

Aristotle's Alternative to Referential Opacity

I

In a number of different places, Aristotle seems to be committed to the doctrine of referential opacity. That is, he appears to hold that, in certain contexts, substitution of co-referential expressions may fail to be truth-preserving. He says, for example, that one can know Coriscus, but not know the masked man, even though Coriscus is the masked man (*SE* 179^a33ff). It would seem that the expressions “Coriscus” and “the masked man” both refer to the same man, and that it is true that you know Coriscus, but not true that you know the masked man. Or again, Aristotle holds that a man is a substance, but a pale man is not a substance,¹ even though the man and the pale man in question are the same man, say, Coriscus. So “the man is a substance” is true, but “the pale man is a substance” is not true, even though the expressions “the man” and “the pale man” both refer (in this context) to Coriscus.

It is far from clear, however, that this is an accurate account of Aristotle's position. According to a number of recent authors,² Aristotle would deny that the expressions in question are co-referential. And if Aristotle thinks that “Coriscus” and “the masked man” do not refer to the same thing, then he cannot think that the puzzling case of Coriscus and the masked man is an example of referential opacity.

There is thus an alternative account according to which Aristotle deals with these puzzles of substitutivity by offering a peculiar, fine-grained, ontology that distinguishes between objects that are normally counted as identical. The reason that you know Coriscus, but do not know the masked man, is that Coriscus and the masked man are not really identical, in spite of the fact that there is just one man wearing a mask, namely Coriscus. One might raise a number of questions about this ontology. Two of the more obvious ones are: (1) what is the relation between Coriscus and the masked man, and (2) given that they are distinct, what kinds of entities are they?

The answer to (1), according to the fine-grained ontology, is that Coriscus and the masked man are what Aristotle would call *accidentally* the same³ or accidentally one.⁴ That is, they are distinct entities that may, for a time, at least, *coincide*; in that sense they may be, for a time, at least, one in number. For Coriscus and the masked man are not two men — indeed, they are not two of anything.⁵ That they are distinct entities (*onta*) does not, in Aristotle's view, make them

¹ *Metaph.* Z.6, 1031^a20-25. What Aristotle actually says is that a man is the same as his essence, but a pale man is not the same as his essence. But it is clear that he thinks that substances, and only substances, are the same as their essences.

² The pioneering study is White [1971]. Related discussions may be found in Code [1976], Cohen [1978], Lewis [1982], and Matthews [1982].

³ Cf. *Metaph.* Δ.9, 1017^b31: “both *the man* and *the musical* are said to be the same [in the accidental sense] as *the musical man*.” Cf. also *Top.* 103^a30.

⁴ Cf. *Metaph.* Δ.6, 1015^b17: “Examples of things that are accidentally one are Coriscus and *the musical* and *musical Coriscus*.” Clearly, this is not a list of three accidental unities, since Coriscus is one *per se* and not *per accidens*. Rather, Coriscus and *the musical* are accidentally one; Coriscus and *musical Coriscus* are accidentally one.

⁵ Matthews [1982], p. 226.

two. For “entity” has a variety of senses (as Aristotle puts it, “*entity* is said in many ways”⁶), and there is no one sense of “entity” in which both Coriscus and the masked man are both said to be entities. This leads us to a preliminary answer to question (2). *Entity*, in its primary sense, applies to things in the category of substance, independently existing things such as a man or a horse. Coriscus is an item in the category of substance, but the masked man is not.⁷

Aristotle’s fine-grained ontology has been given a number of different formulations. Lewis [1982] offers an idealization of it that he calls “accidental compound theory;” Matthews [1982, 1992] calls it the “theory of kooky objects;” according to White [1986] it is a doctrine of “modal individuation.” There are important differences between these formulations that we will need to look into later. But the rough sketch provided so far, which (I think) fits them all, will be sufficient for present purposes.

The evidence that Aristotle employs the notions of accidental sameness and accidental unity is compelling and well documented. Still, many interpreters resist the suggestion that Aristotle adheres to this fine-grained ontology. Instead of taking the relation of accidental sameness to rule out identity, they construe accidental sameness as *contingent* identity.⁸ If this is so, it may seem as if Aristotle does, after all, see the Masked Man paradox as evidence of opacity. Coriscus and the masked man are identical, so it is puzzling that you can know the one but not the other. The solution to the puzzle would be that they are only contingently identical, and contingent identity between the referents of co-referential expressions is insufficient for substitutivity of those expressions in epistemic contexts.

