cause:

- (i) Particular instances or *infimae species* that fall under an ontological category, whose cause is their form.
- (ii) Forms of natural substances, whose cause is the form itself, and which can be articulated through the set of capacities constituting the form.
- (iii) Forms of geometrical objects, whose cause is likewise the form itself, and which can be articulated through the way in which intelligible matter is delimited.
- (iv) Forms of artefacts, whose cause is likewise the form itself, and which can be articulated through the function of the artefact.
- (v) Matter or a material part of a composite subject which has the relevant form or capacity as cause.
- (vi) *Per se* compounds, whose cause is identical with the cause of the relevant attribute that holds *per se* of its proper subject.

By contrast, I suggest that the following kinds of entities do not have a causal essence:

- (i) Genera that are not *infima species*, which have no form as their cause.
- (ii) Accidental compounds, whose cause is not scientifically knowable.

²¹³ Thanks to Béatrice Lienemann for pressing me on this point.

- (iii) Trans-categorical entities, which are too abstract to have a scientifically knowable cause.²¹⁴
- (iv) Entities capable of functioning as higher-order predicates, which are likewise too abstract to have a scientifically knowable cause.

Part II proceeds as follows. In Chapter 4, I argue that Aristotle's notion of causal essence originates in his own response to the question 'What is the principle, or what are the principles, of something?'. I then examine the two fundamental moves he makes in developing this notion in *Posterior Analytics*. In Chapter 5, I investigate the philosophical motivation for the causal essence of attributes in *Posterior Analytics* II 8. Finally, in Chapter 6, drawing on *Metaphysics* Z 17, Z 10–11, and *De Anima*, I examine the philosophical motivation for the causal essence of subjects, distinguishing between composite subjects and simple subjects, namely forms.

²¹⁴ It is certainly true that there may be a scientifically knowable cause for an instance of motion, but it is hard to imagine what the cause of motion *qua* motion is, given that different kinds of motion have different kinds of causes.

4. The Notion of Causal Essence

In this chapter, I first argue that the notion of causal essence originates in Aristotle's response to the question 'What is the principle, or what are the principles, of something?' (4.1). I then examine the two fundamental moves Aristotle makes in developing the notion of causal essence in *Posterior Analytics*. These are, first, the identification of the inquiry into 'what it is' with that into 'why it is' and, second, the distinction between subjects and attributes. Both moves are introduced in *Posterior Analytics* II 2 (4.2). The distinction between subjects and attributes is further refined in II 9 (4.3) through the distinction between immediate entities and entities that possess a middle term.

4.1. The Origin of the Notion of Causal Essence

I argue that the notion of causal essence originates in Aristotle's response to the question 'what is the principle, or what are the principles, of something?'. This can be seen, for instance, from the following *aporia* in *Metaphysics* B 3, 998^a20–998^b14, where Aristotle considers two competing accounts of the principle or principles of something:

Where these issues are concerned, then, there is much *aporia* both concerning the way we should put things in order to hit on the truth, and concerning the principles, namely, whether it is the genera that we should take to be elements and principles or, rather, the primary

components present in each thing. [...] But then neither is it possible to speak of the principles in both ways. For the account of essence is one, whereas the definition by means of genera will be distinct from the definition that states the components present in a thing.²¹⁵

In this *aporia*, he presents two competing answers to the question ‘what is the principle, or what are the principles, of something?’, where a thing (*to on*) is a particular called after its species (cf. *Metaph.* B 3, 998^b7–8). According to one view, represented by Platonists, a thing has its genera as its principles. According to the other, represented by Pre-Socratics, the principles of something are its primary material components. Aristotle suggests that, although each view has its merit, neither provides an adequate answer on its own.

The difficulty with the Platonic view is that a genus, precisely because it is common to many particulars, cannot be a principle of any particular thing.²¹⁶ By contrast, according to the Pre-Socratic approach, we would not possess stable knowledge about principles of particulars, given that primary material components undergo generation and corruption.

Aristotle does not explicitly resolve this *aporia* in *Metaphysics* B. However, if we turn to *Metaphysics* Z, his answer can be summarized as follows: ‘The principle of something is one rather than many and is the cause of the thing’s being’.

²¹⁵ *Metaph.* B 3, 998^a20–^b14, trans. C. D. C. Reeve 2016, slightly modified: Περί τε τούτων οὖν ἀπορία πολλή πῶς δεῖ θέμενον τυχεῖν τῆς ἀληθείας, καὶ περὶ τῶν ἀρχῶν πότερον δεῖ τὰ γένη στοιχεῖα καὶ ἀρχὰς ὑπολαμβάνειν ἢ μᾶλλον ἐξ ὧν ἐνυπαρχόντων ἐστὶν ἕκαστον πρῶτων, [...] —ἀλλὰ μὴν οὐδὲ ἀμφοτέρως γε οἷόν τε λέγειν τὰς ἀρχάς. ὁ μὲν γὰρ λόγος τῆς οὐσίας εἷς· ἕτερος δ’ ἔσται ὁ διὰ τῶν γενῶν ὀρισμὸς καὶ ὁ λέγων ἐξ ὧν ἔστιν ἐνυπαρχόντων.

²¹⁶ In *Metaphysics* Z 13, Aristotle explicitly states that what is universal to multiple things is not the substance of anything.

We see that Aristotle's account preserves the merits of both approaches while avoiding their demerits. On the one hand, he agrees with the Platonists that particulars are scientifically known through the account of their *infima species*. On the other hand, he rejects the identification of the parts of a logical definition with the principles of each thing. Instead, he identifies the cause stated in a causal definition as the principle of something. Unlike a genus, the cause inheres in a particular thing and is ontologically peculiar to it. At the same time, insofar as the forms of the particulars under the same *infima species* are indistinguishable in account, a particular cause can itself be considered universally and known through a common account.

One may object that the claim that a particular thing has only one cause of being is difficult to reconcile with Aristotle's doctrine of four causes. My response is twofold.

First, not every bearer of causal essence involves all four causes. For example, a mathematical entity has neither efficient cause nor final cause. Accordingly, the doctrine of the four causes does not require that every entity possess all four kinds of causes.

Second, in the case of natural substances, Aristotle explicitly maintains that the formal, final, and efficient causes refer to, in most cases, one and the same entity.²¹⁷ Ontologically, these are not three distinct entities, but three aspects of a single entity considered under different explanatory roles. They correspond to the different ways in which the cause of being functions: as the form of the thing, as the end for the sake of which it exists, and, in some cases, as from which it comes to be. By contrast, matter

²¹⁷ See *Phy.* II 7, 198^a24–7: ἔρχεται δὲ τὰ τρία εἰς [τὸ] ἓν πολλάκις· τὸ μὲν γὰρ τί ἐστὶ καὶ τὸ οὗ ἕνεκα ἓν ἐστὶ, τὸ δ' ὅθεν ἢ κίνησις πρῶτον τῷ εἶδει ταῦτο τούτοις· ἄνθρωπος γὰρ ἄνθρωπον γεννᾷ. For a recent discussion on the relation between the formal cause and the final cause, see Rosen 2014.

is not the cause of the thing's being and does not count as a principle of it. Consequently, the cause of being is the entity that may function as the formal cause, the final cause, and the efficient cause. There is therefore no inconsistency between the claim that a thing has a single principle or cause of being and Aristotle's doctrine of four causes.

I conclude, therefore, that the notion of causal essence originates in Aristotle's response to the question 'What is the principle, or what are the principles, of something?'. In this respect, causal essence differs fundamentally from logical essence. Whereas logical essence is the principle of demonstrations, causal essence identifies the cause that is the principle of the thing itself.

4.2. Two Fundamental Moves concerning Causal Essence in *Posterior Analytics* II 2

In the following, I turn to Aristotle's development of the notion of causal essence in *Posterior Analytics*. There, we find two fundamental moves concerning the notion of causal essence. The first is the identification of the inquiry into 'what it is' with that into 'why it is'. The second is the distinction between subjects and attributes. I propose that these two moves are introduced in *Posterior Analytics* II 2. Later in *Posterior Analytics* II 9, the distinction between subjects and attributes is further refined through the distinction between immediate entities and entities with a middle term.

Before examining *Posterior Analytics* II 2, however, it is necessary to recall the four objects of inquiry distinguished in *Posterior Analytics* II 1. With respect to these four objects, I follow the now widely accepted reconstruction:

The fact: ‘Whether *P* holds of *S*?’

The reason why: ‘Why *P* holds of *S*?’

Whether it is: ‘Whether *S* exists?’

What it is: ‘What is *S*?’²¹⁸

Whereas *Posterior Analytics* II 1 is primarily concerned with distinguishing these four objects of inquiry, II 2 focuses on the relations among them.

On the one hand, Aristotle groups together ‘the fact’ and ‘whether it is’, describing the former as ‘whether it is partially (*epi merous*)’, and the latter as ‘whether it is without qualification (*haplōs*)’. Both inquiries concern ‘whether there is a middle term (*meson*)’. While ‘whether it is partially’ searches for the middle term for an attribute’s belonging to its proper subject, ‘whether it is without qualification’ searches for the middle term for the existence of a subject.

On the other hand, Aristotle groups together ‘the reason why’ and ‘what it is’. He characterizes the former as ‘why an attribute holds of some subject’ and the latter as ‘why it is without qualification (*haplōs*)’. Correspondingly, both inquiries concern ‘what the middle term is’, either with respect to an attribute’s holding of a subject or to

²¹⁸ See Goldin 1996, 17; Bronstein 2016, 75. Barnes 1993, 203 reconstructs the four objects of inquiry as follows: ‘if *S* is *P*’, ‘why *S* is *P*’, ‘if there is such a thing as *S*’, ‘what *S* is’. I find this reconstruction unsatisfactory, since a scientific proposition does not necessarily take the form ‘*S* is *P*’, where *P* is the linguistic predicate of *S*. For example, we may say that ‘the extinction of fire holds of the cloud’, but not that ‘the cloud is the extinction of fire’. Likewise, we may say that ‘the line holds of the triangle’, but not that ‘the triangle is the line’.

the being of a subject.²¹⁹ According to Aristotle, the middle term is the cause of being (*aition tou einai*), for both the subjects and the attributes:

Thus, it results that in all our searches we seek either whether there is a middle term (*ei esti meson*) or what the middle term is (*ti esti meson*). For the middle term is the cause, and in all cases, it is the cause which is being sought. Is it eclipsed? —Is there some cause or not? After that, having come to know that there is one, we seek what it is. For the cause of its being not this or that but without qualification (*haplōs*), or of its being not without qualification but one of its attributes, either *per se* or accidental —this is the middle term.²²⁰

So, as we say, to know what it is is the same as to know why it is—either without qualification (*haplōs*) and not of the attributes (*mē tōn huparchotōn ti*), or of the attributes

²¹⁹ See *An. post.* II 2, 89^b37–90^a14. Bronstein 2016, 90 note 2 observes that Aristotle’s terminology undergoes an important shift from *Posterior Analytics* II 1 to II 2. First, whereas in II 1, *to hoti* applies to an attribute and *ei esti* to a subject, in II 2, these two expressions are used interchangeably, with the distinction instead marked by the qualifications *epi merous* and *haplōs*. Second, whereas in II 1, *to dioti* applies to an attribute and *ti esti* to a subject, in II 2, Aristotle identifies these two inquiries. The distinction between attribute and subject is now expressed by the following qualifications: *μὴ ἀπλῶς ἀλλὰ τι τῶν καθ’ αὐτὸ ἢ κατὰ συμβεβηκός/τῶν ὑπαρχόντων* and *μὴ τοδὶ ἢ τοδὶ ἀλλ’ ἀπλῶς/ἀπλῶς καὶ μὴ τῶν ὑπαρχόντων τι* (see *An. post.* II 2, 90^a9–11, 22–3). For this point, see also Ross 1949, 610; Barnes 1993, 203; Goldin 1996, 19–20.

²²⁰ *An. post.* II 2, 90^a5–11, trans. Barnes 1993, slightly modified: *συμβαίνει ἄρα ἐν ἀπάσαις ταῖς ζητήσεσι ζητεῖν ἢ εἰ ἔστι μέσον ἢ τί ἐστι τὸ μέσον. τὸ μὲν γὰρ αἷτιον τὸ μέσον, ἐν ἅπασιν δὲ τοῦτο ζητεῖται. ἄρ’ ἐκλείπει; ἄρ’ ἔστι τι αἷτιον ἢ οὐ; μετὰ ταῦτα γνόντες ὅτι ἔστι τι, τί οὖν τοῦτ’ ἔστι ζητοῦμεν. τὸ γὰρ αἷτιον τοῦ εἶναι μὴ τοδὶ ἢ τοδὶ ἀλλ’ ἀπλῶς, ἢ τοῦ μὴ ἀπλῶς ἀλλὰ τι τῶν καθ’ αὐτὸ ἢ κατὰ συμβεβηκός, τὸ μέσον ἐστίν. Following Barnes 1993, 48, I omit τὴν οὐσίαν where Ross 1964 reads τὸ γὰρ αἷτιον τοῦ εἶναι μὴ τοδὶ ἢ τοδὶ ἀλλ’ ἀπλῶς [τὴν οὐσίαν] in 90^a9–10.*

(*tōn huparchontōn*), for instance, that it has its interior angles equal to two right angles, or that it is greater or less.²²¹

Immediately afterwards, Aristotle briefly but explicitly clarifies the distinction between subjects and attributes:

By “[to be] without qualification” I mean the underlying subject (for instance, the moon or the earth or the sun or a triangle), and by “[to be] something” I mean eclipse, equality, inequality, whether it is in the middle or not.²²²

According to Aristotle, the middle term is the cause of being, both of a subject and an attribute. The being of an attribute can be analyzed in terms of its holding of its proper subject. Consequently, the cause of its being will function as the middle term in the demonstration establishing ‘that it is’ of that attribute. Consider the case of thunder. The being of thunder can be analyzed as noise’s holding of the cloud. The cause of this fact is ‘the extinction of fire’, which therefore serves as the middle term in the corresponding demonstration:

Noise holds of the extinction of fire;

The extinction of fire holds of the cloud;

²²¹ *An. post.* II 2, 90^a31–4, trans. Barnes 1993: “ὡςπερ οὖν λέγομεν, τὸ τί ἐστὶν εἰδέναι ταυτό ἐστι καὶ διὰ τί ἔστιν, τοῦτο δ’ ἢ ἀπλῶς καὶ μὴ τῶν ὑπαρχόντων τι, ἢ τῶν ὑπαρχόντων, οἷον ὅτι δύο ὀρθαί, ἢ ὅτι μεῖζον ἢ ἔλαττον.

²²² *An. post.* II 2, 90^a12–4, modified: λέγω δὲ τὸ μὲν ἀπλῶς τὸ ὑποκείμενον, οἷον σελήνην ἢ γῆν ἢ ἥλιον ἢ τρίγωνον, τὸ δὲ τί ἔκλειψιν, ἰσότητα ἀνισότητα, εἰ ἐν μέσῳ ἢ μὴ.

Noise holds of the cloud.

The case of subjects, however, presents a difficulty. Strictly speaking, the being of a subject cannot be analyzed into an attribute's belonging to a subject and therefore cannot be demonstrated.²²³ It is therefore puzzling why Aristotle describes the cause of a subject's being as a middle term.

