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CONSTITUTION AND KIND MEMBERSHIP

A bronze statue is a lump of bronze – or so it might appear. But appearances are not always to be trusted, and this one is notoriously problematic. To see why, imagine a bronze statue (perhaps a statue of David) and ask yourself: *Which* lump of bronze is the statue? Presumably, it is the lump that makes up the statue (or, as we say, the lump that *constitutes* the statue). After all, why should the statue be any other lump of bronze? But if that is right, if the statue is the lump of bronze that constitutes it, then why can the lump of bronze survive being melted down whereas the statue it constitutes cannot? It seems that in fact the bronze statue is *not* the lump of bronze that constitutes it, since the statue and the lump of bronze have different persistence conditions. But then is it some other lump of bronze? Is it a lump of bronze at all? These questions are troubling; they appear to have no easy answers.

The puzzle I have just described raises what I have elsewhere called the "problem of material constitution" (or "PMC" for short).[1] The PMC arises whenever it appears that an object *a* and an object *b* share all of the same parts and yet are essentially related to those parts in different ways. Such situations are puzzling because, as in the example above, we are tempted to say both that *a* is identical with *b* and that *a* is distinct from *b*.

In this paper, I will present and defend what I take to be the most plausible solution to the PMC. I will concede that, for example, in the region occupied by our statue of David, there really is a statue and there really is a lump of bronze; but I will deny that affirming these two claims carries all of the unpalatable consequences many philosophers think that it does. In particular, I will deny that in saying that there is a lump of bronze in the region we are committed to the claim that there is something in the region that has the essential properties associated with the kind *lump of bronze*; hence I will

also deny that in saying that there is a statue in the region and that there is a lump of bronze in the region, we are committed to there being two objects in the region.

My solution is not original. It makes its first appearance in the contemporary literature in Burke 1994a and receives further development in Burke 1994b and 1996. But there still remains much to be said on its behalf. In his articles, Burke shows that rejecting certain plausible theses about sortals enables us to solve some of the puzzles that raise the PMC. In the present article, I will show that rejecting a single plausible thesis about kind membership enables us to solve *every* puzzle that raises the PMC.

I will begin with some preliminary remarks explaining how and why my discussion of the solution differs terminologically and otherwise from Michael Burke's. I will then go on to present the solution, first by showing how it solves the lump/statue puzzle, then by showing how it solves every puzzle that raises the PMC. Finally, I will respond to what seems to be the most important challenge facing proponents of this solution: the challenge of providing a satisfactory account of "dominant kinds".

1. PRELIMINARIES

In his 1994b, Michael Burke argues that the lump/statue puzzle can be solved by rejecting what he calls the "standard account of the relations among objects, sorts, sortals, and persistence conditions". This is roughly the solution that I will be defending as well, but I part from Burke in my statement of the thesis to be rejected.

According to Burke, the following three propositions stand at the heart of the account to be rejected:

(1) Associated with every sortal is a set of persistence conditions.

(2) Objects that satisfy a given sortal invariably have the persistence conditions associated with that sortal.

(3) Two sortals are co-satisfiable (as are 'kitten' and 'cat') only if the persistence conditions associated with the one are the same as the persistence conditions associated with the other.

Burke endorses the first proposition and rejects the latter two.

However, there are at least three problems with Burke's formulation of the "standard account" – two minor, and one more serious. The first of the minor problems is that (1)–(3) are theses about *sortals*. But sortals are linguistic items. They are *terms* that refer to sorts, or kinds,[2] which are metaphysical items. But then why not just talk about kinds? This would certainly seem preferable in light of the fact that the underlying issues here are metaphysical rather than linguistic. Burke himself assumes that "an object's having the persistence conditions it has is *explained by its being of a certain sort*."[3] And it is at least conceivable that one might reject propositions (2) and (3) without rejecting any corresponding theses about kinds, though this alone would not suffice to solve any of the problems that Burke says can be solved by rejecting those propositions.

The second problem is that (1)–(3) are cast in terms of persistence conditions when it seems we would do better to express the standard account in terms of essential properties. The reason we would do better is that a list of the essential properties of a thing will include or entail all of its persistence conditions, but not vice versa; and in some of the puzzles that raise the PMC, persistence is not at issue: the problem arises not because there are *changes* that the object in question can or cannot survive, but rather because there are possible states of affairs in which it does or does not exist.[4]

The third and more serious problem is that the expression 'satisfy a given sortal' might be seen as ambiguous, and once we try to remove the ambiguity, it becomes hard to see why Burke would reject propositions (2) and (3). What gives rise to the ambiguity? Intuitively, an object satisfies a sortal just in case it is an object of the sort picked out by that sortal. So, for example, an object satisfies the sortal 'statue' just in case it *is* a statue. The trouble, however, is that proponents of the standard account might reasonably hold that there are two ways of being a statue. Our statue of David, for example, is a full-fledged statue: it has the essential properties of a statue. But, they might say, there is a sense in which the lump of bronze that constitutes the statue is a statue as well. It is a statue in the nominal (or "predicative", or "constitutive") sense: it shares all of its parts with and exemplifies the distinctive qualitative properties of a

full-fledged statue. Thus, proponents of the standard account might hold that there are two ways of satisfying a sortal. They might say that an object satisfies a sortal in the *classificatory* way just in case that sortal gives the metaphysically best answer to the "What is it?" question for that object, and an object satisfies a sortal in the *nominal* way just in case the object exemplifies the distinctive qualitative features of those things that satisfy the sortal in the classificatory way. But if this is right, then it is no longer clear what it is about the standard account that Burke intends to reject. For proponents of the standard account will endorse (2) *only* insofar as they take 'satisfies a given sortal' to mean 'satisfies a given sortal in the classificatory way'; but once we give it that reading, (2) becomes a claim that even Burke will endorse. And yet (2) is precisely what Burke proposes to reject.