Now Aristotle would surely admit that it is a contingent fact that Coriscus and the masked man are one and the same. But this is not to say that the contingent fact is that they are identical. Rather, what is contingent is that two nonidentical entities coincide. Although many of the things Aristotle classifies as accidentally the same might be considered contingently identical by proponents of that notion, accidental sameness, as he conceives it, is not contingent identity.⁹ For according to Aristotle, things that are accidentally the same are in a way the same, and in a way different. But if x is contingently identical to y , x does not stand to y in some relation weaker than identity. Rather, it is supposed to be a contingent fact that x stands to y in the full-blooded relation of identity. So the contingent identity solution cannot be Aristotle’s solution to the puzzle.¹⁰

There is, in any event, ample evidence that, for Aristotle, things that are accidentally one and the same are not identical. In *Phys.* I.7, he tells us that when a man becomes musical, the man survives but the unmusical does not. It might seem that it is only the attribute of unmusicality, or perhaps the man’s own peculiar bit of unmusicality, that Aristotle is supposing to perish when the man becomes musical, but he quickly dispels that impression: “the man survives, but the unmusical

⁶ Cf. *Metaph.* Γ.2 (esp. 1003^a33-^b5), E.2 (esp. 1026^a34-^b26), Z.1 (esp. 1028^a10-30), K.3 (1060^b32-1061^a10).

⁷ Precisely how the masked man fits into Aristotle’s categorial scheme is a complicated question, which we will postpone for now.

⁸ Barnes [1979] makes this suggestion.

⁹ A convincing case for this has been made by Matthews [1982], pp. 228-9.

¹⁰ A notion of contingent identity like that developed by Stephen Yablo [1987] comes a lot closer to Aristotle’s idea. But on Yablo’s account, contingently identical things are not, strictly speaking, identical. So contingent identity for Yablo, like accidental sameness for Aristotle, is not a species of identity.

does not survive, *nor does the compound of the two, namely the unmusical man*" (190^a19-21). So the man and the unmusical man are not identical, since one can survive the onset of musicality, while the other cannot.

A determined defender of the view that accidental sameness is a kind of identity might well protest that one cannot so easily establish the non-identity of things that are accidentally the same, such as the man and the unmusical man. For Aristotle does not say that they are not identical. He only says that the man survives and the unmusical man does not. That is, the man has a property that the unmusical man lacks; they are discernible. We can infer their non-identity from this fact only if we are entitled to use a principle of indiscernibility of identicals:

If x is identical to y , then x is F if and only if y is F .

Are we entitled to ascribe this Leibnizian principle to Aristotle? The evidence is not altogether clear. At *Topics* 152^b25-29, Aristotle says that of things that are the same (*tauton*), whatever is predicated of the one may be predicated of the other. But there are two difficulties here. First, if we were to apply the principle Aristotle expresses at *Topics* 152 to our example from the *Physics*, we would conclude that the man and the unmusical man are not the same. But Aristotle should be unwilling to draw that conclusion, since he holds that the man and the unmusical man are, in a sense, the same (*viz.*, accidentally the same). Second, it emerges later, in his discussion of the Masked Man paradox, that Aristotle offers an emendation of his earlier principle. Let us turn to that discussion.

Aristotle presents the paradox as an example of the fallacy of accident. According to his official account in the *Topics*, one commits this fallacy when one infers that what holds of a thing also holds of its accident, or conversely (*tôî pragmati kai tôî sumbebêkoti huparkhein*, 166^b29ff). If one thinks of an accident of x as an attribute that belongs to x accidentally, one may well suppose that Aristotle has in mind the bizarre fallacy of attributing to a thing an attribute of one of its attributes. Such a fallacy would be committed, for example, by someone who inferred that Socrates is himself a quality since pallor, one of his attributes, is a quality. But although the examples he gives here are not at all helpful,¹¹ it is evident that this is not the kind of fallacy

¹¹ His two examples are these: (1) Coriscus is different from a man, and Coriscus is a man, therefore, Coriscus is different from himself; (2) Coriscus is different from Socrates, and Socrates is a man, therefore, Coriscus is different from a man. About (2) Aristotle comments tersely that "it is an accident of that from which he has been said to be different that it is a man" (166^b36). But the thing from which Coriscus has been said to be different is Socrates; does Aristotle mean to say that it is an accident of Socrates that he is a man? Although it seems scarcely credible, this does seem to be Aristotle's point. The conclusion of (2) is derived from the first premise by substituting, on the strength of the second premise, the name of the accident ("a man") for the name of what it is an accident of ("Socrates"). Even if we take the "accident" here to be (as suggested in the text) the thing that **has** the accident, we still have the odd consequence that Aristotle would be claiming that "Socrates is a man" is a statement of accidental sameness.

So it is difficult to see how these examples either fit the general characterization of the fallacy or correspond to the cases Aristotle subsequently discusses, such as the Masked Man. One might argue that what is accidental in (2) is that it is Socrates, or even that it is a man at all, that has been picked out by the description "thing different from Coriscus." Perhaps that is what Aristotle means when he says that *being a man* is an accident of the thing that is different from Coriscus. But that still does not explain how "accident" is involved in the substitution of "Coriscus" for "a man" in (1), or "a man" for "Socrates" in (2).