I propose that the expression 'middle term' here in *Posterior Analytics* II 2 should not be understood in the technical sense, namely, as the middle term of a deduction or a demonstration. Rather, it should be understood more broadly as referring to a 'scientifically knowable cause',²²⁴ whether or not that cause functions as the middle term in an actual deduction.²²⁵ On this interpretation, the notion of 'middle term' serves

²²³ This is at least true in the context of *Posterior Analytics*, where hylomorphism is not applied to analyze a composite subject. For this difficulty, see Ross 1949, 612; Barnes 1993, 205; Goldin 1996, 25–7. Some scholars have argued that, in *Metaphysics* Z 17, the inquiry into 'why it is' of a subject can also be reconstructed as a demonstration in which the cause of the subject, namely, its form, functions as the middle term. Later, however, I shall argue that the inquiry into 'why it is' of a subject cannot be reconstructed as a demonstration and that the cause of a subject, namely its form, cannot function as a middle term in the technical sense, even within the hylomorphic framework of *Metaphysics* Z 17.

²²⁴ The same view is also adopted by Christoph Helmig (in conversation). See also Goldin 1996, 39, who proposes interpreting 'the middle term' as 'some feature of the world that is responsible for the fact that there are things of that kind'.

²²⁵ One may object that, even if the cause or the 'what it is' of a subject cannot function as the middle term in a demonstration establishing 'that it is' of the subject, it may nevertheless serve as the middle term in demonstrations establishing that certain attributes hold *per se* of the subject. I do not think that this is the case. In such demonstrations, the middle term is a part of the logical essence, namely, a genus or a specific difference of the subject, not the cause in the causal essence. By contrast, Deslauriers 2007, 46 and Bronstein 2016, 97 argue that what I call 'logical definition' of a subject already expresses the cause of its being.

to distinguish entities which possess a scientifically knowable cause from those which do not.

Given Aristotle's identification of the inquiry into 'what it is' with that into 'why it is', modern scholarship has investigated the relation between them.²²⁶ Charles 2000 argues that the search for essence and that for cause are interdependent.²²⁷ On this view, a sufficient definition is necessarily causal and must state the cause of the *definiendum*'s being. More specifically, Charles denies that what I call a logical definition is a sufficient definition. Instead, he maintains that a sufficient definition includes not only genus and specific differences, but also the cause, where genus and specific differences are *explananda* and the cause is *explanans*.²²⁸

More recently, Ge 2025 has challenged Charles's thesis by arguing that the relation between the search for essence and that for cause is not one of unqualified interdependence. I shall not attempt here to assess the success of Ge's criticism. What is significant for my purposes is that, despite their disagreement, Ge shares Charles's assumption that all sufficient definitions are causal. He therefore does not recognize a notion of logical essence that is independent of cause. This is evident from his claim that the definition reached by division in *Metaphysics* Z 12 is insufficient and must be supplemented by the investigation of cause in Z 17.²²⁹

I suggest that this shared assumption is motivated by Aristotle's identification of the inquiry into 'what it is' and that into 'why it is'. But does this identification really entail that every definition is causal and must explicitly state the cause of the

²²⁶ Thanks to Christoph Helmig for pressing me to argue in more detail with respect to this debate.

²²⁷ See Charles 2000, 245–65.

²²⁸ See Charles 2000, 245–7.

²²⁹ See Ge 2025, 182–3.

definiendum's being? I argue that it does not. Only what I call a causal definition explicitly identifies the cause of being. A logical definition, by contrast, need only state the essential predicates of the *definiendum*, without explicitly identifying its cause.

Should we therefore conclude that the identification of 'what it is' and 'why it is' applies only to causal essence and causal definition? The answer is not straightforward. In a loose sense, a logical definition may also be said to answer the question 'why it is'. As I shall argue in Chapter 7, the final specific difference in a logical definition is ontologically based on the cause expressed in a causal definition. Consequently, insofar as a logical definition states the final specific difference, it also indicates the cause, albeit only implicitly and indirectly. Nevertheless, such a definition is not itself 'causal', since it does not explicitly state the cause of the *definiendum*'s being. Because the 'why it is' in *Posterior Analytics* II 2 concerns an explicit statement of cause, I hesitate to extend Aristotle's identification of 'what it is' and 'why it is' to logical definitions without qualification. At any rate, in *Posterior Analytics* II 2, all instances of definition are causal definitions.

We can now see how Aristotle connects the search for essence and the search for cause. In the case of attributes, the existence of an attribute can be analyzed in terms of its belonging to its proper subject. The cause of that attribute's being therefore functions as the middle term in the demonstration establishing that attribute exists. In this way, Aristotle anticipates the idea that the causal essence of an attribute should be grasped through demonstration. The case of subjects, however, is markedly different. Aristotle's claim that we may also inquire 'why it is' of a subject indicates that subjects also possess a causal essence. Yet, because the existence of a subject cannot be analyzed into some attribute's holding of its proper subject, its causal essence cannot

be grasped through demonstration. Here Aristotle is silent on how the causal essence of a subject should be grasped. The silence is understandable given that in *Posterior Analytics*, we only need the logical definitions of subjects that function as the principles of demonstrations. The causal definitions of attributes are relevant in *Posterior Analytics* because they are shown through demonstration, as Aristotle argues in *Posterior Analytics* II 8. The causal definition of a subject, however, plays no role in demonstrative science as presented. Its investigation therefore belongs to a different context, namely *Metaphysics* Z 17.²³⁰

4.3. Refinement of the Distinction between Subjects and Attributes in *Posterior Analytics* II 9

In *Posterior Analytics* II 2, Aristotle distinguishes between subjects and attributes, both of which possess a ‘middle term’ in the broad sense of a ‘scientifically knowable cause’. Later in *Posterior Analytics* II 9, he further refines this distinction by distinguishing the immediate entities (*ta amesa*) from the entities with a middle term (*meson*):

Of some things there is something else which is their cause, of others there is not. Hence it is plain that of the entities [of which we ask] ‘what it is’,²³¹ some are immediate and

²³⁰ This account bears on the debate over whether Aristotle discusses definition in its own right in *Posterior Analytics*. As it turns out, I follow the view that in *Posterior Analytics*, Aristotle discusses definition only insofar as definition is relevant to demonstration. For this view, see Eustratius, in *An. post.* 2.19–22. More recently, Antonio Ferro also defends a version of this view in one of his talks.

²³¹ The Greek at 93^b22 reads: δῆλον ὅτι καὶ τῶν τί ἐστὶ τὰ μὲν ἄμεσα καὶ ἀρχαί εἰσιν. Most commentators take τῶν τί ἐστὶ to refer to the what-it-is or the essences of things and accordingly

principles; and here you must suppose, or make clear in some other way, both “that it is” and “what it is”. (Arithmeticians do this: they suppose both what unit is and that it is.) But with the entities that have a middle term and have something else as the cause of the being (*tēs ousias*),²³² you can, as we have said, show the what-it-is through a demonstration without demonstrating it.²³³

Here Aristotle distinguishes between two kinds of entities of which we ask ‘what it is’: immediate entities and those with a middle term. With respect to the former, Aristotle claims that we must either assume both ‘that it is’ and ‘what it is’ or make them clear in a way other than demonstration. By contrast, with respect to the latter, we can show ‘what it is’ of them through a demonstration. This shows that ‘the middle term’ in this context should be understood in its technical sense.

Which entities belong to these two classes? In the passage just quoted, Aristotle gives the unit, a primary and simple subject, as an example of an immediate entity. By

understand Aristotle as dividing essences into two kinds. See, for instance, Ross 1949, 633; Barnes 1993, 58; Detel 1993, 69; Mignucci 2007, 111; Deslauriers, 2007, 51; Bronstein 2016, 136. Although this rendering is initially attractive, it sits uneasily with Aristotle’s subsequent formulation. He immediately claims that, in the case of the immediate entities, both ‘that it is’ and ‘what it is’ must either be assumed or made clear in a way other than demonstration. Such language naturally concerns the objects of which we ask ‘what it is’, for it is awkward to speak of ‘that it is’ and ‘what it is’ of an essence. I therefore propose taking τὼν τί ἐστι to mean ‘of the entities [of which we ask] what it is’.

²³² Charles 2000, 275, note 3 renders *ousia* as ‘substance’ and argues that composite substances such as man likewise have some other thing as their cause. By contrast, I argue that within the framework of *Posterior Analytics*, where Aristotle has not yet introduced hylomorphism to analyze a composite substance, substances have themselves as their cause.

²³³ *An. post.* II 9, 93^b21–8, trans. Barnes 1993, slightly modified: Ἔστι δὲ τῶν μὲν ἕτερόν τι αἴτιον, τῶν δ’ οὐκ ἔστιν. ὥστε δῆλον ὅτι καὶ τῶν τί ἐστι τὰ μὲν ἅμεσα καὶ ἀρχαί εἰσιν, ἃ καὶ εἶναι καὶ τί ἐστιν ὑποθέσθαι δεῖ ἢ ἄλλον τρόπον φανερά ποιῆσαι (ὅπερ ὁ ἀριθμητικὸς ποιεῖ· καὶ γὰρ τί ἐστι τὴν μονάδα ὑποτίθεται, καὶ ὅτι ἔστιν)· τῶν δ’ ἐχόντων μέσον, καὶ ὧν ἔστι τι ἕτερον αἴτιον τῆς οὐσίας, ἔστι δι’ ἀποδείξεως, ὥσπερ εἵπομεν, δηλῶσαι, μὴ τὸ τί ἐστιν ἀποδεικνύοντας.

contrast, we may suppose that attributes like thunder and eclipse, insofar as the what-it-is of these entities can be shown through a demonstration, belong to the latter kind. The remaining question concerns non-primary subjects such as man and triangle. Should they also be regarded as immediate entities, or are they entities with a middle term?

I follow the widely accepted view that both primary and non-primary subjects are immediate entities.²³⁴ By contrast, some scholars, drawing on Aristotle's discussion of the inquiry of 'why it is' of a composite subject in *Metaphysics Z* 17, argue that composite subjects or non-primary subjects like man and triangle have their form or cause as the middle term.²³⁵ I argue against this view on the basis of the following two arguments.

First, the doctrine in *Metaphysics Z* 17 should not be imported into *Posterior Analytics* II 9, since hylomorphism is not applied to analyze a composite subject in *Posterior Analytics*. This is evident from *Posterior Analytics* I 4, 73^b5–10, where Aristotle maintains that a substance, whether primary or non-primary, is what it just is not in virtue of being something different:

Again, certain things are not said of some other underlying subject: for instance, whereas the walking is walking in virtue of there being something different and so the white is white, substance (*ousia*), that is, whatever signifies this something (*tode ti*), is what it just is (*hoper*

²³⁴ See Ross 1949, 633; Goldin 1996, 126–36; Deslauriers 2007, 61–2; Bronstein 2016, 135–8. One problematic case is triangle, which, according to *An. post.* I 1, 71^a11–17, is not among the things for which we suppose both 'that it is' and 'what it is'. See also *An. post.* II 7, 92^b15–16, where Aristotle states that while a geometer assumes what 'triangle' means, he proves (*deiknunai*) 'that it is'. However, since this is just a report of what geometers do, it does not necessarily express Aristotle's own view.

²³⁵ See Charles 2000, 275, note 3.

estin) not in virtue of there being something different. Whereas the things which are not said of a subject I call them *per se* (*kath' hauta*), and those which are said of a subject I call accidents.²³⁶

In this passage, Aristotle contrasts substances with attributes. Whereas a substance is what it just is (*hoper estin*) in virtue of itself or *per se*, an attribute is what it just is in virtue of there being something different, that is, its proper subject. If Aristotle were already employing hylomorphism to analyze a composite subject in *Posterior Analytics*, he would claim that composite subjects are what they are in virtue of their forms, not in virtue of themselves.

If, therefore, the immediate entities in *Posterior Analytics* II 9 are subjects, the claim that the immediate entities have themselves as their cause implies that subjects likewise possess a causal essence. At this stage, however, we do not yet know how to articulate the causal essence of a subject except by mentioning its own name. That task is undertaken in *Metaphysics* Z 17, where Aristotle shows how the causal essence of a composite subject can be grasped through its form's holding of its matter.

We can now summarize Aristotle's notion of causal essence. I have argued, first, that it originates in Aristotle's response to the question 'What is the principle, or what are the principles, of something?'. Second, I have also shown that Aristotle makes two fundamental moves concerning the notion of causal essence in *Posterior Analytics*.

²³⁶ *An. post.* I 4, 73^b5–10, trans. Barnes 1993, modified: ἔτι ὁμῇ καθ' ὑποκειμένου λέγεται ἄλλου τινός, οἷον τὸ βαδίζον ἕτερόν τι ὃν βαδίζον ἐστὶ καὶ τὸ λευκὸν <λευκόν>, ἢ δ' οὐσία, καὶ ὅσα τότε τι σημαίνει, οὐχ ἕτερόν τι ὄντα ἐστὶν ὅπερ ἐστίν. τὰ μὲν δὴ μὴ καθ' ὑποκειμένου καθ' αὐτὰ λέγω, τὰ δὲ καθ' ὑποκειμένου συμβεβηκότα. For the view that this sense of *per se* does not characterize a kind of predication, but a kind of ontological entities, see Barnes 1993, 114–7. See also the parallel passage in *Metaphysics* Δ 18, 1022^a32–5.

These two moves are the identification of the inquiry into ‘what it is’ with that into ‘why it is’ and the distinction between subjects and attributes.

5. The Philosophical Motivation for the Causal Essence of an Attribute: Causal Explanation of an Attribute's Being

In Chapters 5 and 6, I shall argue that the philosophical motivation for causal essence lies in the articulation of essence through the causal explanation of the *definiendum*'s being. Chapter 5 focuses on the causal essence of attributes, whereas Chapter 6 deals with that of subjects.

In the present chapter, drawing on *Posterior Analytics* II 8, I shall argue that the causal essence of an attribute is motivated as a way of articulating essence through the causal explanation of the attribute's being. I begin by examining the two stages in grasping the causal essence of an attribute as described in *Posterior Analytics* II 8: the inquiry into 'whether it is' and that into 'why it is' (5.1). There I shall also suggest distinguishing between pure causal essence and impure causal essence of an attribute. After that, in 5.2, I offer an appendix showing how *Posterior Analytics* II 8–9 provides a positive solution to the *aporia* reached in *Posterior Analytics* II 7.

5.1. Grasping the Causal Essence of an Attribute: *Posterior Analytics* II 8

5.1.1. *The Inquiry into 'Whether It Is'*

As I have argued in Chapter 4, the inquiry into ‘what it is’ and ‘why it is’ presupposes knowledge of ‘that it is’. Accordingly, anyone seeking to grasp the causal essence of something must first establish ‘that it is’.

Concerning the inquiry into ‘whether it is’, Aristotle states that we may know ‘that it is’ either accidentally or by ‘grasping something of the object itself’:

But as to “whether it is”, sometimes we grasp this accidentally, and sometimes by grasping something of the object itself—for instance, of thunder, that it is a sort of noise in the clouds; of eclipse, that it is a sort of privation of light; of man, that he is a sort of animal; of soul, that it is something which moves itself. When we know accidentally “that it is”, necessarily we have no grasp on “what it is”; for we do not even know “that it is”, and to seek “what it is” without grasping “that it is” is to seek nothing. But when we grasp something of the object, the business is easier. Hence insofar as we grasp “that it is”, to that extent we also have some grasp on “what it is”.²³⁷

According to this passage, if we know ‘that it is’ merely accidentally, without grasping anything of the ‘what it is’, then we do not genuinely know ‘that it is’. In such a case, no further inquiry into ‘what it is’ or ‘why it is’ is possible, and the investigation reaches a dead end. By contrast, if we know ‘that it is’ non-accidentally, that is, by grasping

²³⁷ *An. post.* II 8, 93^a21–9, trans. Barnes 1993, slightly modified: τὸ δ’ εἰ ἔστιν ὅτε μὲν κατὰ συμβεβηκὸς ἔχομεν, ὅτε δ’ ἔχοντές τι αὐτοῦ τοῦ πράγματος, οἷον βροντὴν, ὅτι ψόφος τις νεφῶν, καὶ ἔκλειψιν, ὅτι στέρησις τις φωτός, καὶ ἄνθρωπον, ὅτι ζῷόν τι, καὶ ψυχὴν, ὅτι αὐτὸ αὐτὸ κινεῖν· ὅσα μὲν οὖν κατὰ συμβεβηκὸς οἶδαμεν ὅτι ἔστιν, ἀναγκαῖον μηδαμῶς ἔχειν πρὸς τὸ τί ἐστιν· οὐδὲ γὰρ ὅτι ἔστιν ἴσμεν· τὸ δὲ ζητεῖν τί ἐστὶ μὴ ἔχοντας ὅτι ἔστι, μηδὲν ζητεῖν ἐστιν. καθ’ ὅσων δ’ ἔχομεν τι, ῥᾶον. ὥστε ὡς ἔχομεν ὅτι ἔστιν, οὕτως ἔχομεν καὶ πρὸς τὸ τί ἐστιν.

something of the ‘what it is’, then we genuinely know ‘that it is’ and are thereby in a position to inquire ‘what it is’ and ‘why it is’.

