

Materiate Paronymy and the Logical Puzzle of *Metaphysics* Z.5

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In his article “The Definition of Generated Composites in Aristotle’s *Metaphysics*,” Michael Ferejohn examines a ‘logical’ puzzle in *Metaphysics* Z.5 which purports to demonstrate that ‘coupled things’ such as the composite ‘snub nose’ cannot be defined without producing an infinite regress of terms (291–300). In particular, according to this argument, the defining formula of ‘snub’ must include a reference to the term ‘nose’, which represents the matter of the composite, and consequently any attempt to define ‘snub nose’ will result in an infinite sequence of iterations of ‘nose’ (297–300). Aristotle considers the example of ‘snub nose’ significant, Ferejohn contends, because in an investigation of the definability of matter-form compounds such coupled items serve as substitutes for the more complicated biological composites that are understood as paradigmatic cases of primary substance (295–96). As Ferejohn proposes, the definability of ‘snub nose’ can be preserved by invoking a “paronymy thesis,” set forth in the ‘physical’ discussion of Z.7, according to which the matter of a composite such as ‘bronze statue’ should be mentioned only in an altered, adjectival form such as ‘brazen’ (300–8, 314–18). One might object, nevertheless, that if the reference to ‘nose’ in the formulae of ‘snub nose’ and ‘snub’ is replaced with the term ‘nasal’ or ‘nasally’, along the lines of Ferejohn’s suggestion, then the regress of iterations of ‘nose’ will simply be transformed into a regress of ‘nasally’ and the puzzle will remain problematic.

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This paper offers a different solution, one that likewise employs materiate paronymy to convert the term ‘nose’ into ‘nasally’ when defining ‘snub’ but that retains the noun ‘nose’, rather than the paronymous modifier, in the definition of ‘snub nose’. Maintaining the definability of biological substances, however, will depend on recognizing an important disanalogy between biological composites and the coupled things exemplified by a nose that happens to be snub: having the form of a living organism is essential to the existence of biological composites, but the form of snubness is merely an accidental property of the nose.

One should first consider Ferejohn’s interpretation of the crucial passage in *Metaphysics* Z.5, which furnishes a ‘logical’ treatment of the issue in the sense that it views the nature of ‘things that are’ from a static or synchronic standpoint, without taking into account change over time (292–93). He gives the following translation of the argument in outline form (297):

“But there is another puzzle (**ἀπορία**) about [‘coupled things’].
 If (1) snub nose and concave nose are the same,
 then (2) snub and concave will be the same.
 But if (3) this is not the case,
 [then] because
 (4) it is impossible to speak of snub without the
 thing of which it is a *per se* affection [namely the nose]
 (for snub is concavity in a nose),
 either (5) to say ‘snub nose’ is impossible,
 or (6) it will be saying the same thing twice: ‘concave
 nose nose’
 (for ‘snub nose’ will be ‘concave nose nose’).
 Therefore
 (7) it is absurd that essence should belong to such
 things,
 But if (8) this is not so,
 (9) there is an infinite regress
 (for in ‘snub nose nose’ there will be yet another ‘nose’).”
 (1030b28–1031a1)

As Ferejohn writes, statements (1), (3), and (4) constitute the “ultimate premisses” for this *aporia*, and it is assumed throughout that where expressions such as ‘snub nose’ and ‘concave nose’ are equated, they can be substituted for each other and terms appearing in both expressions can be canceled out (298). In other words, such expressions are “strongly equivalent,” as indicated by the notation ‘=*df*’, in such a manner that they obey a principle of cancellation,

(*) if $AB =df AC$, then $B =df C$,

which is implicit in the transition from (1) to (2) (289).