Another possible interpretation, perhaps rather far-fetched, is this: Premise one tells us that Socrates is the same, but only accidentally the same, as *the thing that is different from Coriscus*. So although (premise two)

Aristotle has in mind. Rather, he is thinking of a kind of fallacy that would be committed by someone who fails to distinguish entities that are easily confused with one another. And it is hard to imagine that he thinks that Socrates and pallor are easily confused.

In his account of the fallacy, what he is calling an “accident” is not an attribute, but rather something that, as we would say, might or might not **have** the attribute. When he gives the Masked Man paradox as an example of the fallacy of accident, he identifies Coriscus as the “thing” and *the <one> approaching* or *the masked <one>* as the “accident.” The fallacy consists in illegitimately transferring an attribute (that of being known) from Coriscus to what he here calls an “accident” of Coriscus, i.e., to something accidentally the same as Coriscus, namely, the masked (one).

It is no accident (if I may say so) that Aristotle wants to call such things as *the masked <one>* accidents. For, as we shall see, such kooky objects play a crucial role in Aristotle’s account of accidental predication. The idea, roughly, is that for an attribute to belong accidentally to a subject is for that attribute to belong essentially to a different entity, one that coincides with, i.e., is one in number with, but only accidentally the same as, the subject.

Once again it is evident that accidental sameness is weaker than identity. For if x and y are accidentally the same, it does not follow that x and y have all the same attributes, i.e., that they are indiscernible. Among things that are one in number, it is only things that are “undifferentiated in substance and one in being” (179^a37), Aristotle tells us, that are guaranteed to have all the same attributes. Hence, contrary to what Aristotle had said earlier, sameness simpliciter is not sufficient for indiscernibility. The emended principle looks like this:¹²

Of things that are the same *in substance and in being*, whatever is predicated of the one may be predicated of the other.

But what exactly does the emendation amount to? Is Aristotle telling us that only some identicals are indiscernible, namely, those that are the same in substance and in being?¹³ Or is he telling us that only some cases of sameness in number are cases of identity?¹⁴

Socrates is (essentially) a man, it does not follow that *the thing that is different from Coriscus* is (essentially) a man. For, as Aristotle comments, the conclusion is false (that thing is only accidentally a man). The inference fails because the first premise cites a case of accidental sameness rather than genuine identity. The difficulty here is that the premise “Coriscus is different from Socrates” would have to be both converted and interpreted as a statement of accidental sameness: “Socrates is (accidentally) the same as *the thing that is different from Coriscus*.”

¹² The emended principle also appears at *Physics* 202^b15: “For not all of the same [predicates] belong to all things whatsoever that are the same, but only to those whose being is the same.”

¹³ See, for example, Hussey [1983], p. 69, who takes Aristotle’s point at *Physics* 202^b15 to be that “‘Leibniz’s Law’ need not be true unless there is sameness ‘in being’ or ‘in definition’, **on top of ordinary identity**” (emphasis mine).

¹⁴ Another possible interpretation, that I reject, is this: only essentially (i.e., definitionally) equivalent *expressions* are intersubstitutable *salva veritate* in all contexts (including modal and epistemic contexts). This is not an account of the strictest kind of sameness relation among *entities*; it is an account of substitutivity of *expressions*. But Aristotle is not talking about expressions; he is talking about entities (*onta*).

If Aristotle's point is that only some identicals are indiscernible, his position threatens to be incoherent. For his point at 179^a37, on this showing, would be that Coriscus and the masked man, although they are identical, are nevertheless discernible, and hence not the same in substance and in being. But if they are identical, they are one and the same thing. And so on this showing Aristotle must hold that one and the same thing is discernible from itself and not the same as itself in substance and in being. Such a view should not lightly be attributed to Aristotle.¹⁵

Therefore if Aristotle has a coherent point to make here, it must be that sameness in number is a generic notion. One of its species is identity, which, according to Aristotle, holds only between things that are the same in substance and in being; another is accidental sameness, a relation that can hold between things that are not identical. But indiscernibility remains Aristotle's criterion of identity.

What, then, is "sameness in substance and in being"? Nicholas White suggests, plausibly enough, that it is sameness in *definition*.¹⁶ Suppose, for example, that Socrates is now pale, has always been pale, and will be pale for as long as he lives. Still, Socrates and the pale man with whom he coincides at all actual times and places are nevertheless distinct objects, since they differ in definition.¹⁷ Since being pale is not part of the definition of Socrates, he might not have been pale. So Socrates is not identical to the pale man he happens to be. According to this criterion of identity, objects are, as White says, individuated modally. And modal individuation obviously yields a fine-grained ontology such as the one under discussion.