At first sight, however, this appears paradoxical. If inquiry into ‘what it is’ and ‘why it is’ presupposes prior knowledge of ‘that it is’, how can we come to know ‘that it is’ by already grasping something of the ‘what it is’? For example, how can we know that thunder exists by knowing that it is some sort of noise in the clouds?

I suggest resolving this difficulty by distinguishing between a partial and a complete grasp of ‘what it is’. When Aristotle says that knowledge of ‘what it is’ and ‘why it is’ presupposes that of ‘that it is’, what he means by the former is the complete grasp of ‘what it is’, which also contains the statement of cause. When he claims that to grasp ‘that it is’ non-accidentally, we must already grasp something of the ‘what it is’, he means a non-causal part of ‘what it is’ that does not state the cause or ‘why it is’. By contrast, the causal part of ‘what it is’ or ‘why it is’ can only be grasped after we have known ‘that it is’.²³⁸

How, then, should this partial grasp of ‘what it is’ be characterized? Does it correspond to the so-called ‘nominal definition’ described in *Posterior Analytics* II 10, 93^b29–35?²³⁹

I argue that it does not. The grasp of a non-causal part of ‘what it is’ cannot be identified with a nominal definition, since it enables us to know ‘that it is’ non-accidentally. By contrast, someone who possesses only a nominal definition either does not know ‘that it is’ at all or knows it merely accidentally.²⁴⁰

²³⁸ See also Bronstein 2016, 93–4.

²³⁹ For the view that ‘some sort of noise in clouds’ is a nominal definition of thunder, see Demoss/Devereux 1988, 136; Bronstein 2016, 141–2.

²⁴⁰ See *An. post.* II 10, 93^b34–5: [...] ὅτι οὐδ’ εἰ ἔστιν ἢ μὴ ἴσμεν, ἀλλ’ ἢ κατὰ συμβεβηκός.

Instead, I propose that the grasp of a non-causal part of ‘what it is’ corresponds either to the definition that resembles a conclusion of a demonstration, or to the definition that is indemonstrable posit of the what–it–is in *Posterior Analytics* II 10. If the *definiendum* is an attribute, then the grasp of a non-causal part of the ‘what it is’ will be a definition that resembles a conclusion of a demonstration. By contrast, if the *definiendum* is a subject, then the partial grasp of ‘what it is’ is a definition that is an indemonstrable posit of what–it–is. It should be emphasized that, for immediate entities or subjects, both the partial and the complete grasp of ‘what it is’ are ‘indemonstrable posits of the what–it–is’.

5.1.2. *The Inquiry into ‘Why It Is’*

Recall that, according to *Posterior Analytics* II 2, to know ‘that it is’ is to know that there is a middle term that explains ‘that it is’, whereas to know ‘why it is’ is to know what that middle term is. Once we know non-accidentally that there is a middle term, we are in a position to inquire what that middle term is. The middle term selected in this inquiry, however, may or may not be explanatory of the fact in question. If the middle term is not explanatory, we will fail to know ‘why it is’ and thus fail to grasp the causal part of ‘what it is’. *A fortiori*, we will not attain a complete grasp of ‘what it is’. Aristotle illustrates such a case with the following example:

Otherwise, we know the fact but not the reason why: moon *C*, eclipse *A*, not being able to produce a shadow during full moon although nothing visible is between us and it *B*. If *B*, not being able to produce a shadow although nothing visible is between us and it, holds of

C, and *A*, being eclipsed, holds of *B*, then it is plain that it is eclipsed but not yet why; and we know that there is an eclipse but we do not know what it is.²⁴¹

In this example, ‘not being able to produce a shadow during full moon although nothing visible is between us and it’ is taken as the middle term. This middle term, however, is not the cause of eclipse but one of its effects. Accordingly, the resulting syllogism establishes only the fact of the eclipse, not its cause. We therefore know ‘that it is’, but not scientifically:²⁴² we do not know ‘why it is’, nor do we possess a complete grasp of ‘what it is’.

By contrast, if we identify the correct middle term, namely, the cause that explains why the attribute in question holds of its proper subject, then we know both ‘that it is’ scientifically and ‘why it is’. At the same time, we attain a complete grasp of ‘what it is’. Aristotle illustrates this point with the example of thunder:

What is thunder? Extinction of fire in cloud. Why does it thunder? Because the fire in the cloud is extinguished. Cloud *C*, thunder *A*, extinction of fire *B*. *B* holds of *C*, the cloud (the fire is extinguished in it); and *A*, noise, holds of *B*—and *B* is indeed an account of *A*, the first extreme.²⁴³

²⁴¹ *An. post.* II 8, 93^a36–^b3, trans. Barnes 1993: εἰ δὲ μή, τὸ ὅτι, τὸ διότι δ’ οὐ. σελήνη Γ, ἔκλειψις Α, τὸ πανσελήνου σκιὰν μὴ δύνασθαι ποιεῖν μηδενὸς ἡμῶν μεταξὺ ὄντος φανεροῦ, ἐφ’ οὗ Β. εἰ τοίνυν τῷ Γ ὑπάρχει τὸ Β τὸ μὴ δύνασθαι ποιεῖν σκιὰν μηδενὸς μεταξὺ ἡμῶν ὄντος, τούτῳ δὲ τὸ Α τὸ ἐκλείπειν, ὅτι μὲν ἐκλείπει δῆλον, διότι δ’ οὐπω, καὶ ὅτι μὲν ἔστιν ἔκλειψις ἴσμεν, τί δ’ ἐστὶν οὐκ ἴσμεν.

²⁴² For Ackrill 1981a, 365, this is knowledge of a scientific fact ‘in a weak sense’, in contrast to that ‘in a strong sense’ and is attained through demonstration. See also Ackrill 1981b, 101.

²⁴³ *An. post.* II 8, 93^b7–12, trans. Barnes 1993: τί ἐστὶ βροντή; πυρὸς ἀπόσβεσις ἐν νέφει. διὰ τί βροντᾷ; διὰ τὸ ἀποσβέννυσθαι τὸ πῦρ ἐν τῷ νέφει. νέφος Γ, βροντὴ Α, ἀπόσβεσις πυρὸς τὸ Β. τῷ δὲ Γ

In such a case, we can construct a demonstration of ‘that it is’ in which the middle term is the cause, the major term is the attribute or its general kind, and the minor term is the proper subject of which the cause holds. According to Aristotle, such a demonstration contains the same information as the definition of that attribute. The demonstration of ‘that it is’ of thunder can be constructed as follows:

Noise holds of the extinction of fire;

The extinction of fire holds of the cloud;

Noise holds of the cloud.

The major term could, in principle, be the attribute itself, namely, thunder. Indeed, in the passage just quoted, Aristotle initially identifies A as ‘thunder’, but subsequently as ‘noise’. It is preferable, however, to take noise, the general kind under which thunder falls, as the major term. If thunder itself were used as the major term, the definition reconstructed through the demonstration would be circular in that it mentions the *definiendum* itself.

5.1.3. *Pure Causal Essence and Impure Causal Essence of an Attribute*

τῷ νέφει ὑπάρχει τὸ Β (ἀποσβέννυται γὰρ ἐν αὐτῷ τὸ πῦρ), τούτῳ δὲ τὸ Α, ψόφος· καὶ ἔστι γε λόγος τὸ Β τοῦ Α τοῦ πρώτου ἄκρου.

In the preceding section, the causal definition of thunder was given as ‘noise in the cloud because of the extinction of fire’. This definition does not merely state the cause of thunder; it also includes the proper subject of both the attribute and its cause, ‘cloud’, and a general kind under which thunder falls, ‘noise’. I shall refer to this kind of definition as an ‘impure causal definition’, in contrast to a ‘pure causal definition’, which only states the cause. Correspondingly, what is revealed in each case is the ‘impure causal essence’ and the ‘pure causal essence’ of the *definiendum*. Although Aristotle usually presents the impure causal definition of thunder, he also indicates, at *Posterior Analytics* II 8, 93^b12, that the middle term alone, that is, ‘the extinction of fire’, is the ‘account’ (*logos*) of thunder.²⁴⁴

This suggests that the cause is the core constituent of a causal definition,²⁴⁵ while the remaining elements are included only when required by the context. Thus, from the perspective of a natural philosopher, the causal definition of a natural substance should mention not only the cause but also the proper subject of which both the attribute and its cause hold. From the perspective of a metaphysician, by contrast, a causal definition only states the cause. Later in 6.2, I shall argue that a parallel distinction between pure and impure causal essence can likewise be drawn in the case of composite subjects.

5.2. Conclusion

²⁴⁴ See *An. post.* II 8, 93^b12: καὶ ἔστι γε λόγος τὸ Β τοῦ Α τοῦ πρώτου ἄκρου.

²⁴⁵ For the view that the causal part of a definition is ‘dominant’, see Peramatzis 2024, 172. See also Charles 2000, 247; Bronstein 2016, 98.

I have just shown that the philosophical motivation for the notion of causal essence of an attribute lies in the articulation of essence through the causal explanation of the attribute's being. In the case of an attribute, the cause is what explains why that attribute holds of its proper subject. Moreover, given that one can define an attribute either from the perspective of a metaphysician or a natural philosopher, the corresponding causal essence may include only the cause or both the cause and the proper subject. This leads to the distinction between pure and impure causal essence.

5.3. Appendix: *Posterior Analytics* II 8–9 as a Resolution of the *aporia* in II 7

In *Posterior Analytics* II 3–7, Aristotle examines a series of puzzles concerning how ‘what it is’ may be known, and whether it can be deduced and demonstrated.²⁴⁶ At the end of II 7, he summarizes the results arrived at in *Posterior Analytics* II 3–7:

From these considerations it appears (1) that definition and deduction are not the same, and (2) that there cannot be both deduction and definition of the same thing; and further (3) that definition neither demonstrates nor shows anything, and (4) that it is not possible to know the what-it-is either by a definition or by a demonstration.²⁴⁷

²⁴⁶ For a recent discussion on Aristotle's approach and arguments in *Posterior Analytics* II 3–7, see Castelli 2019.

²⁴⁷ *An. post.* II 7, 92^b35–8, trans. Barnes 1993, slightly modified: Ἐκ μὲν τοίνυν τούτων οὔτε ὁρισμὸς καὶ συλλογισμὸς φαίνεται ταὐτὸν ὄν, οὔτε ταὐτοῦ συλλογισμὸς καὶ ὁρισμός· πρὸς δὲ τούτοις, ὅτι οὔτε ὁ ὁρισμὸς οὐδὲν οὔτε ἀποδείκνυσιν οὔτε δείκνυσιν, οὔτε τὸ τί ἐστὶν οὔθ' ὁρισμῷ οὔτ' ἀποδείξει ἔστι γινῶναι.

Among these four points, (1) and (2) are arrived at in *Posterior Analytics* II 3–6, whereas (3) and (4) emerge only in *Posterior Analytics* II 7. According to *Posterior Analytics* II 8, 93^a1–2, some of these points are well said (*legetai kalōs*), but some are not. I propose that while (1) and (2) are accepted by Aristotle and ‘well said’, (3) and (4) are not ‘well said’ and should be revised or rejected.

The conclusion (3) is developed throughout most of II 7 and rests on three claims. First, definition does not show the what–it–is (92^b4–18). Second, definition does not establish ‘that it is’ (92^b19–25). Third, definition does not show ‘what the name means’ (92^b26–34). Of these, the latter two are not problematic. The first claim, together with the conclusion (4), is arrived at by the following argument in II 7, 92^b4–18:

Again, how will you show the what–it–is? (a) Anyone who knows what a man or anything else is must also know that it is. Of that which does not exist, no one knows what it is. You may know what the account or the name means when I say “goat–stag”, but it is impossible to know what a goat–stag is. (b) But if you are to show what it is and also that it exists, how will you show them by the same account (*tō[i] autō[i] logō[i]*)? The definition makes a single thing plain, and so does the demonstration; but what a man is and that a man exists are different. (c) Next, we say that everything which a thing is must be proved through a demonstration except its essence (*ousia*). But the existence (*to einai*) is not the essence of anything; for being is not a genus. Therefore, there will be a demonstration of ‘that it is’. And this is what the sciences as a matter of fact do: a geometer assumes what triangle means and proves that triangles exist. What will a definer show if not what triangle is? But

then he will show by the definition what it is and yet not know whether it exists; and this is impossible.²⁴⁸

This argument rests on three assumptions. First, as indicated by (a), knowledge of ‘what it is’ presupposes that of ‘that it is’, an assumption explicitly endorsed by Aristotle in II 2. Second, as indicated by (b), the same account cannot show both ‘that it is’ and the what–it–is. This assumption is revised in *Posterior Analytics* II 8. While it is true that definition itself cannot show both ‘that it is’ and ‘what it is’, Aristotle has in fact argued in *Posterior Analytics* II 8 that a demonstration can show both ‘that it is’ and ‘what it is’ of an attribute. Third, as indicated by (c): ‘that it is’ must be known through a demonstration. This assumption is revised in *Posterior Analytics* II 9, where Aristotle argues that only ‘that it is’ of an attribute is to be known through a demonstration. By contrast, ‘that it is’ of the immediate entities must instead be assumed or made clear in some other way than demonstration. When the second and third assumptions fail, this argument can no longer be sustained.

Thus, in *Posterior Analytics* II 8–9, Aristotle argues that a definition shows the what–it–is, either of a subject or of an attribute, and that what–it–is of an attribute can be known through both a definition and a demonstration. As a rejection of (3) and (4),

²⁴⁸ *An. post.* II 7, 92^b4–18, trans. Barnes 1993, modified: Ἐτι πῶς δείξει τὸ τί ἐστίν; ἀνάγκη γὰρ τὸν εἰδόμενον τὸ τί ἐστίν ἄνθρωπος ἢ ἄλλο ὅτιον, εἰδέναι καὶ ὅτι ἐστίν (τὸ γὰρ μὴ ὄν οὐδεὶς οἶδεν ὅτι ἐστίν, ἀλλὰ τί μὲν σημαίνει ὁ λόγος ἢ τὸ ὄνομα, ὅταν εἴπω τραγέλαφος, τί δ’ ἐστὶ τραγέλαφος ἀδύνατον εἰδέναι). ἀλλὰ μὴν εἰ δείξει τί ἐστὶ καὶ ὅτι ἐστὶ, πῶς τῷ αὐτῷ λόγῳ δείξει; ὃ τε γὰρ ὁρισμὸς ἐν τι δηλοῖ καὶ ἡ ἀπόδειξις· τὸ δὲ τί ἐστίν ἄνθρωπος καὶ τὸ εἶναι ἄνθρωπον ἄλλο. Εἴτα καὶ δι’ ἀποδείξεώς φαμεν ἀναγκαῖον εἶναι δείκνυσθαι ἅπαν ὃ τί ἐστίν, εἰ μὴ οὐσία εἴη. τὸ δ’ εἶναι οὐκ οὐσία οὐδενί· οὐ γὰρ γένος τὸ ὄν. ἀπόδειξις ἄρ’ ἔσται ὅτι ἐστίν. ὅπερ καὶ νῦν ποιοῦσιν αἱ ἐπιστῆμαι. τί μὲν γὰρ σημαίνει τὸ τρίγωνον, ἔλαβεν ὁ γεωμέτρης, ὅτι δ’ ἐστὶ, δείκνυσιν. τί οὖν δείξει ὁ ὁριζόμενος ἢ τί ἐστὶ τὸ τρίγωνον; εἰδὼς ἄρα τις ὁρισμὸν τί ἐστίν, εἰ ἔστιν οὐκ εἴσεται. ἀλλ’ ἀδύνατον.