What has gone wrong here? It seems that Burke has mischaracterized his dispute with proponents of the standard account. The main issue is not the issue of whether objects that satisfy a given sortal must invariably have the persistence conditions associated with that sortal. For both parties to the debate will acknowledge that there are two senses in which an object might be said to satisfy a sortal, and both will agree that (2) is true only when 'satisfies a given sortal' is given the classificatory reading described above. What they will disagree about, however, is whether the presence of an object that satisfies a given sortal in the nominal way entails the presence of an object that satisfies that sortal in the classificatory way.[5] Proponents of the standard account say 'yes'. For on their view, what it is for something to satisfy a sortal in the nominal way is just for it to constitute[6] something that satisfies that sortal in the classificatory way. Burke, on the other hand, says 'no'. Something that has the essential properties of a lump might be nominally a statue *without* constituting anything that has the essential properties of a statue (or vice versa).

In light of these concerns, I prefer to express the account to be rejected as a single thesis about kind-membership.

(KM)   For any kind K, there is a set S of properties such that, necessarily, for any x, x is a K if and only if x constitutes something that has the members of S essentially.

(KM) is simple and precise; it is also cast in terms of kinds and essential properties rather than sortals and persistence conditions. The properties in S may reasonably be thought of as the properties "associated" with K; thus KM expresses (or at least entails) what is presumably intended by (1) above. And KM captures the core of the standard account without suffering from the defects of Burke's formulation. Taking constitution to be symmetrical and reflexive (see note 6), KM tells us that, for every K, every object that is a K (in either the nominal *or* the classificatory sense) either has the essential properties associated with K or else is spatiotemporally co-located with something that has those essential properties.[7] In short, it tells us that wherever there is a K, there is something that has the essential properties of a K. Unlike (2) and (3) above, this *is* a thesis that will be unqualifiedly endorsed by proponents of the standard account,[8] and will be summarily rejected by its opponents, such as Burke and myself.

KM is the thesis to be rejected. But what will we be rejecting it for? According to Burke, the lump/statue puzzle can be solved by rejecting (2) and (3) in favor of

(2′)   Objects that satisfy at least one sortal invariably have the persistence conditions associated with one or another of the sortals they satisfy.

But (2′) will not do as our replacement thesis, since KM is a thesis about kinds and their associated essential properties whereas (2′) is a thesis about sortals and their associated persistence conditions. Therefore, I will propose a suitably different replacement thesis.

According to Burke, an object's dominant *sortal* is the one that gives the best answer to the "What is it?" question for the object. Co-opting this idea, let us define the term 'dominant kind' as follows:

K is *x*'s dominant kind $=_{DF}$ *x* is classifiable as a K. That is, *x* is a K and any term that refers to K is a metaphysically better answer to the question "What kind of thing is *x*?" than any term that does not refer to K.[9]

With this definition in mind, I propose rejecting KM in favor of:

(KM*) For any kind K, there is a set S of properties such that, necessarily, for any x, K is x's dominant kind if and only if x has the members of S essentially.

The reader will note that KM* is relatively uncontroversial; proponents of the standard account can endorse it just as well as opponents of that account. But that is no disadvantage of KM*. The problem with the standard account, on my view, is that it says too much. There is no problem with saying, as KM* does, that wherever there is something classifiable as a K, there is something with the essential properties of a K. The trouble comes in making the additional claim, as KM does, that wherever there is a nominal K, there is something that has the essential properties of a K. This, as we shall see, is the claim that gives rise to the problem of material constitution.

So much, then, for preliminaries. In the next section, I will show how rejecting KM enables one to solve the lump/statue puzzle.

2. THE LUMP AND THE STATUE

Above I presented what is perhaps the most familiar instance of the PMC: the puzzle that arises when we ask what the relationship is between a bronze statue and the lump of bronze that constitutes it. The puzzle is that it seems that the statue (call it "*David*") and the lump (call it "Alpha") can be neither identical nor distinct. They cannot be distinct because they share all of the same parts and (we assume) for any x and y, if x and y share all of the same parts, $x = y$. But neither can they be identical, so the reasoning goes, because statues and lumps of bronze have different essential properties.[10]

I am inclined to embrace the first horn of this dilemma. That is, I am inclined to think that constitution really is (or at least entails) identity and that therefore *David* is identical with Alpha. So I need to somehow undermine the line of reasoning that purports to show that they are distinct. Fleshed out in a bit more detail, that line of reasoning is as follows:

(1)   Consider the region occupied by our statue of David. Call the region 'R'. R is occupied by a lump of bronze and R is occupied by a statue.[11] (Premise)

(2) For any kind K, wherever there is a K, there is something that has the essential properties of a K. (Premise)

(3) Something that occupies R has the essential properties of a lump of bronze and something that occupies R has the essential properties of a statue. (From 1, 2)

(4) Let the name 'Alpha' refer to something that occupies R and is essentially a lump of bronze and let the name '*David*' refer to something that occupies R and is essentially a statue. (From 3, existential instantiation.)