The interpretation I have proposed is further reinforced by what Aristotle goes on to say about the Masked Man paradox. He considers and rejects a different solution, according to which it is possible to know and not to know the same thing, but not in the same respect. (Presumably, by "the same thing" here Aristotle means something that he would say is one in substance and in being, and not merely what *we* would call the same thing but that he would say are two things accidentally the same.) He admits that it is possible to know something in one respect but not another, as one might know that someone is pale, but not know that he is musical (179^b30). But that is not what is happening in the Masked Man paradox, he claims. For you know that Coriscus is Coriscus, and that the one approaching is the one approaching. So if there is just one entity involved here, as the solution he rejects would have it, then you know that entity — Coriscus, the one approaching — in *both* respects. That is, you **do** know, contrary to hypothesis, that the one approaching is Coriscus. So the solution fails. Hence there must be two entities involved, one of which you know (to be Coriscus), and one of which you do not know (to be Coriscus). Aristotle firmly rejects the idea that Coriscus and the masked man are identical. He thus shows no tendency to believe that the context generated by "knows" is referentially opaque.

There is thus only a superficial similarity between Aristotle's and Frege's treatments of this kind of puzzle. Although both maintain that expressions that appear to be co-referential are not really so, Aristotle's solution is far more radical than Frege's. For while Frege holds that the

¹⁵ For a compelling argument that Aristotle does not propose to limit the indiscernibility principle in this way, see Matthews [1982] pp. 233-35.

¹⁶ White [1986] pp. 479-80.

¹⁷ Sameness of definition for concrete particulars in the same species, such as Socrates and Coriscus, is not sufficient for identity, for they are not the same in number. Identity is, properly speaking, sameness in definition and in number.

reference of an expression may be different from its normal reference when it occurs in certain (oblique) contexts, Aristotle does not suppose that the reference of an expression may vary, depending on the context. On his account, “Coriscus” and “the masked man” do not have (what Frege would call) the same reference in *any* context.

How well does Aristotle’s solution work? The answer is not altogether clear. Certainly, not all substitutivity puzzles are amenable to the treatment Aristotle proposes. Cicero and Tully, for example, are identical, not merely accidentally the same. So Aristotle’s solution to the Masked Man paradox will not help us to understand how one can believe that Cicero, but not Tully, denounced Cataline.

Nor is this shortcoming limited to cases in which the intersubstituted expressions are proper names; Cicero and Tully are just a special case of things that are the same in definition. Thus, Coriscus may be the same in definition as *this man*, and yet it would seem possible to know that Coriscus is approaching without knowing that this man is approaching, if one does not know that Coriscus is a man. The problem arises because it seems to be possible to recognize something (in some sense) without knowing (strictly speaking) what it is. Indeed, Aristotle’s idea that essence is discovered seems to commit him to this possibility.

On the other hand, there are passages where Aristotle expresses the contrary idea that such cases are not possible, and that “there are no mistakes about essence.”¹⁸ It is likely, however, that he would try to assimilate such cases to ones involving kooky objects. In *De Anima* III.6 (431^b27), after pointing out that “thinking of the definition in the sense of what it is for something to be is never in error,” Aristotle concedes that “seeing whether the white object is a man or not may be mistaken.”

Suppose that I don’t know that Coriscus is a man, but still, in some sense, know that Coriscus is approaching. I must have some way of picking out the thing I take to be approaching. If I pick it out as *the pale thing*, then it isn’t really Coriscus that I know to be approaching, but rather the pale thing. If I succeed in really picking out Coriscus, rather than something accidentally the same as Coriscus, I will have to pick him out as a man. So I will, after all, know that a man is approaching.

II

Our results thus far suggest that Aristotle’s fine-grained ontology gave him an alternative way of dealing with puzzles that today provoke a diagnosis of referential opacity. But there is also evidence that Aristotle sometimes approached such puzzles without this fine-grained ontology in mind, and we must now turn to that evidence.

Aristotle uses a certain technical device to indicate when a predicate’s belonging to a subject is connected to the way the subject is described or specified. If a doctor builds a house, Aristotle tells us, he does so not *qua* doctor, but *qua* housebuilder (*Phys.* 191^b4ff). On one reading, Aristotle is simply noting that the doctor who builds a house is acting as a housebuilder and not as a doctor when he does so. But he might also be taken to mean something more; for “*qua*” has been claimed to be the ancestor of the contemporary notion of “under a description.”¹⁹ Even if

¹⁸ Cf. *Metaph.* 1051^b25, 1027^b26; *De An.* 431^b27; and White [1986] 482.

¹⁹ At any rate, this is what Elizabeth Anscombe, who developed the notion, tells us: “‘under the description’ is ‘*qua*’, or Aristotle’s ‘*hêi*’ in modern dress” (Anscombe [1979], p. 219).

the doctor and the builder are the same man, say Polyclitus, it is under the description “builder,” it might be argued, that it is true to say that Polyclitus built the house. Under the description “doctor,” the argument goes, it is not true to say this. So construed, the *qua*-locution seems to provide a diagnosis that invokes the doctrine of referential opacity. Substitution of co-referential expressions fails, Aristotle seems to be telling us, when the question of whether a certain predicate attaches to a subject depends on more than just the *identity* of the subject. Some predicates induce opacity by attaching to their subjects only via descriptions — *qua* this but not *qua* that.