Posterior Analytics II 8–9 thus offer a positive resolution of the *aporia* reached at the end of II 7.

6. The Philosophical Motivation for the Causal Essence of a

Subject: Causal Explanation of a Subject's Being

The preceding chapter showed that the philosophical motivation for the notion of causal essence of an attribute consists in the articulation of essence through the causal explanation of the attribute's being. The present chapter argues that the same applies to subjects: the philosophical motivation for the notion of causal essence of a subject is the articulation of essence through the causal explanation of the subject's being.

From the preceding chapter, we know that Aristotle acknowledges in *Posterior Analytics* that subjects possess a scientifically knowable cause. However, he does not explicitly state there how their causal essences are to be articulated. This chapter argues that the answer is to be found in *Metaphysics Z 17*, where the causal essence of a composite subject is articulated within the hylomorphic framework. Besides, it proposes that, on the basis of *Metaphysics Z 10–11*, that the causal essence of a composite can be pure or impure.²⁴⁹ I begin by examining Aristotle's account of how to grasp the causal essence of a composite subject in *Metaphysics Z 17*. I then turn to the distinction between pure causal essence and impure causal essence of a composite subject in *Metaphysics Z 10–11*.

²⁴⁹ For discussions of the different approaches to the definition of composite subjects in *Posterior Analytics* and *Metaphysics Z 17*, see, for example, Ross 1949, 612; Goldin 1996, 28–36; Charles 2000, 86 with note 19; Peramatzis 2023, 247–8.

6.1. Grasping the Causal Essence of a Composite Subject: *Metaphysics Z*

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With regard to the inquiry into ‘why it is’ of a composite subject, Aristotle suggests that, just as in the case of attributes, we must ask why one thing holds of or is said of another thing:

It is when something is [said] of something, then, that we inquire into why it belongs to that thing (but that it does belong must be clear, since if things are not that way, there is nothing to inquire into). For example: “Why does it thunder?” is “Why is there noise in the clouds?” For this way what we are inquiring into is one thing’s being said of another. And why are these—for example, brick and stones—a house? It is evident, accordingly, that we are inquiring into the cause. This is the what–it–is–to–be, as one says in a general way.²⁵⁰

In the case of attributes, the relevant predicative structure is straightforward: an attribute is said of its proper subject. For example, in the case of thunder, noise is said of the clouds. To inquire ‘why thunder exists’ is just to inquire ‘why noise holds of the clouds’.

²⁵⁰ *Metaph. Z* 17, 1041^a23–8, trans. C. D. C. Reeve 2016, slightly modified: τὶ ἄρα κατὰ τινος ζητεῖ διὰ τί ὑπάρχει (ὅτι δ’ ὑπάρχει, δεῖ δὴλον εἶναι· εἰ γὰρ μὴ οὕτως, οὐδὲν ζητεῖ), οἷον διὰ τί βροντᾷ; διὰ τί ψόφος γίγνεται ἐν τοῖς νέφεσιν; ἄλλο γὰρ οὕτω κατ’ ἄλλου ἐστὶ τὸ ζητούμενον. καὶ διὰ τί ταδί, οἷον πλίνθοι καὶ λίθοι, οἰκία ἐστίν; φανερόν τοίνυν ὅτι ζητεῖ τὸ αἷτιον· τοῦτο δ’ ἐστὶ τὸ τί ἦν εἶναι, ὡς εἰπεῖν λογικῶς, [...]. I follow Ross in retaining τοῦτο δ’ ἐστὶ τὸ τί ἦν εἶναι, ὡς εἰπεῖν λογικῶς at 1041^a28. By contrast, Jaeger 1957 brackets the entire clause. In my view, the clause is indispensable, since from 1041^b1, Aristotle turns immediately to the inquiry of ‘what it is’ of a man. The identification of cause and essence provides a natural and intelligible transition between these two discussions.

Can a corresponding predicative structure also be identified in the case of a composite subject? The passage just quoted suggests that it can. In the example of a house, the particular composite house is said of the particular pieces of brick and stone.²⁵¹ In general, we may claim that a particular artefact is said of the particular pieces of matter out of which it is made.

In the following passage, we observe that this predicative structure applies not only to artefacts, but also to composite natural substances like a man:

What we are inquiring into most easily escapes notice, however, in cases where one thing is not said of another. For example, when we are inquiring into what a man is, it escapes notice, because it is said simply, and we do not distinguish that these things are this. But we must distinguish before inquiring. Otherwise, there will be something in common between inquiring into nothing and inquiring into something. But since the existence [of the subject] and also the belonging [of the predicate to it] must be the case, it is clear, accordingly, that what we are inquiring into is why the matter is something. For example, why are these things a house? Because the being for house belongs to them. Why is this—

²⁵¹ It should be noted that the predicate in this passage not a universal but a particular composite. This may appear to conflict with *Categories* 5, 3^a36–7, where Aristotle states that no predicate can be derived from a particular substance, since it is not SAID OF any subject (ἀπὸ μὲν γὰρ τῆς πρώτης οὐσίας οὐδεμία ἐστὶ κατηγορία, – κατ’ οὐδενὸς γὰρ ὑποκειμένου λέγεται). The reason is that in the *Organon*, hylomorphism is not applied to analyze a composite substance. In such a context, a predicate must be universal since the ultimate subjects are particular substances rather than matter. By contrast, in *Metaphysics*, a particular substance is analyzed in terms of form and matter. In such a context, both the particular substance and the form are predicated of matter. For Aristotle’s characterization of form as predicated of matter, see *Metaph.* Θ 7, 1049^a34–6. For discussion, see Kung 1978 and MacFarlane (manuscript).

or rather this body in this state—a man? Therefore, what is being looked for is the cause in virtue of which the matter is something—and this is the substance.²⁵²

With respect to this procedure of inquiring into the causal essence of a composite subject, there is a debate over whether Aristotle takes its causal essence to be known through a demonstration. I follow the view that the causal essence of a composite subject is known not through a demonstration.²⁵³

First, although in asking ‘why is this body of such—and—such a sort a (particular composite) man’, we are indeed seeking the cause, Aristotle never characterizes this cause as a ‘middle term’, in contrast to his treatment of attributes in *Posterior Analytics*.

Second, if we reconstruct a deduction of the ‘that it is’ of a particular composite subject, parallel to the demonstrations of thunder and eclipse, the resulting argument fails to constitute a demonstration. Consider the following reconstruction:

Being a particular composite man holds of the form of man;²⁵⁴

²⁵² *Metaph.* Z 17, 1041^a33–^b9, trans. C. D. C. Reeve 2016, slightly modified: λανθάνει δὲ μάλιστα τὸ ζητούμενον ἐν τοῖς μὴ κατ’ ἀλλήλων λεγομένοις, οἷον ἄνθρωπος τί ἐστι ζητεῖται διὰ τὸ ἀπλῶς λέγεσθαι ἀλλὰ μὴ διορίζειν ὅτι τάδε τόδε. ἀλλὰ δεῖ διαρθρώσαντας ζητεῖν· εἰ δὲ μή, κοινὸν τοῦ μηθέν ζητεῖν καὶ τοῦ ζητεῖν τι γίγνεται. ἐπεὶ δὲ δεῖ ἔχειν τε καὶ ὑπάρχειν τὸ εἶναι, δῆλον δὴ ὅτι τὴν ὕλην ζητεῖ διὰ τί <τι> ἐστίν· οἷον οἰκία ταδὶ διὰ τί; ὅτι ὑπάρχει ὃ ἦν οἰκία εἶναι. καὶ ἄνθρωπος τοδί, ἢ τὸ σῶμα τοῦτο τοδί ἔχον. ὥστε τὸ αἴτιον ζητεῖται τῆς ὕλης [τοῦτο δ’ ἐστὶ τὸ εἶδος] ὃ τί ἐστίν· τοῦτο δ’ ἡ οὐσία.

²⁵³ For the view that the inquiry of the causal essence of a composite subject cannot be reconstructed as a demonstration, see Wedin 2000, 414–6; Devereux 2003, 183; Lewis 2013, 282–7. For the opposite view, see Charles 2000, 289–90; Peramatzis 2011, 182; Peramatzis 2023, 248; Ge 2025, 150–80.

²⁵⁴ I propose that what inheres in the particular body is the particular form that can still be grasped universally as ‘the form of man’, without arguing for this in detail.

I do not follow Charles 2000, 289–90’s reconstruction, according to which the major term is ‘being arranged thus’. A similar reconstruction is found in Peramatzis 2023, 248.

The form of man holds of this body;

Being a particular composite man holds of this body.²⁵⁵

This is a valid deduction but not a demonstration:²⁵⁶ the major premise is difficult to justify, because it is difficult to see in what sense a particular composite subject can hold of the form.²⁵⁷

This reveals an important disanalogy between attributes and composite subjects. In the case of attributes, the relation between the attribute and its proper subject is mediated by the middle term. In the case of composite subjects, by contrast, the relation between the composite subject and its matter is not mediated by the form in an analogous way. Rather, the fact that this composite subject is predicated of this matter

²⁵⁵ For the view that the major term should be ‘being this particular composite’, and the minor term should be the particular pieces of matter, see Devereux 2003, 184, 186.

²⁵⁶ Lewis 2013, 283–4 argues that we cannot even construct a valid deduction from the inquiry into ‘why it is’ of man. According to Lewis, in a valid deduction, the sense of *huparchein* must be the same. However, this requirement is not satisfied in his reconstruction of the would-be deduction of ‘why it is’ of man. More recently, however, Ge 2025, 173–7 has argued, on the basis of *Prior Analytics* I 36, that *huparchein* need not be used univocally in a valid deduction. Support for Ge’s view may be found in the demonstration which demonstrates that thunder exists. In the major premise, ‘noise holds of the extinction of fire’, *huparchein* expresses the relation of ‘following upon’. In the minor premise, ‘the extinction of fire holds of the clouds’, *huparchein* expresses the relation of ‘occurring in’.

²⁵⁷ To be sure, although we may say that Socrates is his soul, we cannot simply reverse the predication and say that the soul of Socrates is Socrates. In *Metaphysics* Z 11, 1037^a7–8, Aristotle remarks that Socrates and Coriscos are ‘twofold’, namely, both the soul and the composite (Σωκράτης δὲ καὶ Κορίσκος, εἰ μὲν καὶ ἡ ψυχὴ Σωκράτης, διττόν (οἱ μὲν γὰρ ὡς ψυχὴν οἱ δ’ ὡς τὸ σύνολον)). The clause εἰ μὲν καὶ ἡ ψυχὴ Σωκράτης may be understood either as ‘if also the soul is Socrates’ or ‘if Socrates is also the soul’. I prefer the latter interpretation, since it better supports Aristotle’s claim that Socrates is twofold: both the soul and the composite (cf. *Metaph.* Z 10, 1035^a7–9, 1036^a16–19).

is explained simply by the fact that its form holds of the relevant matter. The form functions as the explanatory cause, but not as a middle term connecting the subject and predicate in a demonstration.

A similar point is made by Devereux, who argues that the conclusion ‘these bricks and stones are a house’ is not explained by the two premises ‘a house belongs to the essence or form of house’ and ‘the essence or form of house belongs to these materials’. Rather, the explanatory work is done entirely by the latter proposition, namely that ‘the essence or form of house belongs to these materials’.²⁵⁸

6.2. Pure and Impure Causal Essence of a Composite Subject:

Metaphysics Z 10–11

In the previous section, I have shown how Aristotle articulates the causal essence of a composite subject in terms of both its form and its matter in *Metaphysics Z 17*. Since such a causal definition includes not only the cause, namely the form, but also the relevant matter, it may appropriately be called an impure causal definition. Accordingly, what is revealed is the impure causal essence of the *definiendum*. In this section, I argue that *Metaphysics Z 10–11* in fact suggest, though not explicitly, the distinction between pure and impure causal definition, and correspondingly, that between pure and impure causal essence of a composite subject.

²⁵⁸ See Devereux 2003, 183. Ge 2025, 161 argues against this approach, calling it ‘non-demonstrative general causal structure’ (original in Chinese: “非证明性的一般因果框架”).

To be sure, Aristotle never explicitly distinguishes between pure and impure causal essence of a composite subject. Instead, the central question of *Metaphysics* Z 10–11 is whether we should include the accounts of parts in the account of the whole. As it becomes clear in *Metaphysics* Z 10–11, the answer depends on two different ways of grasping a particular composite subject. If we grasp it in terms of its form, then only the accounts of its formal parts will be included in the account of the whole. If, by contrast, we grasp it in terms of the nearest universal composite or its *infima species*, then the accounts of both its material and its formal parts must be included.²⁵⁹ Seen from the perspective of causal essence, these two modes of grasping a particular composite subject correspond, respectively, to its pure and impure causal definition, which reveal, correspondingly, its pure and impure causal essence.

6.2.1. *Pure Causal Essence of a Composite Subject: Metaphysics Z 10*

In *Metaphysics* Z 10, Aristotle shows that one way of grasping a particular composite subject is to account for it in terms of its form. In such a case, we only include the accounts of its formal parts in the account of the whole.²⁶⁰

²⁵⁹ For the view that *Metaphysics* Z 10–11 presents these two different ways of grasping a particular composite, see Meister 2020; Mié/Mittelmann 2022.

²⁶⁰ Many scholars take *Metaphysics* Z 10 to be concerned with the account of the form. See, for instance, Ross 1924b, 69. However, the examples discussed in Z 10 are composite subjects, such as a circle that can be divided into segments. It is therefore more accurate to say that in Z 10, Aristotle is accounting for a particular composite *in terms of* its form rather than accounting directly for the form itself. See also Chaintreuil 2023, 175, who likewise argues that the object of definition in Z 10 is a particular composite, and the account of the form thereby serves as the account of the corresponding composite.