Tracing the line of argumentation in this passage, Ferejohn rephrases statement (1) as

(1') 'snub nose' =df 'concave nose',

from which he derives (2) by applying principle (*) and canceling 'nose' from both expressions. Then, as he writes, (2) is clearly false, since 'snub' and 'concave' are not co-extensional terms, leading to (3) and to an exploration of the apparent remaining possibilities for defining 'snub nose', controlled by the crucial assumption in (4) that any plausible defining formula must somehow include the term 'nose'. Under this constraint, either 'nose' is not mentioned and 'snub' is not definable, as in (5), or 'snub' is defined, in compliance with (4), as 'concave nose', so that 'snub nose' becomes 'concave nose nose', as in (6). Thus the argument relies on a suppressed step stating that, if 'snub' is definable at all, its formula must be given by

(4*) 'snub' =df 'concave nose'.

Ferejohn now proceeds to explain the argument of statements (7)–(9), construing (7) as a summary of the reasoning that led to the first alternative, represented by (5), in the case that 'nose' is not mentioned and 'snub' therefore lacks definition and essence (299). On the other hand, as (8) and (9) indicate, if 'snub' is defined, then an infinite regress is generated by a series of substitutions licensed by the equivalences (1') and (4*) when one attempts to give a formula for 'snub nose' (298–299).

In order to obtain the infinite regress, Ferejohn first applies (4*) to the word 'snub' to yield

'snub nose' = 'concave nose nose'

and then replaces the words 'concave nose' with 'snub nose' in accordance with (1'), giving

'snub nose' = 'snub nose nose' (299).

At this point one has arrived at the phrase 'snub nose nose' in which, as Aristotle remarks at the end of the passage, yet another 'nose' will be contained. What this observation means is that, by applying (4*) once more to the word 'snub' on the right-hand side, one has

'snub nose' = concave nose nose nose',

from which a reapplication of (1') to 'concave nose' generates

'snub nose' = 'snub nose nose nose' (299).

Continuing this procedure would produce an infinite sequence of the form

‘snub nose’ = ‘snub nose nose nose nose . . .’,

suggesting that ‘snub’ has no acceptable definition whatsoever, as (5) and (7) conclude (299–300).

One might note that a less complicated method of deriving the infinite regress than that delineated by Ferejohn would involve taking

(4*) ‘snub’ =df ‘concave nose’

as given and then substituting ‘snub nose’ for ‘concave nose’ as provided in (1’) to obtain

‘snub’ = ‘snub nose’.

From this equivalence it would follow that one could append any number of iterations of ‘nose’ after any appearance of the term ‘snub’ simply by expanding ‘snub’ into ‘snub nose’ the desired number of times.

Ferejohn seeks to resolve this puzzle and preserve the definability of composites such as ‘snub nose’ by appealing to what he calls the “paronymy thesis” of *Metaphysics Z.7*, where Aristotle engages in a ‘physical’ inquiry which considers material objects from a diachronic perspective as “things which come to be” (301-308).

According to the paronymy thesis, if the product of a substantial change is generated out of some persisting substratum or matter, then the product is described not by the name of the substratum but by a paronymous adjective derived from that name (307–8). Thus, for example, one should speak not of the ‘bronze statue’ but of the ‘brazen statue’, and in general, if ‘that’ (**ἐκείνο**) is the persisting substratum, one should call the product not ‘that’ but ‘of-that’ or ‘thaten’ (**ἐκείνῳ**) (307; *Z.7* 1033a6–8). The matter cannot properly be conceived as ‘that from which’ the product comes to be, because the entity from which something genuinely comes to be is necessarily replaced in substantial change, whereas the matter of the product remains during the change (304). With this kind of paronymy, which one might call materiate paronymy, the matter is not directly named, although its involvement as the substratum for the generation of the product is obliquely indicated. As Ferejohn explains, directly naming the matter would “lead into a deeply confused idea of the very nature of a material substratum, namely that it is something that possesses its own individuating nature which is independent of what forms happen to be imposed on it” (304).