It may seem puzzling, however, that Aristotle should think that the predicate *builds* induces referential opacity; it seems straightforwardly transparent. Whether or not it is true to say that Polyclitus has built a house should not depend on how we describe him. But to say that Polyclitus has built the house is to say that he is its efficient cause, and to be a cause is to be an explanatory factor. Since the production of the house can be “explained” by referring to Polyclitus not *qua* doctor but *qua* builder, it seems at least intelligible that Aristotle should have thought that whether or not it is true that Polyclitus built the house depends on how he is described.²⁰

Of course, if we can assimilate Aristotle’s use of the *qua*-locution to the theory of kooky objects, we will not be forced to this conclusion. That is, if we take the expressions “Polyclitus *qua* builder” and “Polyclitus *qua* doctor” to designate the two distinct kooky objects *the builder* and *the doctor*, respectively, then the fact that it is true that Polyclitus *qua* builder built the house and false that Polyclitus *qua* doctor built the house need not be evidence of opacity. Since Polyclitus *qua* builder is not identical to Polyclitus *qua* doctor, the two statements’ subject-expressions are not co-referential, and there is hence no evidence here of opacity.

But one might argue that Aristotle does not have his fine-grained ontology in mind in passages where he uses the *qua*-locution. On this account when Aristotle says that Polyclitus *qua* builder built the house, he is not predicating *builds* of the kooky object, Polyclitus *qua* builder, but attaching the complex predicate, *builds qua builder*, to the ordinary object, Polyclitus. If we take the *qua*-clause to attach to the predicate, not to the subject,²¹ we are treating the logical form of “*x qua F is G*” as

x is (G qua F)

rather than

(x qua F) is G.

So construed, *qua*-sentences would not introduce kooky objects at all, and so we could not appeal to kooky objects in an attempt to avoid the conclusion that the *qua*-locution induces referential opacity.

Must we, then, conclude that Aristotle uses the *qua*-locution as a signal of opacity? I do not think so. For even if the two expressions, “Polyclitus *qua* doctor” and “Polyclitus *qua* builder”, do not refer to two distinct (kooky) objects, that does not make them co-referential. What we should say, I think, is that they are not, properly speaking, referring phrases at all. This, at any rate, is the

²⁰ For more on this point, see Spellman [1990], p. 20, and the works she cites on p. 31, n. 13.

²¹ Anscombe [1979], p. 219, cites *Prior Analytics* A.38 in support of this reading of *qua* clauses. But the passage is obscure, and is even taken by one interpreter (Smith [1989] p. 170) to be making exactly the opposite point.

conclusion we should reach if we think that the *qua*-clauses attach to the predicate, not to the subject. Although

1) Polyclitus *qua* builder builds

is true, while

2) Polyclitus *qua* doctor builds

is false, (1) and (2) contain different predicates. (1) attributes to Polyclitus the property of building-*qua*-builder; (2) attributes to him the property of building-*qua*-doctor. And there is nothing puzzling about the fact that Polyclitus has the first and lacks the second of these properties. For everything that builds has the first property, and nothing at all has the second.

The reason that nothing has the property of building-*qua*-doctor is just that if you are going to specify that-*qua*-which someone is a builder, *doctor* is never the right answer. So what makes (2) false, given that Polyclitus is, indeed, a builder, is that it is not *qua* doctor that he is a builder. Aristotle makes this clear in his discussion in the *Physics* passage cited above. It is only *qua* builder, and not *qua* doctor or *qua* anything else, that it is true to say of Polyclitus either that he builds or that he does not. Aristotle carefully attaches the negation sign to the *qua*-clause, not to the unmodified predicate.

We are now in a position to see why Aristotle did not find anything puzzling in the fact (1) and (2) could differ in truth value. A *qua*-clause, for Aristotle, introduces a feature of a subject that is **salient** with respect to a certain predicate's belonging to it. That is, to say that x *qua* F is G is to say that with respect to predicating G of x , the salient feature of x is that it is F . Obviously, with respect to Polyclitus's doing any building, his being a doctor is not a salient feature. And since his being a doctor does not prevent him from building, it does not provide a description of him under which it is false to say that he builds.

What saliency amounts to in more precise terms is less clear. A promising idea is this: to say that x *qua* F is G is to say that x 's being G either follows from, or is explained by, the fact that x is F together with certain other relevant necessary or scientific truths. To say that it is not *qua* F that x is G is to say that x 's being G neither follows from, nor is explained by, the fact that x is F together with certain other relevant necessary or scientific truths. For example, it is *qua* human, but not *qua* animal, that Socrates is rational; for it follows from his being human, but not from his being an animal, that he is rational.