To address the question of whether the accounts of the parts should inhere in the account of the whole, Aristotle makes two important distinctions. One is between a formal and a material part; the other is between the form and that which possesses the form. These two distinctions are introduced and explicated in the following passage:

Or the part is said in many ways. Of these, one way is what measures with respect to the quantity. But let this be set aside. On the other hand, the things out of which the substance is composed as from parts, this must be investigated. If, then, there is the matter, the form, and what is composed out of these, and the matter, the form, and what is composed out of these are substance, then there is a way, the matter is also said to be a part of something, and a way in which it is not a part, but parts are rather the things out of which the account of the form is composed (*ex hōn ho tou eidous logos*). For example, of the concavity flesh is not a part (for this is the matter in which it comes to be), but of the snubness it is a certain part. And of the compound statue (*tou men sunolou andriantos*) the bronze is a part, but of the statue that is said as the form (*tou d' hōs eidous legomenou andriantos*) it is not a part. Each thing should be said to be both the form (*to eidos*) and as what has the form (*hēi eidos echei*), but one should never say that it is the material component (*to hulikon*) *per se*.²⁶¹

According to this passage, if the whole is a form, then the account of the whole includes only the accounts of the parts of the form. By contrast, if the whole is something that

²⁶¹ *Metaph. Z* 10, 1034^b32–1035^a9, trans. C. D. C. Reeve 2016, modified: —ἡ πολλαχῶς λέγεται τὸ μέρος, ὧν εἷς μὲν τρόπος τὸ μετροῦν κατὰ τὸ ποσόν—ἀλλὰ τοῦτο μὲν ἀφείσθω· ἐξ ὧν δὲ ἡ οὐσία ὡς μερῶν, τοῦτο σκεπτέον. εἰ οὖν ἐστὶ τὸ μὲν ὕλη τὸ δὲ εἶδος τὸ δ' ἐκ τούτων, καὶ οὐσία ἢ τε ὕλη καὶ τὸ εἶδος καὶ τὸ ἐκ τούτων, ἔστι μὲν ὡς καὶ ἡ ὕλη μέρος τινὸς λέγεται, ἔστι δ' ὡς οὐ, ἀλλ' ἐξ ὧν ὁ τοῦ εἶδους λόγος. οἷον τῆς μὲν κοιλότητος οὐκ ἔστι μέρος ἡ σάρξ (αὕτη γὰρ ἡ ὕλη ἐφ' ἧς γίγνεται), τῆς δὲ σιμότητος μέρος· καὶ τοῦ μὲν συνόλου ἀνδριάντος μέρος ὁ χαλκὸς τοῦ δ' ὡς εἶδους λεγομένου ἀνδριάντος οὐ (λεκτέον γὰρ τὸ εἶδος καὶ ἡ εἶδος ἔχει ἕκαστον, τὸ δ' ὑλικὸν οὐδέποτε καθ' αὐτὸ λεκτέον).

possesses the form, then its account includes the accounts of both its material and formal parts. Aristotle's point is that a particular composite may be considered either as its form or as such, namely, as what possesses the form. When it is considered as its form, then its matter is no longer regarded as part of it. By contrast, when it is considered as what possesses the form, then matter remains part of it. Socrates, for example, may be considered either as his soul or as the composite constituted by his soul and his body. If Socrates is considered as his soul, his bodily parts are no longer regarded as parts of him. If, however, he is considered as the composite, then his bodily parts do count as parts of him.

In *Metaphysics Z 10*, Aristotle concentrates on accounting for a particular composite in Terms of its form. This is clear from the following passage:

This is why the account of the circle does not contain that of the segments, whereas that of the syllable does contain that of the phonetic elements. For the phonetic elements are parts of the account of the form, and are not matter, whereas the segments are parts in this way, namely, as matter in which the form comes to be.²⁶²

Thus, in one way, the account of a particular composite is just the account of its form. Besides this, in *Metaphysics Z 10*, Aristotle indicates that there is an alternative way of accounting for a particular composite. In such a case, its account will be of what is 'taken together with the matter':

²⁶² *Metaph. Z 10*, 1035^a9–12, trans. C. D. C. Reeve 2016: διὸ ὁ μὲν τοῦ κύκλου λόγος οὐκ ἔχει τὸν τῶν τμημάτων, ὁ δὲ τῆς συλλαβῆς ἔχει τὸν τῶν στοιχείων· τὰ μὲν γὰρ στοιχεῖα τοῦ λόγου μέρη τοῦ εἶδους καὶ οὐχ ὕλη, τὰ δὲ τμήματα οὕτως μέρη ὡς ὕλη ἐφ' ἧς ἐπιγίγνεται·

In the account of some things, then, the account of such [i.e. material] parts will be present, whereas in the account of others it must not be—that is, if it were not taken together [with the matter] (*mē ē tou suneilēmenou*).²⁶³

What, then, is that which is taken together with the matter? It cannot be a particular composite as such, for according to Aristotle, the account is of the universal (ὁ δὲ λόγος ἐστὶ τοῦ καθόλου, Z 10, 1035^b34–1036^a1). Accordingly, ‘what is taken together with the matter’ (*to suneilēmmenon*) cannot refer to a particular composite as such, but must instead refer to the nearest universal composite, namely, the corresponding *infima species*.

This interpretation is supported by *Metaphysics* Z 10, 1035^b27–30, where Aristotle states that man or horse is some composite (σύνολόν τι) which consists of this account (τουδὶ τοῦ λόγου)²⁶⁴ and this matter (τησδὶ τῆς ὕλης), both taken universally (ὡς καθόλου). In this way, *Metaphysics* Z 10 already points towards an alternative way through which one accounts for a particular composite subject in Terms of the nearest universal composite or its *infima species*.

6.2.2. Impure Causal Essence of a Composite Subject: *Metaphysics* Z 11

²⁶³ *Metaph.* Z 10, 1035^a22–3, trans. C. D. C. Reeve 2016, slightly modified: τῶν μὲν οὖν ἐνέσται ὁ τῶν τοιούτων μερῶν λόγος, τῶν δ’ οὐ δεῖ ἐνεῖναι, ἂν μὴ ἢ τοῦ συνειλημμένου.

²⁶⁴ I propose that *toudi tou logou* here refers to the particular form, where *toudi* indicates particularity and *tou logou* means the form. For the view that *logos* in Aristotle may refer to the form, see Weiner 2016, 9–12. For passages where *logos* refers to the form, see *Metaph.* A 9, 993^a17–22, *Metaph.* Z 15, 1039^b20–7, *Phy.* B 3, 194^b26–7=*Metaph.* Δ 2, 1013^a26–7. I owe these references to Weiner 2016, 9.

In *Metaphysics* Z 11, Aristotle argues that in some contexts, it would be more appropriate or even necessary to account for a particular composite *qua* the nearest universal composite or its *infima species*. In the terminology adopted in this study, this amounts to accounting for it in Terms of its impure causal essence.

Aristotle begins by warning that it is mistaken to suppose that a particular composite subject can be accounted for only *qua* its form. Those who adopt this view face two difficulties. First, those who posit the Forms, namely Platonists, run the risk of identifying sensible things with their Forms. More radically, the Pythagoreans, who posit a single common Form for all things, are liable to reduce all things to one and the same Form. Second, such a view wrongly suggests that a particular composite can exist independently of its proper matter. These difficulties, according to Aristotle, motivate the alternative way of accounting for a particular composite in Terms of the nearest universal composite or its *infima species*.

In *Metaphysics* Z 11, 1037^a5–10, Aristotle further indicates that there is a parallel between a particular composite and the nearest universal composite or its *infima species*:

It is clear too that the soul is the primary substance, whereas the body is matter, and the man and the animal is the thing composed of both taken universally (*ex amphoin hōs katholou*). Socrates (or Coriscus), on the other hand, if Socrates is also the soul, is twofold. For some take him to be a soul, others the composite. But if he is without qualification this soul (*hē psuhē hēde*) and this body (*to sōma tode*), then just as the universal is, so the particular is too.²⁶⁵

²⁶⁵ *Metaph.* Z 11, 1037^a5–10, trans. C. D. C. Reeve 2016, slightly modified: δῆλον δὲ καὶ ὅτι ἡ μὲν ψυχὴ οὐσία ἢ πρώτη, τὸ δὲ σῶμα ὕλη, ὁ δ' ἄνθρωπος ἢ τὸ ζῷον τὸ ἐξ ἀμφοῖν ὡς καθόλου· Σωκράτης δὲ

The remark that ‘just as the universal is, so the particular is too’ establishes a structural parallel between the nearest universal composite and the particular composite. If the species *man* likewise consists of both this soul and this body taken universally, then a particular man consists of this soul (*hē psuchē hēde*) and this body (*to sōma tode*).

Since the account of a particular composite in Terms of the nearest universal composite includes both form and matter, it counts as what I call ‘impure causal definition’. Such a definition reveals what I call the ‘impure causal essence’ of that particular composite.

It should be noted, however, that at the end of *Metaphysics* Z 11, Aristotle does not appear to take this alternative way of accounting for a particular composite into consideration. Instead, he writes:

[...] and of this [i.e. the composite] there is in a way an account and in a way not. For of the composite with the matter there is not an account (for it is indefinite), but with respect to the primary substance there is—for example, of man, the account of the soul.²⁶⁶

In this passage, Aristotle only acknowledges the way of accounting for a particular composite in Terms of its form. The reason may be that this passage summarizes not only *Metaphysics* Z 11, but the whole stretch of text from Z 4 to Z 11, where Aristotle

καὶ Κορίσκος, εἰ μὲν καὶ ἡ ψυχὴ Σωκράτης, διττόν (οἱ μὲν γὰρ ὡς ψυχὴν οἱ δ' ὡς σύνολον), εἰ δ' ἀπλῶς ἡ ψυχὴ ἦδε καὶ <τὸ> σῶμα τόδε, ὥσπερ τὸ καθόλου [τε] καὶ τὸ καθ' ἕκαστον.

²⁶⁶ *Metaph.* Z 11, 1037^a26–9, trans. C. D. C. Reeve 2016, slightly modified: [...] ταύτης δέ γ' ἔστι πως λόγος καὶ οὐκ ἔστιν· μετὰ μὲν γὰρ τῆς ὕλης οὐκ ἔστιν (ἀόριστον γάρ), κατὰ τὴν πρώτην δ' οὐσίαν ἔστιν, οἷον ἀνθρώπου ὁ τῆς ψυχῆς λόγος·

deals with essence or the what-it-is-to-be as a candidate for the first substance. Since Aristotle in this larger context is more concerned with the kind of account proper to a metaphysician, which is the account of a particular composite *qua* its form, it is reasonable that Aristotle left out the alternative way in the summary. The discussion of *Metaphysics* Z 11 should thus be taken as a reminder of the limitation of a merely metaphysical account of a particular composite in other contexts.

In sum, *Metaphysics* Z 10–11 presents two complementary ways of accounting for a particular composite. It can be accounted for either *qua* its form or *qua* the nearest universal composite to which it belongs, namely, its *infima species*. Although Aristotle does not explicitly formulate the notion of pure and impure causal essence in these chapters, they can nevertheless be understood through that conceptual framework. From this perspective, Z 10 concentrates on revealing the pure causal essence of a particular composite, whereas Z 11 emphasizes that, in certain contexts, we should rather reveal its impure causal essence.

6.3. Causal Essence of a Simple Subject or Form

Since *Metaphysics* Z 17 and Z 10–11 merely show how to grasp the causal essence of a composite subject, one may wonder whether a simple subject, namely a form,²⁶⁷ also

²⁶⁷ For Aristotle, form is also a kind of subject (cf. *Metaphysics* Z 3, 1029^a1–3, H 1, 1042^a26–9). With respect to the so-called ‘prime matter’, if it does exist, it is probable that it does not have a causal essence, since it is not correlated to any form, which should be the essence of the corresponding matter. Any concrete matter, insofar as it already involves some form, does not count as a simple subject, but rather a composite subject.

possesses a causal essence, and, if so, how it is to be grasped. In this section, I argue that a form also possesses a causal essence. Drawing on the example of soul in *De Anima*, I shall concentrate on the form of a natural substance and argue that its causal essence can be articulated in Terms of the set of capacities that is distinctive of the relevant *infima species*.

In *De Anima* II 1, Aristotle presents several versions of the most general account (*koinotatos logos*) of the soul, the most developed of which defines the soul as ‘the first actuality of a natural body which has life potentially’ (*DA* II 1 412^a27–8).²⁶⁸ This account applies universally to every kind of soul and therefore qualifies as the account of ‘the soul itself’.²⁶⁹

Like ‘noise in the cloud’, which is a preliminary stage of the causal definition of thunder, I take this account of the soul itself to represent the preliminary stage of the causal definition of a specific kind of soul. According to *Posterior Analytics* II 10, 94^a7–9, such a preliminary stage of causal definition resembles the conclusion of a demonstration.²⁷⁰ That is, it merely establishes ‘that it is’ but does not yet state the cause or ‘why it is’. In the following passage, Aristotle suggests that one must proceed from a definition that merely states ‘that it is’ to one that also makes explicit the cause:

Because what is certain and better known as conforming to reason comes to be from what is uncertain but more apparent, one must try to proceed anew in this way concerning the

²⁶⁸ See *DA* II 1 412^a27–8, trans. Shields 2016: ἐντελέχεια ἡ πρώτη σώματος φυσικοῦ δυνάμει ζῶν ἔχοντος.

²⁶⁹ For this expression, see Corcilius 2025.

²⁷⁰ See *An. post.* II 10, 94^a7–9: ἔτι ἐστὶν ὁρος βροντῆς ψόφος ἐν νέφεσι· τοῦτο δ’ ἐστὶ τῆς τοῦ τί ἐστὶν ἀποδείξεως συμπέρασμα.

soul. For it is not only necessary that a defining account (*ton horistikon logon*) makes clear ‘the that’ (*to hoti*), which is what most definitions state, but it must also contain and make manifest the cause. As things are, the statements of definitions are like conclusions (*hōsper sumperasmata*). For example: ‘what is squaring? It is [the construction of] an equilateral rectangle being equal to an oblong figure.’ But this sort of definition is an account of the conclusion (*logos tou sumperasmatos*): the one who states that squaring is the discovery of a middle proportion states the cause of the matter.²⁷¹

According to this passage, the account of the soul itself, ‘the first actuality of a natural body which has life potentially’, only states ‘the that’. It tells us merely *that* the soul holds of a natural body which has life potentially as the first actuality but does not tell us *why it is so*. Hence Aristotle remarks that such definitions ‘resemble conclusions’ (*hōsper sumperasmata*).²⁷²

Granted this, what is the cause that remains to be supplemented? It cannot be the cause of the soul itself. As Corcilius 2025 suggests, the soul itself is postulated as the ‘common subject’ for the attributes which hold of living beings *qua* living.²⁷³ In this respect, the soul itself only exists in a relatively derivative sense like trans-categorical entities and entities capable of functioning as higher-order predicates. Consequently,

²⁷¹ *DA* II 1, 413^a10–20, trans. Shields 2016, slightly modified with consultation of Corcilius 2017, 74–5: ‘Ἐπεὶ δ’ ἐκ τῶν ἀσαφῶν μὲν φαμερωτέρων δὲ γίνεται τὸ σαφὲς καὶ κατὰ τὸν λόγον γνωριμώτερον, πειρατέον πάλιν οὕτω γ’ ἐπελθεῖν περὶ αὐτῆς· οὐ γὰρ μόνον τὸ ὅτι δεῖ τὸν ὀριστικὸν λόγον δηλοῦν, ὥσπερ οἱ πλεῖστοι τῶν ὄρων λέγουσιν, ἀλλὰ καὶ τὴν αἰτίαν ἐνυπάρχειν καὶ ἐμφαίνεσθαι· νῦν δ’ ὥσπερ συμπεράσμαθ’ οἱ λόγοι τῶν ὄρων εἰσὶν· οἷον τί ἐστὶν ὁ τετραγωνισμός; τὸ ἴσον ἑτερομήκει ὀρθογώνιον εἶναι ἰσόπλευρον. ὁ δὲ τοιοῦτος ὅρος λόγος τοῦ συμπεράσματος. ὁ δὲ λέγων ὅτι ἐστὶν ὁ τετραγωνισμὸς μέσης εὗρεσις, τοῦ πράγματος λέγει τὸ αἷτιον.

²⁷² For an insightful discussion of the account of the soul itself, see Corcilius 2025, 39–40.

²⁷³ See Corcilius 2025, 46–47. In *DA* I 1, 402^b5–8, Aristotle himself expresses doubt whether there is a common account of the soul itself.

the soul itself does not possess a scientifically knowable cause. It may therefore possess only a logical essence, but not a causal essence.