(5) There are different sets of essential properties associated with the kinds *statue* and *lump of bronze*. (Premise)

(6) Therefore: *David* and Alpha have different essential properties. (From 4, 5)

(7) Therefore: *David* and Alpha are distinct. (From 6, Leibniz's Law)

This argument is valid; thus, in order to maintain that *David* and Alpha are identical, one would have to reject a premise. I reject premise (2).

Notice that premise (2) is just a less formal way of expressing KM. Thus, if KM is false, the argument is unsound and the puzzle is solved. If we reject KM in favor of KM*, we no longer have any reason to think that *David* and Alpha have different essential properties. We are committed to the claim that wherever there is something that is a K *in the classificatory sense*, there is something that has the essential properties of a K; but there seems to be no reason (apart from KM) for thinking that there is both a full-fledged statue and a full-fledged lump of bronze in the region occupied by *David*. We can hold that *David* is a statue in the classificatory sense and a lump in the nominal sense while at the same time maintaining that 'Alpha' is just another name for *David*. Of course, it is possible to reject KM and still maintain that 'Alpha' is something distinct from *David*. But since we already have good reason for thinking that *David* and Alpha are not distinct, it is hard to see why, apart from KM, anyone would be inclined to do so.

3. SOLVING THE PROBLEM OF MATERIAL CONSTITUTION

We have seen how rejecting KM enables us to solve one puzzle that raises the PMC. Now I want to show how rejecting KM enables us to solve *any* puzzle that raises the problem.

Elsewhere (Rea, 1995a) I have argued that every puzzle that raises the PMC makes five assumptions. Informally, they are: (i) there is an F and there are ps that compose it (Existence Assumption),[12] (ii) if the ps compose an F, then they compose an object that is essentially such that it bears a certain relation R to its parts (Essentialist Assumption), (iii) if the ps compose an F, then they compose an object that can exist and not bear R to its parts (Principle of Alternative Compositional Possibilities, or "PACP"), (iv) if the ps compose both a and b, then a is identical with b (Identity Assumption), and (v) if a is identical with b then a is necessarily identical with b (Necessity Assumption). More formally, these assumptions may be stated as follows:

> Existence Assm.: $(\exists x)(\exists p\mathrm{s})(\exists t)(x$ is an F & the ps compose x at $t)$
>
> Essentialist Assm.: $(\forall x)(\forall p\mathrm{s})(\forall t)[x$ is an *F* & the ps compose x at $t \supset (\exists z_1)($the ps compose z_1 at t & $\Box(\forall q\mathrm{s})(\forall t)$ (the qs compose z_1 at $t \supset z_1$ bears R to the qs$))]$
>
> PACP: $(\forall x)(\forall p\mathrm{s})(\forall\ t)[x$ is an *F* & the ps compose x at $t \supset (\exists z_2)($the ps compose z_2 at t & $\Diamond(\exists q\mathrm{s})(\exists t)($the qs compose z_2 at t & z_2 does not bear R to the qs$))]$
>
> Identity Assm: $(\forall x)(\forall y)(\forall p\mathrm{s})(\forall t)($the ps compose x at t & the ps compose y at $t \supset x = y)$
>
> Necessity Assm: $(\forall x)(\forall y)[x = y \supset \Box((x$ exists $\lor$ y exists$) \supset x = y)]$

I said that the PMC just is the fact that these five assumptions are individually plausible and jointly incompatible, and I argued that in order to solve the problem it is necessary and sufficient to (i) reject the Identity Assumption, (ii) reject the Necessity Assumption, or (iii) reject the conjunction of the remaining three schematic assumptions.[13] Thus, if what I said there is correct, one can solve

the PMC by rejecting KM if and only if doing so somehow leads us to embrace one of these three alternatives.

It should be clear from the preceding section that I accept both the Identity Assumption and the Necessity Assumption. Therefore, I need to show how rejecting KM leads us to embrace the third alternative. I take it that whether or not KM is true will have no bearing on the Existence Assumption of any puzzle that raises the PMC. It will not lead us to say, for example, that there are no lumps or statues. Hence, I will focus on the Essentialist Assumption and the PACP. Together (in their schematic form) these assumptions basically say that the ps that compose an F compose something that essentially bears a certain relation to its parts *and* they compose something that fails to essentially bear that relation to its parts. The question is why rejecting KM would always lead us to reject the conjunction of these two assumptions.

The answer, in short, is that if KM is false, ps can compose an F either by composing a full-fledged F or by composing a merely nominal F, and if this is so, then it will be impossible to come up with a substitution instance for R that will generate a plausible Essentialist Assumption and PACP. Every puzzle that raises the PMC presents us with ps that compose an object that belongs to more than one kind. The Essentialist Assumption and PACP for each puzzle are generated (both formally and intuitively) by observing differences in the essential properties associated with those kinds and choosing a substitution instance for R such that full-fledged members of one kind bear R essentially to their parts whereas full-fledged members of the other kind do not. But, of course, one will endorse *both* the Essentialist Assumption and the PACP only if one has reason to think that the ps in question actually compose full-fledged members of both of the kinds in question. Apart from KM, however, there is no reason to think such a thing.