So whether or not they introduce kooky objects, *qua*-sentences are not a breeding ground of referential opacity. Either *qua* attaches to the subject (and introduces a kooky object) or it attaches to, and thereby modifies, the predicate. In either case the *qua* does not indicate that whether a predicate attaches to a subject depends on how the subject is described.

III

The theory of kooky objects can explain away many cases in which substitutivity of co-referential expressions appears to fail. But the explanation it offers is only as plausible as the claim that the cases involve accidental sameness. Are there other grounds for finding the doctrine of referential opacity in Aristotle? Sandra Peterson has offered an ingenious argument to show that there are.²² According to the theory of kooky objects, Socrates is not identical to, but only

²² Peterson [1985].

accidentally the same as, a pale man. Hence, the fact that it is true that Socrates is a substance, but false that the pale man is a substance, does not show that the context "... is a substance" is referentially opaque. But now consider the secondary substance (i.e., the species) *man* and its differentia *biped pedestrian*. They are, Peterson says, the same **class**, and not merely accidentally so: "man is necessarily the biped pedestrian and vice versa" (p. 253). Yet Aristotle would say that *man* is a species, but that *biped pedestrian* is not a species. For *biped pedestrian* is a differentia, and a species is not a differentia of anything (*Top.* 107^b33). So, Peterson concludes, "one and the same thing is a substance under one description but not under another. ... Man is a secondary substance under the description 'man' but not under the description 'the biped pedestrian'" (p. 253).

What Peterson has shown is that the theory of kooky objects cannot explain away all putative cases of referential opacity in Aristotle. But that does not establish that the best explanation of the case at hand is the hypothesis that Aristotle held the context "... is a substance" to be referentially opaque.

Peterson's argument is based on two assumptions: (a) species and differentiae are classes, and (b) each species and its differentia are necessarily coextensive. Now I am suspicious of the idea that Aristotelian species and differentiae are classes, but I do not intend to pursue that issue here. I would, instead, point to Aristotle's ambivalence about the status of differentiae. Indeed, he sometimes asserts²³ but at other times denies²⁴ that differentiae are substances. In one mood, he thinks that a given differentia is inseparable from the species it differentiates, and that it therefore cannot turn up as a differentia of another species in another genus.²⁵ When he is in that mood, he will surely think that a species and its differentia are the same class if they are classes at all. The class of men and the class of biped pedestrians cannot possibly be *different* classes if necessarily, every man is a biped pedestrian and every biped pedestrian is a man.

But in another mood, he seems to want to allow the differentia a wider extension than the species it differentiates;²⁶ and it is in this mood, I think, that he denies that a species can be a differentia. That is, it cannot be a differentia of anything **else**, with a narrower extension. Aristotle's ambivalence seems to me to show that he has (at least) two different things in mind when he speaks about differentiae. At least some of the time, Aristotle speaks simply of a differentia when what he means is the *differentiated genus*. When he uses the term *biped pedestrian* in this sense, for example, he means it to import the relevant genus. So used, the differentia term *biped pedestrian* means the differentiated genus, *biped pedestrian animal*. The latter is a class if species are classes. Indeed, it is the same class as the species *man*. But, as Peterson admits, *man* is a substance under the description *biped pedestrian animal* as well as under the description *man*, since that is the definition of *man*. So it has not been established that one and the same class is a secondary substance under one description, but not under another.

Peterson concludes her discussion by pointing out the ontological extravagance of the fine-grained ontology, and by reminding us of Aristotle's own opposition to such extravagance. I grant

²³ *Metaph.* Z.12, 1038^a19.

²⁴ *Cat.* 3^a21.

²⁵ *Top.* 144^b14.

²⁶ *Top.* 144^b6.

that the ontology I have attributed to Aristotle seems bloated. And it is certainly true that Aristotle rebukes the Platonists for invoking in their explanations as many new entities — the Forms — as there are things they are invoked to explain (*Metaph.* 990^b1-4). But this does not convince me to abandon the theory of kooky objects as an interpretative hypothesis. Rather, I take it as a challenge to that interpretation to find some further justification for ascribing such a rich ontology to Aristotle. I imagine Aristotle’s ontological scruples to be much like those of that great neo-Aristotelian Paul Grice, whose “taste is for keeping open house for all sorts and conditions of entities, just so long as when they come in they help with the house-work.”²⁷ We have already seen one way in which Aristotle thinks they can help. I will conclude by suggesting some ways in which our hypothesis can help us to understand some otherwise puzzling aspects of Aristotle’s thought.