For this reason, several scholars have suggested that the relevant causal definition concerns not the soul itself but either the nutritive soul, the perceptive soul, or the rational soul. Correspondingly, the cause to be supplied is the relevant capacity.²⁷⁴ In plants, this is the nutritive capacity; in non-rational animals, this is the perceptive capacity; and in rational animals, the rational capacity. Parallel to the demonstrations that show the causal definitions of thunder and eclipse in *Posterior Analytics* II 8, we may therefore construct a demonstration which shows the causal definition of the nutritive, perceptive, or rational soul. Let us take the nutritive soul as an example:

The first actuality holds of the nutritive capacity;

The nutritive capacity holds of the natural and potentially living body of a plant;

The first actuality holds of the natural and potentially living body of a plant.²⁷⁵

However, I hold that for Aristotle the nutritive soul, perceptive and rational souls are just parts of a soul in the sense of the nutritive, perceptive, and rational capacities. If this is correct, then the argument sketched above cannot qualify as a genuine demonstration, for the middle term would collapse into the major term. Although the deduction would remain formally valid, it would fail to be explanatory. Moreover, these capacities are parts of a soul, and hence parts of a form, rather than forms themselves.

²⁷⁴ See Johansen 2012, 40; Coates 2024, 451, 463–4; Corcilius 2025, 40–2.

²⁷⁵ For a recent version of this view, see Coates 2024.

As an alternative, I propose that what Aristotle takes to be soul as a form is rather a particular soul that inheres in each individual living being and, *when taken universally*, the soul of the corresponding *infima species*. Insofar as there is no causal definition of a particular soul as such, the relevant causal definition must instead be that of the corresponding *infima species*.

Support for this interpretation can be found in *De Anima* I 1, 402^b5–8, where Aristotle indicates that there is a different account of the soul of each *infima species*:

And one must take care not to overlook the question of whether is one account of it [i.e. the soul], as there is one account of animal, or whether there is a different account for each [type of soul], for example, of horse, of dog, of man, of god, while the universal animal is either nothing or is posterior to these; and it would be the same if any other common thing were being predicated.²⁷⁶

I suggest that, by raising the question ‘whether there is one account of it [i.e. the soul] or whether there is a different account for each [type of soul]’, Aristotle ultimately favors the latter alternative. Furthermore, I take the qualification ‘of horse, of dog, of man, of god’ to refer to ‘each type of soul’. On this reading, Aristotle denies that there is a single account either of the soul itself or of the soul common to all animals. Rather, each *infima species* possesses its own account of soul. Significantly, this claim is compatible with my proposal that instances of each *infima species* have particular souls that share the same account.

²⁷⁶ *DA* I 1, 402^b5–8, trans. Shields 2016: [...] εὐλαβητέον δ’ ὅπως μὴ λανθάνῃ πότερον εἷς ὁ λόγος αὐτῆς ἐστὶ, καθάπερ ζώου, ἢ καθ’ ἕκαστον ἕτερος, οἷον ἵππου, κυνός, ἀνθρώπου, θεοῦ, τὸ δὲ ζῶον τὸ καθόλου ἤτοι οὐθέν ἐστιν ἢ ὕστερον, ὁμοίως δὲ κἂν εἴ τι κοινὸν ἄλλο κατηγοροῖτο·

Accordingly, when Aristotle requires a definition to state not merely ‘that it is’ but also ‘why it is’, his concern is not to provide a causal definition of the soul itself, nor of nutritive, perceptive, or rational soul. Instead, he seeks the causal definition of the soul of an *infima species*.

To arrive at a causal definition of the soul of an *infima species*, we use the most general account of the soul itself as the conclusion. What is the relevant middle term? I propose that it is the set of capacities distinctive of that *infima species*. Such set of capacities is constitutive of the soul of the corresponding *infima species*. Parallel to the demonstrations that show causal definitions of thunder and eclipse, we may construct the following demonstration:

The first actuality holds of the set of capacities distinctive of this *infima species*.

The set of capacities distinctive of this *infima species* holds of this natural and potentially living body.

The first actuality holds of this natural and potentially living body.

We therefore see how the cause of a particular soul, and correspondingly, the soul of the corresponding *infima species*, can be articulated through the set of capacities distinctive of that *infima species*. The same model applies to the forms of natural substances generally.

What about the forms of geometrical objects and artefacts? As for the form of a geometrical object, I suggest that it can be causally defined through the way in which the intelligible matter is delimited. For instance, the form ‘circularity’ can be causally defined as ‘the drawing of a line whose extremes are equidistant from the center’. What

about the form of an artefact? I suppose that there is evidence which suggests that it can be causally defined through the function (*ergon*) of the artefact. For instance, insofar as the house, *qua* its form, is defined as ‘shelter capable of guarding against destruction by wind, rain, and heat’,²⁷⁷ the same account can also be seen as the causal definition of the form of house.

6.4. Conclusion

In this chapter, I have shown that, as in the case of attributes, the philosophical motivation for the notion of causal essence of a subject is the articulation of essence through the causal explanation of a subject’s being. As Aristotle already admits in *Posterior Analytics* II 2, a subject also has a ‘middle term’ in the broader sense of ‘scientifically knowable cause’, though he does not explicate there how its causal essence can be known. In *Metaphysics* Z 17, we find that the causal essence of a composite subject can be articulated through the fact that its form holds of its matter. Moreover, I have argued that *Metaphysics* Z 10–11 implicitly suggest the distinction between what I call ‘pure causal essence’ and ‘impure causal essence’ of a composite subject. Finally, regarding simple subjects or forms, I have suggested that they also

²⁷⁷ See *DA* I 1, 403^b4–5, trans. Shields 2016: [...] σκέπασμα κωλυτικὸν φθορᾶς ὑπ’ ἀνέμων καὶ ὄμβρων καὶ καυμάτων, [...]. See also *Metaph.* H 2, 1043^a16–18: ‘Those, on the other hand, who propose that it is a receptacle to shelter property and bodies, or something else of that sort, are speaking of the actualization.’ (trans. C. D. C. Reeve 2016: οἱ δὲ ἀγγεῖον σκεπαστικὸν χρημάτων καὶ σωμάτων ἢ τι ἄλλο τοιοῦτον προσθέντες τὴν ἐνέργειαν λέγουσιν’).

possess a causal essence and that the form of a natural substance is causally articulated through the set of capacities distinctive of the corresponding *infima species*.

Part III: The Relation between Logical Essence and Causal Essence

In the preceding chapters, I have examined the historical origins and philosophical motivations of Aristotle's notions of logical essence and of causal essence. I have argued that whenever a thing, either an attribute or a subject, has a scientifically knowable cause, it possesses both a logical essence and a causal essence, and correspondingly, both a logical and a causal definition. This, however, raises an important question. How can this be reconciled with Aristotle's insistence that each thing has only one essence? More generally, how can there be unity in such a multifaceted essence?

A natural answer is that, if one and the same thing possesses both a logical and a causal essence, there must be some correspondence between the logical definition and the causal definition of that thing.

In what follows, I focus on the correspondence between the logical and causal definition of an *infima species*. I argue that this correspondence lies in the fact that the final specific difference in the logical definition is ontologically based on the form or the cause in the causal definition. By contrast, the genus is merely analogous to the matter, or, in the case of attributes, to the proper subject, except in the special case of geometrical objects, where the genus reflects the kind of matter.

At this point, a clarification is required concerning the expression 'the final specific difference'. A final specific difference is not necessarily the last specific difference

reached at the end of a line of division. Rather, by ‘the final specific difference’ I mean the part of definition that remains once the genus is removed. If there is only one line of division involved in definition and the last specific difference entails all the higher ones, then the last specific difference is also the final specific difference. By contrast, when there are multiple lines of division, the final specific difference consists of the combination of all the last specific differences.²⁷⁸

I restrict my discussion to *infimae species* because the correspondence in the case of other kinds of entities can ultimately be reduced to the correspondence exhibited by *infimae species*.

First, the particular instances, whether subjects or attributes, do not have definitions as such. Instead, they must be accounted for through the logical definition and the causal definition of the corresponding *infima species*.

Second, the correspondence in the cases of forms likewise derives from that of the corresponding *infimae species*. Admittedly, Aristotle does not explicitly provide a logical definition of a form. Nevertheless, as I shall argue later, since the logical definition of an *infima species* abstracts from matter and articulates only the form, we may reasonably suppose that the logical definition of a form coincides with that of the corresponding *infima species*. For example, ‘two-footed rational animal’ may equally be regarded as the logical definition of the human soul. Accordingly, just as in the case of an *infima species*, the final specific difference in the logical definition of a form is

²⁷⁸ The distinction between the last specific difference and the final specific difference may be indicated in *PA I 3*, 643^a19–23, where Aristotle speaks of *hē eschatē diaphora* and *hē teleutaia diaphora*, which should correspond to the last specific difference and the final specific difference respectively. Balme 1972, 13 also translates these two expressions as the last specific difference and the final specific difference respectively.

ontologically based on the form itself, which in turn is articulated through the set of capacities distinctive of the relevant *infima species*.

Third, the correspondence in the case of a *per se* compound can likewise be explained in Terms of the correspondence exhibited by the attribute that constitutes it. First, the pure and impure causal definitions of a *per se* compound are the same as the pure and impure causal definitions of the constituent attribute. As for the logical definition, I propose that the logical definition of the attribute also inheres in the logical definition of the corresponding *per se* compound. For example, the logical definition of ‘snubness’, insofar as it only considers its formal aspect, but not its proper subject, is the same as that of ‘concavity’. The logical definition of the corresponding *per se* compound ‘snub nose’ is ‘concave nose’. Insofar as this account mentions ‘concave’, the logical definition of ‘snubness’, which is the same as that of ‘concavity’, is included in the logical definition of ‘snub nose’. If this is correct, then the correspondence exhibited in an attribute is also found in the relevant *per se* compound.

7. The Relation between Logical Essence and Causal Essence in the Case of *infimae species*

The relation between logical and causal essence of an *infima species* has commonly been explained in Terms of the ‘genus as matter’ thesis.²⁷⁹ According to the so-called ‘literal interpretation’,²⁸⁰ the genus in the logical definition refers to the kind of matter—or, in the case of attributes, to the kind of proper subject—mentioned in the causal definition, not merely by analogy.²⁸¹ Proponents of this view often argue that the final specific difference likewise refers to the form or the cause in the causal definition, not merely by analogy.²⁸² An alternative view is the ‘analogy interpretation’,²⁸³ according to which the genus is merely analogous to the matter or the proper subject insofar as both are yet to be determined.²⁸⁴ Correspondingly, the proponents of this view often argue that the final specific difference is also merely analogous to the form.

My own position differs from both interpretations. I argue that, except in the case of geometrical objects, the genus is only analogous to the matter or the proper subject,

²⁷⁹ For the passages where Aristotle explicitly links the genus to the matter, see *Metaph.* Δ 28, 1024^a36–b6, Z 12, 1038^a5–9, H 6, 1045^a14–25, I 8, 1058^a23–4.

²⁸⁰ For this expression, see Carr 1997, 203–23.

²⁸¹ For this view, see, for instance, Rorty 1973, 410–11; Carr 1997, 203–23; Menn 2021, 230; Peramatzis 2023, 258.

²⁸² For the passages where Aristotle explicitly links the (final) specific difference to the form, see *Metaph.* Z 12, 1038^a25–6, *PA* I 3, 643^a24.

²⁸³ For this expression, see Carr 1997, 195–203.

²⁸⁴ For this view, see, for instance, Ross 1924b, 238; LeBlond 1939, 365; Grene 1974, 56; Gill 2010, 111–13.

whereas the final specific difference is ontologically based on the form or the cause in the causal definition.

In what follows, I first critically examine the literal interpretation and argue that the genus is merely analogous to the matter or the proper subject, except in the case of geometrical objects. Then, I argue that the final specific difference is ontologically based on the form or the cause.

7.1. The Literal Interpretation of the ‘Genus as Matter’ Thesis Reconsidered

7.1.1. *Rorty’s Main Argument for the Literal Interpretation*

A prominent proponent of the literal interpretation is Richard Rorty. In his article ‘Genus as Matter: A Reading of *Metaphysics* Z–H’ (1973), Rorty’s main argument is that the unity of matter and form argued for in *Metaphysics* H 6 is intended to solve the puzzle about the unity of genus and specific differences in *Metaphysics* Z 12:²⁸⁵

In answer to this, Aristotle has to say something which he never says explicitly but which he must maintain if he is to regard H, 6 as his answer to the question of Z, 12. He has to say that genus, in a definition by genus and differentia, somehow signifies the material cause of the individuals of the species defined. In other words, he has to say that, e.g., animality stands to rationality as the brass of the statue stands to its shape. The proximate

²⁸⁵ For this view, see already Jaeger 1912, 60; Ross 1924b, 238. By contrast, Gill 2010, 110–3 suggests that Aristotle tries to solve the *aporia* in H 6 with the model of the unity of form in Z 12.

material cause of a man is that sort of organic material which can be called “animal” but cannot be called “human.”²⁸⁶

I argue, however, that this line of reasoning fails since the *aporia* addressed in H 6 is not the same as that discussed in Z 12. In Z 12, the *aporia* concerns how a *definiens*, which possesses multiple parts, can nevertheless signify some one thing and a this something (*hen ti kai tode ti sēmainein*).²⁸⁷ I propose that in the context of Z 12, the ‘one thing and this something’ refers to the essence or form of an *infima species*, since for Aristotle, a species is a universal and thus not ‘this something’ (*tode ti*).

It should be noted that I do not hold that the *definiendum* in Z 12 is directly the essence or the form, as some scholars suggest.²⁸⁸ Rather, in both Z 12 and H 6, the *definiendum* is an *infima species*, since at Z 12, 1037^b12–3, Aristotle explicitly says that let ‘two-footed animal’ be the definition of ‘man’, not of ‘human soul’. Given that the logical *definiens* of an *infima species* should refer to ‘some one thing and a this something’, which is the essence or form, Aristotle has in fact indicated that the logical *definiens* of an *infima species* defines it only in Terms of the form. Thus, the *aporia* in Z 12 concerns the unity among the parts of the form itself, which are also the parts of a logical definition, namely, genus and specific differences.

²⁸⁶ Rorty 1973, 410.

²⁸⁷ See *Metaphysics* Z 12, 1037^b24–7: ‘But what is in the definition must be one. For the definition is a certain account that is one and of essence (*ousias*), so that it must be the account of some one thing. For the essence signifies some one thing and a this something, as we say.’ (trans. C. D. C. Reeve 2016, modified: δεῖ δέ γε ἓν εἶναι ὅσα ἐν τῷ ὀρισμῷ· ὁ γὰρ ὀρισμὸς λόγος τίς ἐστιν εἷς καὶ οὐσίας, ὥστε ἑνός τινος δεῖ αὐτὸν εἶναι λόγον· καὶ γὰρ ἡ οὐσία ἐν τι καὶ τόδε τι σημαίνει, ὡς φαμέν.)

²⁸⁸ See, for instance, Harte 1996, 278; Gill 2010, 104–9; Mié 2026, 2.

By contrast, the *aporia* dealt with in H 6 concerns the unity between form and matter of a particular composite. The issue is no longer how the parts of a form constitute a single essence, but how a composite consisting of matter and form nevertheless constitutes one thing.

As the two chapters address different *aporiai*, Aristotle also resolves them in different ways. In Z 12, the multiplicity of a logical *definiens* is ultimately reduced to the simplicity of the final specific difference, which is identified with the essence or form. In H 6, by contrast, Aristotle shows how matter and form are in fact different aspects of one thing by arguing that matter is what is *X* in potentiality and form is what is *X* in actuality.

Accordingly, the solution proposed in H 6, 1045^a23–5 should not be understood as a solution to the *aporia* discussed in Z 12.²⁸⁹ If this is correct, then Rorty’s main argument for the literal interpretation of ‘genus as matter’ thesis fails.