To see this more clearly, consider the *David*/Alpha puzzle again. The puzzle trades on a tension between the following intuitions: (1) the parts of a statue compose a statue; (2) every full-fledged statue is such that its parts are arranged statuewise; (3) the parts of a statue compose a lump; and (4) every full-fledged lump is possibly such that its parts are not arranged statuewise. Now, let us say that an object bears R_D to its parts just in case its parts are arranged

statuewise. Given this definition, (1) and (2), together with KM, entail

(A) $(\forall x)(\forall ps)(\forall t)[x$ is a statue & the ps compose x at $t \supset$ $(\exists z_1)$(the ps compose z_1 at t & $\square(\forall q$s$)(\forall t)$(the qs compose z_1 at $t \supset z_1$ bears R_D to the qs$))]$

whereas (3) and (4), together with KM, entail

(B) $(\forall x)(\forall ps)(\forall t)[x$ is a statue & the ps compose x at $t \supset$ $(\exists z_2)$(the ps compose z_2 at t & $\lozenge(\exists q$s$)(\exists t)$(the qs compose z_2 at t & z_2 does not bear R_D to the qs$))].$

(A) is the puzzle's Essentialist Assumption; (B) is its PACP. Notice that if we did not know the essential properties for statues and lumps, we would not be able to affirm (2) or (4); and without those, we would have no reason to affirm (A) and (B). More importantly, if we did not endorse KM, we would have no reason to think that (A) follows from the conjunction of (1) and (2) and that (B) follows from the conjunction of (3) and (4). For if KM is false, (1) does not entail that the parts of a statue compose a full-fledged statue and (3) does not entail that the parts of a statue compose a full-fledged lump. Thus, without KM the inferences to (A) and (B) are undermined. And without (A) and (B), the puzzle dissolves.

Similar remarks apply with respect to the objects mentioned in any of the puzzles that raise the PMC. In the familiar puzzle about Tibbles the cat, the substitution instances for R are determined by the essential properties of cats and undetached cat parts; in the Ship of Theseus puzzle, the substitution instances for R are determined by the essential properties of ships and aggregates of planks or wood particles.[14] In each case, as in the *David*/Alpha puzzle, we have reason to accept both the Essentialist Assumption and the PACP only if we accept the claim that wherever there is an object of a given kind, there is something that has the essential properties associated with that kind. Otherwise, we would have no reason to think that just because the ps compose a lump (or an aggregate) and a statue (or a cat, or a ship), they must compose something that has the essential properties associated with lumps (or aggregates) *and* something that has the essential properties associated with statues (or cats, or ships).

So if what I have said thus far is correct, the PMC can be solved by rejecting KM. Rejecting KM undermines our reasons for accepting the conjunction of the Essentialist Assumption and PACP for any puzzle that raises it. And since affirming these two assumptions leads us into the PMC, I take it that having no reason to affirm them constitutes sufficient reason to reject them.

4. COSTS AND BENEFITS

I said at the outset that the PMC arises whenever it appears that an object *a* and an object *b* share all of the same parts and yet are essentially related to their parts in different ways. If the views I have been defending thus far are correct, the reason we are confronted with such appearances is that (i) many objects belong to many different kinds, (ii) associated with those kinds are different (often incompatible) essential properties, and (iii) we mistakenly assume that wherever we have an object of a certain kind, we have an object with the essential properties associated with that kind. The problem is solved when we recognize that it is possible for there to be an object that belongs to a kind in the nominal sense without there being an object that belongs to that kind in the classificatory sense.

This solution has several benefits. But before I point those out, let me point out what seems to me to be the most significant cost. Let us assume that when we mold a lump of clay into a statue, we create something that has the essential properties of a statue, and when we knit a pile of wool into a sweater, we create something that has the essential properties of a sweater. Given these assumptions, many have the intuition that if we take a lump of clay and mold it into a statue, the lump of clay that constitutes the finished statue is the same (identical) lump of clay that we started with. Similarly, many have the intuition that if we unravel a wool sweater, the pile of wool that we have at the end of our task is the same pile of wool that once constituted the sweater. One consequence of my view, however, is that these intuitions are false.[15] For on my view, the lump of clay that constitutes the statue is identical with the statue whereas the lump of clay from which the statue was made is not (since, for example, it existed before the statue did); and the pile of wool that constitutes the sweater is identical with the sweater whereas the pile

of wool that results from dismantling the sweater is not (assuming, of course, that we would not care to say that the sweater still exists in a disassembled state). If this is right, then when we mold our clay into a statue, we destroy the original lump and bring a new one into existence, and when we dismantle a sweater, we destroy our original pile of wool and bring a new one into existence.