IV

Before beginning my project of justification, it will be helpful first distinguish a bit more clearly the different versions of the fine-grained ontology mentioned earlier. For Matthews, both *the unmusical* and *the unmusical man* are kooky objects;²⁸ he does not take a stand on the question whether they are the same kooky object. But Lewis and White come down on opposite sides of this issue. On Lewis’s account, the expressions “the generous <one>” and “generous Socrates” may, in a given context, have the same denotation.²⁹ Both expressions denote the same accidental compound of a substance (Socrates) and an accident (generosity). For White, on the other hand, the two expressions do not have the same denotation.³⁰ In his view, *the generous <one>* is a component of the compound *generous Socrates*, but is itself neither a compound nor an attribute. To give such entities a label, I’ll call them *simple* kooky objects. I take White’s view to be that a simple kooky object may be a component of a compound kooky object, whereas for Lewis, all kooky objects are what he calls accidental compounds. My view is closer to White’s than to Lewis’s here. I think Aristotle would want to distinguish simple kooky objects, such as *the pale*, from compound kooky objects, such as *the pale man*; for the first is essentially pale, but not essentially human, while the second is both essentially pale and essentially human. *The pale* and *the pale man* may coincide, of course, and hence be one in number — indeed, they are one and the same man — but they are not identical. They cannot be identical, since they have different essential properties. I will not argue in favor of this approach, but I hope the reasons for my preference become apparent as we proceed.

I begin with the *Categories*. It is a commonplace that in that work Aristotle divides the entities in his ontology into ten fundamental classes: substances, qualities, quantities, relatives, etc. Substances are independently existing entities; nonsubstances, the items in the other nine categories, are dependent entities. When one considers only substances and qualities, all seems

²⁷ Grice [1975], p. 31.

²⁸ Matthews [1982], p. 225.

²⁹ Lewis [1982], p. 5.

³⁰ White [1986], p. 492, n. 6.

clear enough. This horse is a substance, an independently existing entity. The whiteness in the horse is a quality, a dependent entity.³¹

When one looks into the other categories, however, the picture becomes cloudy. The category of relatives includes such items as a master, a slave, the wing of a bird, the rudder of a boat, a head, and a hand. Presumably fathers and daughters also go into this category. But these do not seem to be dependent entities in the same way that qualities are. Indeed, it seems as if these items are all substances, or at least parts of substances, and not ontologically dependent entities. One might say, of course, that one and the same entity may be a substance under one description ('man') and a relative under a different description ('father' or 'slave'). That is, one may hold that the contexts 'is a relative' and 'is a substance' are referentially opaque. But that does not solve our problem. For it does not explain why relatives are **dependent** entities, which cannot exist apart from the substances that they are (in some sense) **in**. Perhaps one might say that this claim about relatives is also referentially opaque. But if nothing can be said about the items in Aristotle's fundamental ontological scheme without inducing referential opacity, the notion of reference itself seems to lose its foothold. There must be at least some transparent contexts.

By contrast, the theory of kooky objects handles relatives with aplomb. That man and that father are distinct, but coincidental, objects. One is a substance, the other a relative. The substance can exist without the relative that depends on it, but not conversely. That father cannot exist if the man that he inheres in does not exist. Notice that the items in this category are not **relations**, like *fatherhood*, or *being larger than*; rather, they are (among) the things that instantiate these relations: things that are fathers, or that are larger than something. By the same token, we should say that the items in the category of *poion* (literally, "like what" although usually, and misleadingly, translated "quality") are not qualities but things qualified. What is ontologically dependent on Coriscus is not pallor, but the pale, i.e., the pale thing with which Coriscus coincides.³²

Consider another accidental category, that of *place*. How is it, one might wonder, that a place is incapable of existing apart from the substance that is located at it? Coriscus is in the Lyceum, and he can exist apart from the Lyceum. But surely the Lyceum can exist apart from Coriscus, indeed, apart from there being any substances at all located there. But note that Aristotle lists *in the Lyceum* (rather than the Lyceum itself) as an example of an item in this category. This suggests that the category is not that of *place*, but of *things placed*. (Aristotle actually calls it the category of *where*.) So an example of something in this category might be *the one in the Lyceum*. This, of course, is something that coincides with Coriscus for as long as the latter is in the Lyceum, and whose existence depends on that of Coriscus.

The hypothesis that the individuals in nonsubstance categories are (simple) kooky objects thus explains a number of otherwise peculiar and perhaps uninterpretable claims that Aristotle makes in the *Categories*.³³

³¹ I will ignore the raging dispute about precisely what this dependent entity is, and on what it depends.

³² I suspect that Aristotle was not completely clear on this at the time he wrote the *Categories*. So I need not disagree with White [1986] who holds that the kooky objects of the *Physics* and later works enter Aristotle's ontology as a replacement for the individual nonsubstances of the *Categories*.

³³ Not all of the nonsubstance categories are equally well construed to have kooky objects as their individuals, however. Aristotle tells us that such entities as "the brave" and "the pale" get their names from

V

Kooky objects, along with the fine-grained ontology that generates them, are more prominent, however, in the later works, especially the *Metaphysics*, with its emphasis on the question “What is substance?” I will conclude by indicating why kooky objects fit so well into Aristotle’s later doctrine of substance.