7.1.2. *Evidence for the Literal Interpretation regarding a Composite Subject Reconsidered*

A passage that may seem to support the literal interpretation of ‘genus as matter’ thesis in the case of a composite subject is *Metaphysics* I 3, 1054^b27–30:

For anything which is different differs either in genus or in species; in genus those things of which there is no common matter (*koinē hē hulē*) and no coming to be into each other

²⁸⁹ For the view that Z 12 and H 6 do not deal with the same issue, see Halper 1984; Harte 1996, 278, note 5; Steinfath 1996, 238; Helmig 2007, 73; Mié 2026, 2.

(*genesis eis allēla*)—as is the case with things whose figure of predication (*schēma tēs katēgorias*) is other.²⁹⁰

In this passage, Aristotle states that if there is no common matter (*koinē hulē*) among some things and if there is no coming to be into each other (*genesis eis allēla*) among them, then these things are different in genera. As examples Aristotle mentions the entities that fall under different ‘figures of predication’, that is, that belong to different ontological categories. At first sight, matter seems to refer to literal matter, and ‘coming to be’ seems to refer to coming to be in the physical world. However, I argue that it is not necessary to understand these two terms in their literal sense.

The crux lies in the fact that ‘genus’ is a relative term. In other words: things that differ in genus on one level may be under the same genus on a higher level. For example, bird and fish are different in genus on one level but they are under the same genus ‘animal’. If ‘matter’ and ‘coming to be’ are understood in the literal sense, then bird and fish will at the same time possess and do not possess the same kind of matter. Therefore, I propose that ‘matter’ and ‘coming to be’ are not to be understood in a literal sense, but in a logical sense. Things differ in genus when they possess no common logical matter and they cannot ‘come to be’ from each other in the sense that they cannot, by changing the specific differences determining them, ‘logically’ become each other. Such a claim then only applies to what falls under the different ontological categories, because, as the highest genera, they have no common logical matter. This fits Aristotle’s example perfectly. Otherwise, it will be difficult to explain why

²⁹⁰ *Metaph.* I 3, 1054^b27–30, trans. Castelli 2018: πᾶν γὰρ τὸ διαφέρον διαφέρει ἢ γένει ἢ εἶδει, γένει μὲν ὧν μὴ ἔστι κοινὴ ἡ ὕλη μηδὲ γένεσις εἰς ἄλληλα, οἷον ὅσων ἄλλο σχῆμα τῆς κατηγορίας, [...].

Aristotle only mentions ‘things whose figure of predication (*schēma tēs katēgorias*) is other’ as an example but not more straightforward cases like animals and plants.

A parallel passage is found in *Metaphysics* Δ 28, 1024^b9–16:

Things are said to be different in genus whose first underlying subject (*to prōton hupokeimenon*) is distinct, and when the one is not analyzed (*analuetai*) into the other or both into the same thing—for example, the form and the matter are distinct in genus. As also are those that are said of something with reference to distinct figures of predication of being (*schema katēgorias tou ontos*). For some beings signify what it is, others a quality, others the various other things that were distinguished earlier. These too are neither analyzed into each other nor into some one thing.²⁹¹

In this passage, Aristotle also speaks of the things that differ in genus, though he makes use of different terms from those in I 3. Instead of ‘matter’ (*hulē*) he speaks of ‘the first underlying subject’ (*to prōton hupokeimenon*), and instead of ‘coming to be into each other’ (*genesis eis allēla*) he speaks of ‘being analyzed into each other’ (*analuenai thateron eis thateron*). Also in this passage, the example for the things that differ in genus are those belonging to different ontological categories. It is probable that this passage, compared with the passage in I 3, is a more considered expression of the same thought. Notably, here Aristotle mentions that form and matter differ in genus. Since form as such does not possess any literal matter as its part, what Aristotle means cannot

²⁹¹ *Metaph.* Δ 28, 1024^b9–16, trans. C. D. C. Reeve 2016, slightly modified: ἕτερα δὲ τῷ γένει λέγεται ὧν τε ἕτερον τὸ πρῶτον ὑποκείμενον καὶ μὴ ἀναλύεται θάτερον εἰς θάτερον μὴδ’ ἄμφω εἰς ταῦτόν, οἷον τὸ εἶδος καὶ ἡ ὕλη ἕτερον τῷ γένει, καὶ ὅσα καθ’ ἕτερον σχῆμα κατηγορίας τοῦ ὄντος λέγεται (τὰ μὲν γὰρ τί ἐστι σημαίνει τῶν ὄντων τὰ δὲ ποιόν τι τὰ δ’ ὡς διήρηται πρότερον· οὐδὲ γὰρ ταῦτα ἀναλύεται οὔτ’ εἰς ἀλλήλα οὔτ’ εἰς ἓν τι.

be that form and matter are composed of different kinds of literal matter. Rather, Aristotle's point is that form and matter are so radically different that they cannot be treated as the same or as belonging to the same kind.

Another passage that seems to support the literal interpretation is *Metaphysics* Δ 28, 1024^a29–^b9. There Aristotle distinguishes four senses of genus, the third and fourth of which are grouped together as genus in the sense of underlying subject or matter.²⁹² These two senses of genus are introduced as follows:

Further, as the plane is said to be the genus of plane figures and solid of solids. For each of the figures is in the one case a plane of such–and–such a sort and in the other a solid of such–and–such a sort. This is the underlying subject for the differences.²⁹³

Further, as the first constituent in the accounts that is said in the “what it is”. For this is the genus, of which the specific differences are said to be qualities.²⁹⁴

The third sense of genus refers to the kind of intelligible matter of a geometrical object, whereas the fourth refers to genus as an essential predicate in the logical sense. Later in Δ 28, 1024^b8–9, these two senses are taken together as genus in the sense of underlying subject and matter. From this connection between the two senses of genus

²⁹² *Metaph.* Δ 28, 1024^b8–9: τὸ δ' ὡς ὅλη· οὗ γὰρ ἡ διαφορὰ καὶ ἡ ποιότης ἐστί, τοῦτ' ἐστὶ τὸ ὑποκείμενον, ὃ λέγομεν ὅλην. The context shows that both the third and the fourth senses of genus are grouped under this broader sense.

²⁹³ *Metaph.* Δ 28, 1024^a36–1024^b4: trans. C. D. C. Reeve 2016, modified: ἔτι δὲ ὡς τὸ ἐπίπεδον τῶν σχημάτων γένος τῶν ἐπιπέδων καὶ τὸ στερεὸν τῶν στερεῶν· ἕκαστον γὰρ τῶν σχημάτων τὸ μὲν ἐπίπεδον τοιονδί τὸ δὲ στερεόν ἐστὶ τοιονδί· τοῦτο δ' ἐστὶ τὸ ὑποκείμενον ταῖς διαφοραῖς.

²⁹⁴ *Metaph.* Δ 28, 1024^b4–6, trans. C. D. C. Reeve 2016, modified: ἔτι ὡς ἐν τοῖς λόγοις τὸ πρῶτον ἐνυπάρχον, ὃ λέγεται ἐν τῷ τί ἐστι· τοῦτο <γὰρ> γένος, οὗ διαφοραὶ λέγονται αἱ ποιότητες.

a proponent of the literal interpretation may conclude that genus as an essential predicate in a logical sense corresponds to the kind of literal matter, both sensible and intelligible. I argue, however, that neither this inference nor the interpretation built upon it is warranted by the text.

First, although Aristotle groups the third and the fourth senses together under the broader heading of genus as underlying subject or matter, ‘underlying subject’ or ‘matter’ here may be used in a general sense. Both terms can be understood as literal or logical. It is probable that a genus as an essential predicate in a logical sense is only considered as logical underlying subject or matter, rather than a literal one.

Second, I hold that only the genus of a geometrical object (line, plane figure, or solid) always corresponds to its intelligible matter (one, two, or three-dimensional extension).²⁹⁵ By contrast, no comparable correspondence can be established for natural composite substances. This is also why Aristotle only mentions examples of geometrical objects when he describes the third sense of genus. The correspondence found in the case of geometrical objects arises because the logical classification of them is made just according to the way in which their intelligible matter is delimited.

²⁹⁵ In *Metaphysics* H 6, 1045^a33–5, Aristotle says the following: ‘Of matter, though, there is some that is intelligible and some that is perceptible, and one part of the account is always the matter and the other the activity—for instance, the circle is plane figure.’ (trans. C. D. C. Reeve 2016, slightly modified: ἔστι δὲ τῆς ὕλης ἡ μὲν νοητὴ ἡ δ’ αἰσθητή, καὶ αἰεὶ τοῦ λόγου τὸ μὲν ὕλη τὸ δὲ ἐνέργειά ἐστιν, οἷον ὁ κύκλος σχῆμα ἐπίπεδον.) Commentators like Helmig 2007, 71 and Katz 2023, 143 interpret ‘plane figure’ as the complete definition of circle, suggesting that while ‘plane’ refers to the matter of the circle, namely, ‘two-dimensional continuum’, ‘figure’ refers to the form of the circle. By contrast, I hold that ‘plane figure’ is not the complete definition, but only the genus of the circle, which refers to the matter of the circle, ‘two-dimensional continuum’, and that the form of the circle should be ‘with its extremes being equidistant from the center’. For this view, see, for instance, Ross 1924b, 238; Harte 1996, 288 with note 33; Katz 2021, 195–6 with note 15. For the view that ‘figure’ refers to the matter of the circle, whereas ‘plane’ refers to the form, see Peramatzis 2023, 254.

The cases of natural composite substances are fundamentally different. Natural substances under the same genus do not necessarily possess the same kind of matter. Different kinds of animals, for example, possess different bodily parts: fishes have fins, birds have wings, and the land-animals have feet. On a lower level, blooded animals possess blood, flesh, and bones as their matter, whereas bloodless animals have different kinds of matter that are analogous to blood, flesh, and bones. Someone may suggest that ‘organic body that potentially possesses perceptive capacity’ may be the kind of matter common to all animals. Suppose that this is true and all animals must have this as their proximate matter, the referent of ‘animal’ need still not be this kind of matter. Rather, I propose that ‘animal’ corresponds to the perceptive capacity, which is to be further specified by a specific difference. In this way, ‘organic body that potentially possesses perceptive capacity’ is not the direct referent of ‘animal’, but only required by the genus ‘animal’, just as a proper kind of matter is required by a form.²⁹⁶

By dealing with the texts that appear to support the literal interpretation of the ‘genus as matter’ thesis with regard to a composite subject, I have shown that they do not offer enough evidence for this view. I have argued that although the genus of a geometrical object corresponds to the kind of its intelligible matter, no general correspondence between the genus and the kind of sensible matter can be identified in the case of natural substances.

In the following section, I turn to the texts that may appear to speak for the literal interpretation of the ‘genus as matter’ thesis with regard to an attribute. There I shall

²⁹⁶ It should be noted that genus is only a logical part of the form. For a recent defense of the view that genus is the logical part or logical matter of the form, see Chaintreuil 2024, 324–35.

argue that there is no general correspondence between the genus and the kind of proper subject of an attribute.

7.1.3. *Evidence for the Literal Interpretation regarding an Attribute*

Reconsidered

One passage that appears to support the literal interpretation of the ‘genus as matter’ thesis with respect to an attribute is *Metaphysics* Z 12, 1038^a5–9:

If, then, the genus is absolutely nothing beyond the species of the genus, or if it is, it is as matter (for the voiced sound is genus and matter, and the specific differences produce the phonetic elements from this), then it is evident that the definition is the account composed out of the specific differences.²⁹⁷

Here Aristotle claims that we may consider genus either as nothing beyond the species, or as matter (*hōs hulē*) of the species. I take these two alternatives to be mutually exclusive and argue that Aristotle is committed to the second alternative.²⁹⁸ However, should the claim that genus is as matter (of the species) be understood in the sense that genus corresponds to the kind of literal matter? At first sight, the example of ‘voiced sound’ (*phōnē*) and phonetic elements might seem to support the literal interpretation,

²⁹⁷ *Metaph.* Z 12, 1038^a5–9, trans. C. D. C. Reeve 2016, slightly modified: εἰ οὖν τὸ γένος ἀπλῶς μὴ ἔστι παρὰ τὰ ὡς γένους εἶδη, ἢ εἰ ἔστι μὲν ὡς ὕλη δ’ ἐστὶν (ἢ μὲν γὰρ φωνὴ γένος καὶ ὕλη, αἱ δὲ διαφοραὶ τὰ εἶδη καὶ τὰ στοιχεῖα ἐκ ταύτης ποιοῦσιν), φανερόν ὅτι ὁ ὁρισμός ἐστιν ὁ ἐκ τῶν διαφορῶν λόγος.

²⁹⁸ For the view that the second alternative is a further qualification of the first alternative, see Peramatzis 2023, 245.

since voiced sound appears to function both as the genus and the ‘matter’ of phonetic elements. While I agree that voiced sound is the genus of phonetic elements, I deny that it is their ‘matter’.

First, the phonetic elements, as ‘indivisible voiced sounds from which a compound sound naturally comes about’,²⁹⁹ are attributes, not composite subjects. Consequently, they do not possess ‘matter’ in the same way as a composite subject. Rather, they possess a proper subject to which they belong. However, I argue that the proper subject of phonetic elements is not voiced sound. Rather, phonetic elements, being ‘indivisible voiced sounds’, have the same proper subject as voiced sound.

Thus, to know what the proper subject of phonetic elements is, one must know what the proper subject of voiced sound is. Aristotle’s answer to the latter can be found in *De Anima* II 8, where Aristotle offers several accounts of voiced sound (*phōnē*):

- (1) The voiced sound is a certain sort of sound (*psophos*), one belonging to the ensouled.³⁰⁰
- (2) The voiced sound is a sound (*psophos*) of an animal which takes in air.³⁰¹

²⁹⁹ For a *logical* definition of the phonetic element, see *Poet.* 20, 1456^b22–3: ‘A phonetic element is an indivisible voiced sound, and not everyone, but one from which a compound sound naturally comes about.’ (trans. C. D. C. Reeve, in Reeve/Kontos 2025, slightly modified: στοιχεῖον μὲν οὖν ἐστὶν φωνὴ ἀδιαίρετος, οὐ πᾶσα δὲ ἀλλ’ ἐξ ἧς πέφυκε συνθετὴ γίνεσθαι φωνή.)

³⁰⁰ *DA* II 8, 420^b5–6, trans. Shields 2016, slightly modified: ἡ δὲ φωνὴ ψόφος τίς ἐστιν ἐμψύχου·

³⁰¹ See *DA* II 8, 420^b13–16: φωνὴ δ’ ἐστὶ ζώου ψόφος οὐ τῷ τυχόντι μορίῳ. ἀλλ’ ἐπεὶ πᾶν ψοφεῖ τύπτοντός τινος καὶ τι καὶ ἐν τινι, τοῦτο δ’ ἐστὶν ἀήρ, εὐλόγως ἂν φωνοίη ταῦτα μόνα ὅσα δέχεται τὸν ἀέρα.

(3) The voiced sound is an impact (*plēgē*) of the inhaled air upon what is called the trachea, effected by the soul in the bodily parts that are responsible for producing sound.³⁰²

(4) The voiced sound is some sort of significant (*sēmantikos*) sound.³⁰³

Among these accounts, I suggest that (3) can be seen as the causal definition of voiced sound, whereas (1), (2), and (4) represent different versions of its logical definition. More specifically, the immediate genus of voiced sound is ‘sound’ (*psophos*); its cause is the ‘impact (*plēgē*) effected by the soul in the bodily parts that are responsible for producing sound’; and its proper subjects are air and tracheae involved in vocal production.

Since phonetic elements are simply the indivisible voiced sounds, they should share the same proper subjects as the voiced sound itself, namely, air and tracheae. Their proper subject is therefore not voiced sound, but the bodily and material conditions in which voiced sound is realized.