Is this consequence problematic? Some, no doubt, will think that it is. For example, E. J. Lowe (1995) exclaims (without argument) that "it is utterly fantastical" to suppose that a mere change of shape in a piece of clay could result in its destruction.[16] But I don't share his intuition.[17] Consider the lump/statue example. We started with a lump of clay, and then we brought a statue into existence. Most of us are inclined to think that the statue is something *new*; it wasn't there before we began our sculpting activity. So either our original lump of clay has been replaced by the statue, in which case the original lump no longer exists, or else it is now co-located with the statue. But given these options, which seems to be the more fantastical: to suppose that our sculpting activity has brought about the replacement of a lump by a statue, or to suppose that our sculpting activity has caused our piece of clay to acquire a new shape and has also caused a new object to become co-located with it? I say the latter, by far; but even if you disagree with me, I think you will be hard pressed to find an argument showing that we should find the former more fantastical.[18]

I see no real problem with denying that the lump that constitutes a statue is identical with the lump from which it was made. Nor do I see any problem with denying that the pile of wool that results from dismantling a wool sweater is distinct from the pile of wool that constituted the sweater. But even if one does not share my sympathies here, I think that the intuitions that can be saved by rejecting the standard account far outweigh this one that must be rejected. If the arguments in this paper are correct, rejecting KM enables us to affirm *all* of the following propositions:

(α)   There are (among other things) human beings, ships, statues, cats, lumps of clay, aggregates of particles, arbitrary undetached cat-parts, and aggregates of wooden planks.

(β)   Of the things that are human beings (ships, cats, aggregates, etc.) some are *essentially* human beings (ships, cats, aggregates, etc.).

(γ)   The ps that compose a human being (ship, cat, statue) compose an aggregate of particles (planks, cat-parts, clay-atoms).

(δ)   The ps that compose a human being (ship, cat, statue) do not compose anything that has the essential properties associated with aggregates.

(ε)   For any ps, there is at most one object that the ps compose at any given time.

(ζ)   For any x, y, ps, and t: if the ps compose x at t and the ps compose y at t and if there is at most one object that the ps compose, then $x = y$.[19]

(η) $(\forall x)(\forall y)[x = y \supset \square((x \text{ exists} \vee y \text{ exists}) \supset x = y)]$

(θ)   Identity is not sortal-relative.

A bit less formally, rejecting KM enables us to solve the PMC without throwing out any of the objects in the ontology of common sense and without embracing co-location, relative identity, accidental sameness, contingent identity, or mereological essentialism. I know of no other solution to the PMC that does all of that.

There is one further advantage of rejecting KM. It seems to me very plausible to assume that

(ι)   For any kind K, arranging objects K-wise is both necessary and sufficient for bringing an object of kind K into existence.

That is, it seems quite plausible to assume that something is a statue just in case its parts are arranged statuewise, something is a lump just in case its parts are arranged lumpwise, and something is a cat just in case its parts are arranged catwise.[20] If we endorse KM, however, ι commits us to the possibility of co-location.[21] To see why, consider an object whose parts are arranged both lumpwise and statuewise. By ι, O is a lump and O is a statue. But then it follows from KM that the parts of O compose something that has the essential properties of a lump *and* something that has the essential

properties of a statue. But, of course, that is impossible unless we assume that the parts of O compose two distinct objects: a full-fledged lump and a full-fledged statue. Therefore, given that there are things whose parts are arranged both lumpwise and statuewise, it cannot be the case that ι is true, co-location is impossible, and KM is true. I am inclined to think that ι is true and that co-location is indeed impossible (and, in fact, I will assume as much for the remainder of this paper); therefore, I reject KM.

Of course, proponents of any of the other solutions to the PMC can just as easily claim it as an advantage of their view that it does not require us to throw out any widely believed theses about kind-membership. But the denial of KM seems to me far more plausible than the denials of α–ι. Part of the reason for this is that it seems to me much more plausible to think that we would make the mistake of thinking that the presence of a K entails the presence of something with the essential properties of a K than to think that we would make the mistake of believing in aggregates when there are none, or of believing that objects can gain and lose parts when in fact they can't, and so on. But ultimately the main reason that I am inclined to reject KM is that each of α–ι seems to be a well-entrenched part of either common sense or philosophical sense, whereas KM doesn't seem to enjoy nearly that kind of status. If I am right, if KM doesn't have nearly the same intuitive pull as α–ι, then rejecting KM is the most reasonable solution to the PMC.

5. DOMINANT KINDS

I said in the last section that the PMC arises whenever a composite object belongs to two or more different kinds and whenever the essential properties associated with those kinds differ from one another. An object cannot have an inconsistent set of essential properties, thus (if we reject the possibility of co-location) we must assume that the object in question gets its essential properties from only one of the kinds to which it belongs, or we must embrace one of the many other available solutions to the problem. I have been urging the former alternative. But once we accept that alternative, the following question arises: Which of the kinds to which an object belongs is the one that gives it its essential properties? Or, to put it in

other terms: Which of the kinds to which an object belongs counts as its *dominant* kind?

Answering this "Which one?" question is perhaps the most difficult challenge facing proponents of the solution I advocate, so this paper would be incomplete without some comment on it. I will begin by showing that the only answer currently available in the literature – Michael Burke's answer – is inadequate.[22] I will then propose a different answer.

5.1. *Burke's Answer*

According to Burke, an object's dominant kind is the one membership in which entails possession of the widest range of properties. This criterion is rather vague, and Burke admits as much. But, he says, "its vagueness seldom prevents a clear-cut decision" and, generally speaking (except in "atypical" cases), "its rulings are the ones we want."[23] Consider, for example, an object that belongs to the kinds *tree* and *hunk of cells*. Necessarily, members of both kinds have chemical and physical properties; but, Burke points out, being a tree entails possession of a full range of biological properties, whereas being a hunk of cells does not.[24] Therefore, according to Burke's criterion, *tree* clearly dominates *hunk of cells*, and this is the result we would hope to get.