Materiate paronymy proves crucial, Ferejohn contends, because Aristotle claims, in his concluding summation of *Z.11*, that a hylomorphic

compound has no defining formula “with matter” but that it does have a formula “[according] to its primary substance,” one which, in Ferejohn’s interpretation, mentions the matter in some way (313–17). Aristotle indicates in Z.11 that the forms of biological composites can be instantiated only in particular kinds of matter and that these biological substances are essentially ‘this in that,’ a certain form in a certain sort of matter (314–15). Consequently, Ferejohn asserts that the defining formulae of both biological composites and coupled things such as ‘snub nose’ must incorporate some reference to the matter, even though a formula “with matter,” i.e., one directly naming the matter as a noun, would improperly represent the matter as a determinate individual (313–14). Drawing on Aristotle’s statement at 1037a29–30 that the primary substance is the ‘indwelling form,’ Ferejohn argues that to define the composite according to the primary substance is to give a formula of its form as indwelling or as enmattered (316). For instance, if the formula of the human soul, the form of a human, is ‘XYZ’, then the definition of human would be ‘XYZ in flesh, blood, etc.’, and if the formula of concavity is ‘PQR’, then the definition of snubness would be ‘PQR in a nose’ (316). This indirect way of referring to the matter can also use a paronymous adjective rather than a prepositional phrase, showing how the paronymy thesis can provide a solution to the logical puzzle of Z.5, which would otherwise threaten the definability of not only coupled items but also biological composites (316–17). In particular, if the formula of ‘snub’ were to include not the noun ‘nose’, but merely the adjective ‘in-nosed’ or ‘nosen’, then one could reject (4*) as the only possible definition of ‘snub’ satisfying the condition in (4) that the matter must somehow be mentioned, and thereby avoid infinite regress (317–18).

While Ferejohn does not elucidate in complete detail the manner in which the paronymy thesis is supposed to prevent the infinite regress, one can provide an approximate reconstruction that will also allow one to discern an important weakness in his argument. ‘In-nosed concavity’ and ‘nosen concavity’ seem to be appropriate defining formulae for the form of snubness but not the modifier ‘snub’, a term that is applied to ‘nose’ to indicate that the nose has the property of being concave. Therefore, to ensure that the definition of ‘snub’ is an expression that can be applied adjectivally to ‘nose’, one might more idiomatically employ the paronymous adverb ‘nasally’ and adopt the following as the official replacement for the problematic equivalence in (4*):

(S) ‘snub’ =df ‘nasally concave [thing]’.

However, given that the paronymy thesis is applicable to snub noses, then because this thesis directs one not to refer directly to the matter as a noun

whenever one speaks of the relevant product, it appears that statement (1'), defining 'snub nose' as equivalent to 'concave nose', should be reformulated as well. Using the paronymous adverb, 'snub nose' can thus be defined in two stages as follows:

(1''a) 'snub nose' =df 'nasally snub [thing]'

(1''b) 'nasally snub [thing]' =df 'nasally concave [thing]'.

One can then use (S) to substitute 'nasally concave' for the word 'snub' in (1''a), producing

'snub nose' = 'nasally nasally concave thing',

and exchange 'nasally concave' with 'nasally snub' in accordance with (1''b) to obtain

'snub nose' = 'nasally nasally snub thing'.

Repeating the application of (S) and (1''b) to the word 'snub' on the right-hand side gives

'snub nose' = 'nasally nasally nasally snub thing'

and so on *ad infinitum*, generating an infinite sequence of iterations of 'nasally' in place of the original regress of iterations of 'nose'.

A different solution must therefore be found to maintain the definability of 'snub nose' that avoids both the regress of 'nose' and the regress of 'nasally', and it seems most promising to restrict the applicability of the paronymy thesis to either 'snub' or 'snub nose' alone, rather than both. In the example of the bronze statue with which Aristotle illustrates materiate paronymy, the form of statue is essential to the existence of the composite substance, because the composite is essentially a statue; melting down the statue into liquid bronze would destroy the unity of the material object as a determinate individual with a clearly defined form. One would have only a mass of liquid bronze without any permanent shape, instead of 'a certain this' (or **τόδε τι**), and even reshaping the bronze into a new solid object would not merely alter the form of the original composite but actually destroy one substance and generate another. Unlike the bronze statue, the composite described as a 'snub nose' is essentially a nose and accidentally snub, and the nose considered without reference to snubness already possesses sufficient structure and functionality to be a determinate individual. If the composite were to change its shape over time and no longer be snub, it would remain a nose by virtue of its characteristic function as a part of the organism.