Moreover, *De Anima* II 8 also indicates that the immediate genus of ‘sound’ (*psophos*) is ‘motion’ (*kinēsis*), which should be ‘contextually restricted’ to locomotion.³⁰⁴ Its cause is ‘impact’,³⁰⁵ and its proper subjects are air and smooth

³⁰² See *DA* II 8, 420^b27–9: ὥστε ἡ πληγὴ τοῦ ἀναπνεομένου ἀέρος ὑπὸ τῆς ἐν τούτοις τοῖς μορίοις ψυχῆς πρὸς τὴν καλουμένην ἀρτηρίαν φωνή ἐστιν.

³⁰³ See *DA* II 8, 420^b32: σημαντικὸς γὰρ δὴ τις ψόφος ἐστὶν ἡ φωνή.

³⁰⁴ See *DA* II 8, 420^a21.

³⁰⁵ See *DA* II 8, 419^b20.

surfaces.³⁰⁶ Taken together, we can represent the immediate genus, the cause, and the proper subjects of sound, voiced sound, and phonetic element as follows:

	Immediate genus	Cause	Proper subjects
Sound	Motion/locomotion	Impact	Air and smooth surfaces
Voiced Sound	Sound	Impact effected by the soul	Air and tracheae
Phonetic element	Voiced sound	Impact effected by the soul	Air and tracheae

In the case of the other attributes, we can also see that the genus of an attribute is not ontologically based on the kind of its proper subject. For example, in *De Anima* I 1, 403^a29–^b2, while the genus of anger is ‘desire’, the proper subject of it is ‘blood and heat around the heart’.³⁰⁷ Similarly, while the genus of ‘thunder’ is ‘noise’, its proper subject is ‘cloud’. In fact, ‘noise’ and ‘cloud’ constitute two distinct components of the impure causal definition of thunder: the former specifies its logical genus, whereas the latter identifies the proper subject in which thunder occurs.

It should be noted that for attributes, the proper subject of a genus is either the same as or a more general kind of the proper subject of a species. In the case of voiced sound and phonetic elements, their proper subjects are the same. By contrast, in the case of noise and thunder, the proper subject of noise should be a kind that is more general than the proper subject of thunder, namely, the cloud.

³⁰⁶ See *DA* II 8, 420^a22–6.

³⁰⁷ See *DA* I 1, 403^a29–^b2.

These examples show that the genus of an attribute is not ontologically based on the kind of proper subject of which the attribute holds. At most, the genus delimits the domain within which the proper subject is to be identified. For example, the proper subject of ‘noise’ determines the domain within which the proper subject of thunder is to be found. Besides, the proper subjects of sound determine the domain within which the proper subjects of voiced sound must be sought.

7.2. The Final Specific Difference as Ontologically Based on the Form or the Cause

With respect to composite subjects whose cause is the form, Aristotle states in *Metaphysics* Z 12, 1038^a25–6 that the final specific difference is just the form or the essence: ‘If a specific difference generates from a specific difference, then the final specific difference, the form, and the essence will be one thing.’³⁰⁸ Aristotle’s formulation indicates that he is making a stronger claim than a mere analogy between the final specific difference, the form, and the essence. Rather, this claim should be taken as an identification among them. This identification, however, is not without qualification. Strictly speaking, the final specific difference is a logical predicate, whereas the form or the essence is an ontological entity. I therefore propose understanding Aristotle’s claim in the sense that the final specific difference is

³⁰⁸ *Metaph.* Z 12, 1038^a25–6, translation is mine: ἐὰν μὲν δὴ διαφορᾶς διαφορὰ γίγνηται, μία ἔσται ἡ τελευταία τὸ εἶδος καὶ ἡ οὐσία.

ontologically based on the form or the essence. It is the form of something that *determines* which quality is capable of functioning as its final specific difference.

One passage that supports this correspondence between the final specific difference and the form in the case of natural composite substances is the following passage in *De Partibus Animalium* I 3, 643^a24–7:

For the [final]³⁰⁹ specific difference in the matter is the species (*esti d' hē diaphora en tē[i] hulē[i] to eidos*). For just as there is no part of an animal without matter, so there is none that is only the matter; for not a body in just any state will be an animal or any part of it, as we have often said.³¹⁰

Here, I follow the manuscript Y and Balme 1972 in reading Ἔστι δ' ἡ διαφορὰ ἐν τῇ ὕλῃ τὸ εἶδος at 643^a24.³¹¹ By contrast, Kullmann 1974 and Cho 2003 read Ἔστι δ' ἡ διαφορὰ τὸ εἶδος ἐν τῇ ὕλῃ at 643^a24, understanding the specific difference as the form in the matter.³¹² I prefer the reading of the manuscript Y and Balme because in the surrounding discussion, Aristotle argues that the number of the final specific differences is the same as that of the *infimae species* (cf. *PA* I 3, 643^a7–8).³¹³ The claim

³⁰⁹ As indicated by αἱ τελευταῖαι at *PA* I 3, 643^a22, what is meant should be the final specific difference, which is not to be identified without qualification with the last specific difference that is at the end of one line of division. The expression referring to the last specific difference is τὰς ἐσχάτας διαφορὰς (*PA* I 3, 643^a18–19). See also Kullmann 1974, 61.

³¹⁰ *PA* I 3, 643^a24–7, trans. D. M. Balme 1972, slightly modified: Ἔστι δ' ἡ διαφορὰ ἐν τῇ ὕλῃ τὸ εἶδος. Οὐτε γὰρ ἄνευ ὕλης οὐδὲν ζῶον μόνιον, οὔτε μόνη ἡ ὕλη· οὐ γὰρ πάντως ἔχον σῶμα ἔσται ζῶον, οὐδὲ τῶν μορίων οὐδέν, ὥσπερ πολλάκις εἴρηται.

³¹¹ See also Peck/Forster 1961, 86–7; Cherniss 1944, 49.

³¹² See Kullmann 1974, 61; Cho 2003, 185.

³¹³ *PA* I 3, 643^a7–8, ‘The specific differences will be equal in number to the indivisible animals, if it is true both that these are indivisible and that the specific differences are indivisible and if no specific

that ‘the [final] specific difference in the matter is the species’ directly explains why this is so. By contrast, the alternative reading, according to which the [final] specific difference is the form in the matter, does not explain the claim. The reading preserved by the manuscript Y is therefore preferable.

The example of animal shows that the matter is sensible matter rather than logical matter. Aristotle’s point is that an animal species can be understood as a final specific difference inhering in matter. In other words, an animal species is neither a final specific difference considered in abstraction from matter nor mere matter, but the composite of the two.³¹⁴ Since Aristotle elsewhere characterizes an animal as the form in the matter, or as the composite of form and matter, the present passage has in fact identified the final specific difference with the form. As before, this identification is not without qualification but should be understood in the sense that the final specific difference is ontologically based on the relevant form.

Note that according to *De Partibus Animalium* I 3, 644^a1–11, in defining an *infima species* of animal, one should divide the genus along multiple lines of division, with each line ended with a ‘last specific difference’ (*eschatē diaphora*).³¹⁵ The final

difference is common.’ (trans. D. M. Balme 1972, slightly modified: ‘Ἔσονται δ’ αἱ διαφοραὶ ἴσαι τοῖς ἀτόμοις ζώοις, εἴπερ ἄτομά τε ταῦτα καὶ αἱ διαφοραὶ ἄτομοι, κοινὴ δὲ μὴ ἔστιν.’)

³¹⁴ See also *Metaph.* Z 11, 1036^b28–32.

³¹⁵ See *PA* I 3, 644^a1–8: ‘It is clear that it is possible to be multiple such specific differences, [if man proceeds as dichotomists do]. For by proceeding continuously one arrives at the last specific difference (*tēn eschatēn diaphoran*), not the final specific difference (*tēn teleutaian*) and the species. When one defines man, this is either the split-footed alone, or the whole complex, for instance, when one combines footed, two-footed, and split-footed. If the man is split-footed alone, by so proceeding this turns out to be the one specific difference. Now since he is not, it is necessary that there are multiple specific differences that are not under one line of division.’ (translation is mine with consultation of the translation of C.D.C. Reeve in Reeve/Kontos 2025: ‘Ὅτι δ’ ἀδύνατον πλείους εἶναι τοιαύτας, δῆλον· ἀεὶ γὰρ βαδίζων ἐπὶ τὴν ἐσχάτην διαφορὰν ἀφικνεῖται, ἀλλ’ οὐκ ἐπὶ τὴν τελευταίαν καὶ τὸ εἶδος. Αὕτη δ’

specific difference (*teleutaia diaphora*) is then constituted by the conjunction of these last specific differences. This naturally raises the question of whether there is a correspondence between one last specific difference and one constituent of form? I suggest that it does. As argued in 6.3, the form of a natural substance can be causally defined in terms of the set of capacities distinctive of the relevant *infima species*. It is probable that each last specific difference is ontologically based on one capacity within that set. For example, the last specific difference specifying the mode of locomotion is ontologically based on the relevant capacity for some specific kind of locomotion.³¹⁶

The same correspondence can also be observed in geometrical objects. If a circle is logically defined as ‘the plane figure with its extremes being equidistant from the center’, the genus is ‘plane figure’, whereas the final specific difference is ‘with its extremes being equidistant from the center’. This specific difference is ontologically based on the form of the circle, namely, ‘roundness’.

I argue that the same correspondence holds for attributes. Consider once again Aristotle’s accounts of ‘voiced sound’ (*phōnē*) in *De Anima* II 8:

ἐστὶν ἢ τὸ σχιζόπουν μόνον, ἢ πᾶσα ἡ σύμπλεξις, ἐὰν διαιρῇται ἄνθρωπον, οἷον εἴ τις συνθεῖη ὑπόπουν, δίπουν, σχιζόπουν. Εἰ δ’ ἦν ὁ ἄνθρωπος σχιζόπουν μόνον, οὕτως ἐγίγνετ’ ἂν αὕτη μία διαφορά. Νῦν δ’ ἐπειδὴ οὐκ ἔστιν, ἀνάγκη πολλὰς εἶναι μὴ ὑπὸ μίαν διαίρεσιν.)

³¹⁶ I do not think that the four kinds of differences of animal (ways of life [*hoi bioi*], actions [*hai praxeis*], characters [*ta ēthē*], and parts [*ta moria*]) mentioned in *Historia Animalium* I 1, 487^a11–12 are all specific differences constituting the logical definition of an animal species. It is evident that at least ways of life, actions, characters, and some bodily parts do not refer to essential attributes. Rather, I suggest that these are merely differences, with which we make a classification of animals, serving to distinguish and organize animals into groups. In this respect, the classification of animals and the definition of an animal species are distinct enterprises. Classification is an experiential investigation that establishes the facts or ‘that it is’, whereas definition determines the ‘what it is’ and ‘why it is’. I am grateful to Christoph Helmig for drawing my attention to this issue.

- (1) The voiced sound is a certain sort of sound (*psophos*), one belonging to the ensouled.
- (2) The voiced sound is a sound (*psophos*) of an animal which takes in air.
- (3) The voiced sound is an impact (*plēgē*) of the inhaled air upon what is called the trachea, effected by the soul in the bodily parts that are responsible for producing sound.
- (4) The voiced sound is some sort of significant (*sēmantikos*) sound.

We notice that the logical definitions (1), (2), (4) make use of different final specific differences: (1) speaks of the ‘ensouled’, (2) mentions ‘animal’ and ‘air’, and in (4), we find ‘significant’. Since only ensouled animals are capable of producing significant sounds, ‘significant’ is related to ‘ensouled’ or ‘animal’. Among these, I propose that (2) is more exact than (1), because while plants are also ‘ensouled’, they do not produce any voiced sound. Besides, (4) is even more exact than (2), since not all sounds produced by animals are also significant. For example, the sound produced when one falls asleep is not significant. Therefore, (4) may be taken as the most developed form of logical definition of voiced sound. Does the final specific difference ‘significant’ correspond to the cause in the causal definition of voiced sound? I suggest that it does. The cause specified in the causal definition is ‘impact effected by the soul’. The expression ‘*effected by the soul*’ indicates that the sound is not produced unconsciously like the sound produced during sleep or during some kind of mental disease. Such a sound must be significant. This also shows how the definition (4) is more exact and more developed than (1) and (2). The final specific difference of an attribute is therefore ontologically based on its cause.

The same also applies to thunder and eclipse in *Posterior Analytics* II 8. Take the causal definition of thunder, ‘noise in the cloud because of the extinction of fire’. To be sure, Aristotle nowhere states a logical definition of thunder. We may suppose that the logical definition of thunder is its causal definition minus the phrase specifying the proper subject ‘in the cloud’. Suppose that the genus is ‘noise’, the final specific difference will be ‘because of the extinction of fire’. Here the final specific difference is clearly ontologically based on the cause.

7.3. Conclusion

In this chapter, I have argued that, in the case of *infimae species*, the genus is merely analogous to the matter except in the case of geometrical objects, whereas the final specific difference is ontologically based on the form or the cause.

Since a logical definition is ultimately reducible to the final specific difference, which is ontologically based on the form or the cause, it corresponds perfectly to the pure causal definition and imperfectly to the impure causal definition. Such a correspondence explains why we can claim that the same entity possesses both logical essence and causal essence, without compromising the unity of its essence.

Conclusion

This study has developed a systematic account of Aristotle's essentialism based on the distinction between logical essence and causal essence, which are two complementary facets of Aristotelian essence. It has offered a comprehensive treatment of their historical origins, philosophical motivations, and the relation between them.

The study is divided into three parts, devoted respectively to logical essence, causal essence, and the relation between them.

In the first part, I have argued that the notion of logical essence originates in the Platonic 'What is it?' question and Plato's theory of Forms, and that Aristotle has added some twists to this notion so that it may fit his metaphysical and epistemological framework. I have further shown that the philosophical motivation for logical essence lies in the articulation of essence through essential predication. Moreover, I have proposed an account according to which we come to grasp the logical essence of something in three steps: induction, selection of essential predicates, and division.

In the second part, I have argued that the notion of causal essence originates in Aristotle's attempt to answer the question, 'What is the principle, or what are the principles, of something?' I have also shown that in *Posterior Analytics*, Aristotle develops this notion through two fundamental moves: the identification of the inquiry into 'what it is' and that into 'why it is', and the distinction between subjects and attributes. Further, I have argued that the notion of causal essence is philosophically motivated as a way of articulating essence through the causal explanation of the *definiendum*'s being, whether the *definiendum* is an attribute or a subject.

In the final part, I have examined the relation between logical essence and causal essence, focusing in particular on the case of *infimae species*. Against the literal interpretation of the ‘genus as matter’ thesis, I have argued that the genus is merely analogous to the matter or the proper subject. With respect to the relation between the final specific difference and the form or the cause, I have proposed that the former is ontologically based on the latter. This correspondence explains how one and the same entity can possess both logical essence and causal essence without compromising the unity of its essence.

The distinction between logical essence and causal essence should therefore not be understood as multiplying essences, but as revealing two complementary ways in which one and the same essence can be articulated. Logical essence captures the essence as expressed through essential predication, whereas causal essence captures the same essence insofar as it causally explains the being of the *definiendum*. This distinction thus preserves the unity of Aristotle’s notion of essence while accounting for its different functions in logic, metaphysics, and scientific demonstration.

Appendix: Bearers of Logical Essence and Causal Essence

Kinds of Existent Entities			Bearer of Logical Essence	Bearer of Causal Essence
categorical entities	particulars		√	√
	<i>infimae species</i>		√	√
	genera that are not <i>infimae species</i>		√	×
	forms	forms of natural substances	√	√
		forms of geometrical figures and artefacts	√	√
non- categorical entities	trans-categorical entities		√	×
	entities that function as higher-order predicates		√	×
	<i>per se</i> compounds		√	√
	accidental compounds		√	×
	matter or material parts of a composite subject		√	√

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