Burke also offers examples that do not involve living organisms. For instance, he says that (i) *typewriter* dominates *hunk of metal* because being a typewriter entails possession of functional properties whereas being a hunk of metal does not, (ii) *statue* dominates *piece of copper* because being a statue entails possession of aesthetic properties whereas being a piece of copper does not, and (iii) *piece of copper* dominates *aggregate of atoms* because being a piece of copper entails possession of structural or unifying properties whereas being an aggregate of atoms does not. And, again, in each case the decision is clear and seems to be correct.

Burke considers these examples (together with two others which I have omitted for the sake of brevity) to constitute a "representative sample" of a "wide range" of cases.[25] Therefore, he takes the fact that his criterion is able to handle such cases as good reason for accepting it. Of course, he admits that there are some "atypical" cases that his criterion is not equipped to handle. For example, he

suggests that in cases of "found art" or amateurish art made from very valuable materials, we might want to say that the relevant "lump" kind dominates the relevant "artifact" kind, despite the fact that the latter will presumably entail a wider range of properties. It is not clear what exactly constitutes these cases as atypical (apart from the fact that they are counterexamples to Burke's criterion); but be that as it may, Burke grants that his criterion would need to be modified in order to accommodate them. Apart from such "atypical" cases, however, he thinks the criterion is serviceable in its present form.

But Burke's criterion seems open to at least two objections. The first is that there seem to be many cases which are clearly not atypical and which are nevertheless such that Burke's criterion does not give us a *clear* decision. The second is that if (contrary to the first objection) Burke's criterion does give us a clear decision in these cases, then there seem to be many obviously non-atypical cases in which Burke's criterion gives us the *wrong* decision. With respect to the first objection, the cases I have in mind are those in which an object belongs to more than one artifact kind; with respect to the second objection, the cases I have in mind are those in which an object belongs to an artifact kind and a natural kind.

Let us first consider objects that belong to more than one artifact kind. Examples abound: some statues are pillars, some axes are hammers, and some nets are hammocks. But I see no reason to think that belonging to any of the kinds just mentioned entails a wider range of properties than does belonging to any of the others. Members of each kind must possess physical properties had in common by every material object, and they must also possess a variety of functional and/or aesthetic properties had by artifacts of the kind in question. But there seems to be no reason to think that, say, the range of properties entailed by being a statue exceeds or is exceeded by the range of properties entailed by being a pillar. If this is right, then Burke's criterion fails to pick out one or the other as the dominant kind. And the same can be said for the other pairs of kinds mentioned above.

This is a problem for Burke if we think that, say, *statue* and *pillar* are the only kinds (besides *aggregate*, *lump*, and so on) to which a statue which is also a pillar belongs. But Burke might reply that

the problem dissipates if we simply recognize a third kind to which the object in question belongs, namely *statue-pillar*. This may be a reasonable move in light of the fact that, in the case of a statue which is also a pillar, neither 'statue' nor 'pillar' really seems to count as the best answer to the "What is it?" question. And it saves Burke's criterion since it does seem clear that *statue-pillar* entails a wider range of properties than its rivals. Unlike a mere statue, a statue-pillar must have the functional properties of a pillar, and unlike a mere pillar, a statue-pillar must have the aesthetic properties of a statute. And, again, similar remarks would apply with respect to the other pairs of artifact sortals mentioned above.

This reply raises a number of questions. For example, suppose a sculptor builds a statue, never intending for it to be used as a pillar. The sculptor dies, perhaps her civilization comes to ruin, and centuries later the statue is discovered and, being unappreciated for what it really is, it is made into a pillar. What is the dominant kind of the object now being used as a pillar? If the dominant kind is *statue-pillar*, was that the dominant kind previously as well? If not, then we have the apparently odd consequence that one way to destroy a statue is simply to use it as a pillar. If so, then we have the apparently odd consequence that, whereas the sculptor thought she was bringing into existence a statue, in fact she was bringing into existence an object of a different sort: a statue-pillar. Moreover, if the object is later used as a giant paperweight, then it seems the same line of reasoning would lead us to say that the sculptor wasn't really even bringing into existence a statue-pillar; she was instead creating a statue-pillar-paperweight. And since, in fact, there is no end to the variety of uses (or misuses) to which an ordinary statue can be put, it seems we will ultimately be left with the bizarre conclusion that no one, except maybe God, *really* knows what the best answer to the "What is it?" question is for the statue, and so no one (except God) really knows what its essential properties are.[26]

There are various places where one might bite the bullet here. For example, I do not find it terribly implausible to say that one way to destroy a statue is simply to use it as a pillar. Nor do I find it terribly implausible to say that no one really knows what the essential properties of many ordinary artifacts are. Those who share my intuitions in this will be able to save the claim that Burke's criterion

always (in principle, anyway) yields a clear decision. Unfortunately, however, the very reply that I have been urging on Burke's behalf to overcome this first objection is what makes his criterion vulnerable to the second objection.