Kooky objects are clearly not substances, things that exist in their own right; rather, they depend for their existence on the substances with which they coincide. A compound kooky object, like the musical man, is doubly dependent; it depends for its existence not only on its underlying substance, but also on the simple kooky object, the musical. Simple kooky objects are also dependent entities; the musical exists only because it coincides with some substance or other.

But what more can be said about the substances on which these objects depend? We must, of course, distinguish between composites of matter and form, which are substances in only a secondary sense, and the forms that are the primary substances of the *Metaphysics*. A composite substance is a highly complex entity, with many nonrelational properties, both essential and accidental. Its essential properties are those that are part of the definition of its form; its accidental properties are those that are essential to the various kooky objects with which it coincides. That is, what makes Socrates essentially two-footed is that being two-footed is part of what he is, not something that holds of him merely by way of coincidence. What makes him accidentally musical is that a certain substance coincides with a kooky object that is essentially musical.

But what kind of substance is this? It is one whose accidental properties are all relational properties. For it has its various accidental properties in a derivative way, by coinciding with various distinct kooky objects. Considered apart from the kooky objects with which it coincides, this substance’s only properties are essential and nonrelational. This I take to be what Aristotle calls a primary substance.

It is thus a primary substance, not a compound, that stands in the relation of coincidence to kooky objects. Such a substance is not a composite of matter and form, but a form in virtue of which a composite is the kind of thing that it is. A primary substance does not have the nonrelational accidental properties that its composite material instances have. To arrive at a primary substance we must peel the accidental properties away from a composite substance. That is to say, we must separate from the composite substance the kooky objects with which its underlying primary substance coincides.

When we have done this, we can see that primary substances are themselves much like simple kooky objects. Apart from their coinciding with other things, they have no accidental properties.

bravery and pallor, and are therefore *paronyms* (1^a12-15, 10^a30). His idea seems to be that the paronyms of a given quality are not themselves entities in the category of quality. (Cf. 6^b11: *sitting* is a position, but the paronyms of a position, such as to-be-sitting, are not themselves positions.) So at least in the case of qualities, it seems unlikely that in the *Categories* Aristotle thought of kooky objects (“the pale”) as an alternative to more property-like entities (pallor). I suspect that at the time of the *Categories* Aristotle did not have a coherently worked out position about these ontological issues. (Cf. Lewis [1982], pp. 2-4; White [1986], p. 494, n. 32.) But in the *Metaphysics*, the dependency relations start to reverse themselves. Whereas in the *Categories* items like *the brave* seem to depend upon the qualities (e.g., bravery) they are named after, *Metaphysics* Z.1 1028^a20 suggests the opposite. *The walker* and *the sitter* have a better claim to be called beings than do *walking* and *sitting*, presumably because they are more substantial than the qualities and positions they supplant.

The man who coincides with the pale and with the musical, etc., is in his own right neither pale nor dark, neither musical nor unmusical. He is, of course, two-footed and rational, assuming that these features are part of his definition. But the substance itself, like the kooky objects with which it coincides, has no nonrelational accidental properties. A primary substance is what we are left with after we have abstracted away from a composite substance all of its accidents.

Kooky objects thus fit perfectly into the ontology of Aristotelian substances. A traditional puzzle concerning Aristotelian substances is how they are related, on the one hand, to the “ordinary” particulars of (what I will call) *folk ontology* and, on the other, to the abstract properties, or essences, which make those ordinary particulars the kinds of things that they are. It seems clear enough that Aristotle’s substances cannot be identified with either the particulars of folk ontology or their abstract essences. Aristotelian substances are definable, whereas ordinary particulars (his composites of matter and form) are, by his lights, not definable. Aristotelian substances are also “thises”, i.e., **subjects** of predication, rather than entities inherently predicated of something else, as abstract essences seem to be.

Neither a composite individual such as Socrates, nor a universal such as the property of being human, seems to qualify as an Aristotelian primary substance. What kind of entity, then, is a primary substance? Is it some other kind of individual or some other kind of universal? On this particularly vexed question of Aristotelian scholarship, the present interpretation is, alas, silent. (Perhaps that is a reason for thinking that it is correct.) Since a substance can be one in number with a particular kooky object, it might appear to be an individual itself. Yet the only non-relational properties a substance has are those essential properties that define it. So the man who coincides with *the pale one* and the man who coincides with *the dark one* are the same in being, and indiscernible. This makes the primary substance, *the man*, appear to be more like a universal: one thing capable of coinciding, simultaneously, with many different things. It is not surprising, then, that Aristotelian substances should be construed as individuals by some interpreters and as universals by others.

Here is another way to put the point. An ontology that restricts itself to ordinary individuals and their abstract properties will reject kooky objects. It will also, and for the same reasons, reject Aristotelian substances. If we want to construct an Aristotelian ontology, we will want to make room for substances. In so doing, I have been arguing, we will also be making room for kooky objects.

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