Whereas 'bronze' is a predicate applied to 'statue', the subject, to indicate the material constitution of the composite, 'snub' is a predicate

applied to 'nose', the subject, to indicate the accidental form assumed by the composite. As Aristotle writes in *Sophistical Refutations* 31,

For 'concave' has a general meaning which is the same in the case of a snub nose, and of a bandy leg, but when added, in the one case to nose, in the other to leg, nothing prevents it from meaning different things; for in the former connexion it means snub and in the latter bandy; and it makes no difference whether you say snub nose or concave nose. (Pickard, 181b337-182a2)

Thus 'snub' and 'concave' are both modifiers that bear the same meaning when applied to 'nose', signifying that the nose has a certain shape, while the composite, to which 'nose' refers, remains the same regardless of whether it is described as snub or as concave. This point, combined with the observation that 'nose' signifies a determinate individual, suggests that the presence of the noun 'nose' in 'snub nose' is not improper, in contrast to that of the noun 'bronze' in 'bronze statue'. One could therefore justifiably reject (1''a) and (1''b), and retain

(1') 'snub nose' =df 'concave nose',

because both of these expressions are used to identify the entire composite, the nose that happens to be snub. On the other hand, the paronymy thesis should remain applicable to the definition of 'snub' considered on its own, since the term 'snub' is intended to signify that the composite has a certain form, the form of snubness, and referring directly to the matter with the noun 'nose' in this context would be inappropriate. If 'snub' and 'concave' are to have the same meaning when applied to 'nose', then 'snub' should be equated not with a certain sort of nose but with the predicate 'concave' restricted to a certain domain of application, namely to noses. Consequently one should accept (S) in preference to (4*), enabling one to avoid the infinite regress in the definition of 'snub nose'.

Expanding the formula of 'snub nose' according to (S) would produce

'snub nose' = 'nasally concave nose'

but since 'concave' is restricted in its domain of application by the adverb 'nasally', the last two words 'concave nose' cannot be detached and regarded as an independent unit. Therefore one cannot replace 'concave nose' with 'snub nose' by appealing to (1'), forestalling the advance to 'nasally snub nose' and preventing an infinite sequence of either 'nose' or 'nasally' from arising.

At this point, with an effective solution to the logical puzzle concerning ‘snub nose’, it would be useful to inquire whether, as Ferejohn suggests, the snub nose serves as a model for biological substances in the sense that the definability of a biological composite can be preserved in the same way as that of ‘snub nose’. If one considers the phrase ‘human body’, for instance, in analogy with ‘snub nose’, treating ‘human’ as the predicate indicating that the composite has a certain form, in this case the human soul, and ‘body’ as the term referring to the matter, then the parallels to (1’) and (4*), with ‘human-souled’ substituted for ‘concave’, would be

(A1) ‘human body’ =df ‘human-souled body’

(A2) ‘human’ =df ‘human-souled body’.

By transitivity of identity, ‘human’ could then be equated with ‘human body’, allowing one to expand any occurrence of ‘human’ into an expression consisting of ‘human’ followed by any number of iterations of ‘body’ and generating an infinite regress. Materiate paronymy would produce expressions corresponding to those in Ferejohn’s own proposal for ‘snub nose’, namely

(B1) ‘human body’ =df ‘embodied human-soul’

(B2) ‘human’ =df ‘embodied human-soul’,

but ‘human’ could once more be equated with ‘human body’, again producing an infinite regress.