Consider those cases where one object belongs to both an artifact kind and to a natural kind. Again, examples abound: some bushes are fences; some trees are catapults (at least in cartoons); and some human beings are (for a time anyway) chess pieces or tables. In each case, there are different essential properties associated with the kinds in question, so dominance is a live issue. Which kind dominates? Ordinarily, we might say that the natural kind always dominates because membership in natural kinds always at least entails possession of biological properties and sometimes entails possession of mental properties, whereas membership in artifact kinds never entails possession of any such properties. Suppose we grant this. Still, it seems that if we accept the reply I suggested for the first objection then we will be forced to say that there are further kinds to which these objects belong: kinds such as *bush-fence*, *human chess piece*, and so on. But once we grant this, it seems we are committed (by Burke's criterion) to saying that the natural kind does *not* dominate. Membership in the kind *human chess piece*, for example, entails possession of both biological properties *and* certain functional properties, whereas membership in the kind *human being* fails to entail possession of the relevant functional properties and membership in the kind *chess piece* fails to entail possession of the relevant biological properties. But, of course, it seems obvious that the best answer to the "What is it?" question for a human chess piece is *not* "human chess piece" or any other such sortal term. The best answer is "human being". But that is not the answer Burke's criterion seems to give us.

5.2. *The Proposed Answer*

So Burke has not given a satisfactory answer to the "Which one?" question. His criterion fails because either it does not give us a clear decision in a number of cases, or else it gives us an incorrect decision. What is the problem? Burke is trying to provide a criterion by which one could simply list the kinds to which an object belongs and decide, *solely on the basis of general facts about the relations*

among kinds, which kind dominates the rest. But I am inclined to doubt that any such criterion could be successful. It seems to me that dominance depends upon more than just general facts about the relations among kinds; it depends upon the essential properties of the object in question. Therefore, the answer I propose is the following:

> (KD)   For any x, K is x's dominant kind just in case (i) x is essentially a K, and (ii) for any kind K$'$ such that x is essentially a K$'$, x's being a K entails x's being a K$'$.[27]

KD is perhaps not as informative as we would like it to be. Unlike Burke's criterion, KD does not allow us simply to list the kinds to which an object belongs and discover, without further information about the object itself, which kind is the dominant kind. But what KD lacks with regard to this kind of epistemological usefulness is, in my view, more than made up for by its metaphysical correctness. It seems to give the right answers in easy cases; it (in a sense) explains why the hard cases are hard (they are hard because we are uncertain about what the thing in question is essentially); and it allows us to accommodate the intuition that some people have that it is possible for one kind to sometimes dominate and sometimes be dominated by another. Let us look at a few examples.

First example: Consider Socrates. We know that Socrates is essentially a human being; many also think he is essentially a lump of tissue. KD tells us, I think correctly, that *human being* dominates *lump of tissue*. Similarly for other "easy" cases, such as those (discussed above) for which Burke's criterion yields correct answers.

Second example: Consider a case in which one object is a member of two artifact kinds. Suppose, for example, that a builder decides to use our statue of David as a pillar. Burke's criterion, we saw, either fails to tell us what *David*'s dominant kind is, or else it forces us to pick out the kind *statue-pillar* as the dominant kind. KD, however, does not suffer from this problem. Assume *David* is essentially a statue and not essentially a pillar: then the dominant kind is *statue*.[28] Assume, on the other hand, that *David* is essentially a pillar and not essentially a statue: then the dominant kind is *pillar*. Assume, on yet a third hand, that *David* is essen-

tially a statue-pillar (or essentially both a statue and a pillar): then the dominant kind is *statue-pillar*. And since it is our intuitions about what *David* is essentially that ultimately determine what we identify as *David*'s dominant kind, there is no danger (as there was with Burke's criterion) that we will arrive at an answer that comes into conflict with those intuitions. If, for example, one is already convinced that *David* is essentially a statue-pillar, then one will find it thoroughly unproblematic that one consequence of identifying *statue-pillar* as *David*'s dominant kind is that *David* is, always has been, and always will be a *statue-pillar*. If, on the other hand, one is convinced that *David* is essentially a statue and not essentially a pillar, then one will have no trouble with the conclusion that, once the objects that compose *David* come to compose a pillar, either *David* is destroyed or else those objects compose a pillar that has the essential properties of a statue. Thus, KD not only gives us clear answers; it gives us (conditionally) correct answers every time.

Third example: Consider a case where one object belongs to both an artifact kind and a natural kind: a human chess piece, for example. The trouble with Burke's criterion was that, in light of the first objection, it seemed that his criterion would ultimately force us to identify *human chess piece* rather than *human being* as the dominant kind in this case. But KD runs into no such problem. A human chess piece, after all, is not essentially a human chess piece. Suppose Fred is now a human chess piece. Presumably he wasn't one at birth, and presumably he will not be destroyed when he ceases to be part of a chess game. Thus Fred is not essentially a human chess piece. Thus *human being* is Fred's dominant kind, since *human being* (we assume) satisfies conditions (i) and (ii) in KD. Thus, again, KD gives us clear and correct answers.