Nevertheless, it would also be inappropriate to return to (A1) and posit an equivalence between ‘human body’ and ‘human-souled body’, as between ‘snub nose’ and ‘concave nose’ in the preceding discussion, because the paronymy thesis remains valid in the case of ‘human body’. While snubness is merely an accidental form of the nose that happens to be snub, Aristotle clearly maintains that the body of a living organism does not continue to exist, except homonymously, after the death of the organism, when its form or soul is no longer present.¹ It follows not only that the body, once deprived of life, no longer constitutes a determinate, unified individual, unlike the nose that persists as the same individual even if it does not remain snub, but also that the body is no longer even the same sort of matter. To resolve this issue, one might observe that, even though the matter should not be directly named with the noun ‘body’ in the definition of ‘human body’, the expression ‘human body’ refers to the

¹ See *De Anima* II.1 412b13–15, 20–22 and *Metaphysics* Z.10 1035b23–25, Z.11 1036b30–32 (Irwin and Fine).

compound substance of matter and form, not to the soul exclusively, just as ‘snub nose’ refers to the entire composite. Consequently, the defining formula of ‘human body’ should be neither ‘human-souled body’ nor ‘embodied human-soul’, but should instead have as its subject, in noun form, a term referring directly to the composite as a whole, without prejudicing either the matter or the form. A particularly felicitous choice might be ‘human being’, which emphasizes the importance of a distinctive function or activity to the living, active body that must be identified as the true proximate matter of the biological composite. One can thus replace (B1) with

(B1’) ‘human body’ =df ‘embodied human being’

yet retain (B2), given that ‘human’ is a term indicating that the composite has a certain form, thereby foreclosing the possibility of equating ‘human’ with ‘human body’ and preventing the regress.

In sum, then, this paper has examined Ferejohn’s account of the logical puzzle of *Metaphysics* Z.5 and has shown that his proposed solution to that puzzle is potentially vulnerable to the same sort of infinite regress that he is attempting to avoid, if the proposal is explicitly formalized and the paronymy thesis is assumed to be applicable to both the modifier ‘snub’ and the composite ‘snub nose’. It has also outlined an alternative solution that deflects this difficulty and maintains the definability of ‘snub nose’ by holding that the paronymy thesis applies only to the term ‘snub’, and has then extended this analysis by exploring further nuances in the relation of the paronymy thesis to paradigmatic biological substances such as human beings.

Significantly, one can now discern a crucial methodological principle animating the preceding discussions: the idea that the paronymy thesis may be applicable in different ways or degrees to different sorts of hylomorphic composites precisely because the terms referring to the matter of a composite may identify a more or less determinate and more or less individuated physical entity. While the ‘nose’ of ‘snub nose’ identifies a structured object that can exist without being snub, the ‘bronze’ of ‘bronze sphere’ refers to a type of matter that does not remain a definite individual once it loses its spherical form, and, at the extreme, the proximate matter signified by the ‘body’ of ‘human body’ would not even continue to exist if the form is removed.

One can gain a sense of the possible broader utility of this principle in the study of Aristotle’s metaphysics by noting that it furnishes a new perspective on a quite general question first posed by J. L. Akrill. If, as he writes, an organic body is compared to the bronze and an animal to the bronze sphere, and if form and matter are understood in such a way that it must be possible to conceive of the matter without the form, then it seems

inconsistent for Aristotle to claim that the organic body could not persist, except homonymously, after the animal's death (120, 124–27). The analysis in the present paper suggests that one could reply to Ackrill by observing that the body of a living organism and the bronze of a bronze sphere are not completely analogous, because the character of each material substrate depends on the form of the relevant composite in a distinct way. In particular, in the absence of the soul, not only does the biological substance not exist as a determinate individual, but the body, in contrast to the bronze, does not even exist as the same sort of matter. Indeed, since the idea of the body as a particular sort of matter is inextricably linked to that of the soul, it is appropriate that the defining formula of 'human body', an expression that apparently refers principally to the matter, should instead refer principally to the composite, as in 'embodied human being'.

Works Cited

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