Fourth example: Unlike Burke's criterion, KD allows us to accommodate the intuition that it is possible for one kind to some-times dominate and sometimes be dominated by another. Consider cases of "found art". Suppose, for example, that purely natural processes of erosion give rise to a rock-formation that bears an incredibly striking resemblance to Elvis Presley. Since there is no sculptor, it is not exactly clear that this rock-formation really counts as a statue; and even if it does, it is not clear that it would count as a statue *of* Elvis. But suppose it does. Then we might ask the

question: "Does this statue of Elvis have the essential properties of a statue, or of a lump of rock?" Any answer to this question will, of course, be controversial; but Burke's criterion pretty clearly *forces* us to say that the statue of Elvis has the essential properties of a statue. But KD does not force us to this conclusion. KD makes our answer to this question depend upon our answer to a prior question: "Is this statue of Elvis *essentially* a statue?" If it is, then KD picks out *statue* as the dominant kind; if not, then presumably it picks out *lump of rock*.[29] For those who think that the statue of Elvis is not essentially a statue, this would constitute a case where *lump of rock* dominates *statue*, despite the fact that there are other cases where *statue* dominates *lump of rock*.

So KD has several advantages over Burke's criterion. It gives us clear and correct (albeit conditional) decisions in cases where Burke's criterion could not, and it allows us to accommodate the intuition that it is possible for one kind to sometimes dominate and sometimes be dominated by another. But some might argue that KD has at least one important disadvantage. As we have seen, KD will not answer questions like: "Is the statue of Elvis essentially a statue?" Burke's criterion would have. Thus, one might object, at least on that score my criterion is inferior to Burke's.

But in my view, it is a mistake to expect an answer to the "Which one?" question to tell us everything we need to know about the essential properties of an object. My goal in this paper has been to provide a solution to the PMC that is compatible with (and that can be adopted by anyone who endorses) claims α–ι above. And since anyone who endorses my solution will presumably want to endorse some criterion of dominance along with it, it would run contrary to my goals to offer a criterion of dominance that is incompatible with views that are themselves compatible with α–ι. Burke's criterion, like any criterion that purports to tell us the essential properties of a thing, *is* incompatible with views that are compatible with α–ι. Burke's criterion is incompatible with conventionalist views according to which the essential properties of some things depend not just on how their parts are arranged (or on what range of properties is entailed by the kinds to which they belong) but on human intentions toward those things. And this sort of problem will plague any criterion that purports to tell us the essential properties of a

thing. That is, any such criterion will ultimately have to align itself either with the conventionalist camp or with the non-conventionalist camp, and so it will not be serviceable to members of the opposing camp. Views like mine, however, which do not purport to give information about essential properties, are serviceable to members of both camps.

Thus, I take the fact that my criterion of dominance is not informative about the essential properties of things to be an advantage rather than a disadvantage. Unlike Burke's criterion, it keeps my solution amenable to all, rather than just some, proponents of α–ι. To be sure, it would be nice to have an argument for a claim about kinds and essential properties that settled the dispute between conventionalists and non-conventionalists; but providing such an argument is part of a different project – not just in the *de facto* sense, but in the *de jure* sense as well. Providing an argument like that is part of a project that undertakes to *justify* claims like β above rather than just taking them for granted. Again, it would be nice to have an argument that provided such justification; but the present project is complete without one.[30]

NOTES

[1] Rea, 1995a.

[2] Not necessarily *natural* kinds.

[3] 1994b, p. 600, n. 13 (my italics).

[4] For example, some puzzles arise because it is clear that an object of one kind could have been composed of different matter throughout its entire life whereas an object of another kind could not have been. Here persistence is not at issue; rather, the problem arises because of a fact about the circumstances under which different kinds of objects may or may not exist.

[5] I thank an anonymous referee for helping me to see this point.

[6] In my usage, a constitutes b just in case, for any x, x is a proper part of a if and only if x is a proper part of b. Thus, constitution is reflexive, symmetrical, and transitive.

[7] Henceforth, unless otherwise stated, expressions like 'there is a K' should be taken as abbreviations for expressions like 'there is (in either the classificatory or the nominal sense) a K'.

[8] It will be unqualifiedly endorsed even by those proponents of the standard account, if such there be, who do not acknowledge any distinction such as that between nominal Ks and full-fledged Ks.

[9] This definition assumes that (i) only kind terms count as good answers to the question "What kind of thing is *x*?", and (ii) if a term T refers to a kind K′, and if *x* is not a K′, then T is not a good answer to the question "What kind of thing is *x*?"

[10] Strictly speaking, there is a further assumption at work: the assumption that identity is necessary. Those who deny that assumption (e.g., Allan Gibbard, 1975; André Gallois, 1990) might hold something like the following: There is a sense in which statues and lumps of bronze have different essential properties (at any rate, they have different counterfactual identity conditions); but that doesn't show that the statue and its constitutive lump of bronze are distinct; rather, it just shows that they are contingently identical. However, I think (protestations from Gibbard and friends notwithstanding) that the assumption that identity is necessary is beyond reproach; therefore, for the sake of convenience, I will ignore this assumption in the ensuing discussion.

[11] By 'occupied' I mean 'completely occupied'. Thus, in my usage, a region that contains a statue whose lower half is made of bronze and whose upper half is made of lead is not "occupied" by a lump of lead. Rather, it is *partially* occupied by a lump of lead and *partially* occupied by a lump of bronze.

[12] Here, and throughout, I am using 'the *p*s' as a term of collective reference which refers only to the *p*s and *not* to any object or set composed of or containing the *p*s.

[13] To embrace the third alternative is to solve the problem by always rejecting some feature of the story that introduces the problem, though not necessarily the same feature for every puzzle. For example, one might reject the Existence Assumption for some puzzles that raise the PMC, the Essentialist Assumption for others, and the PACP for still others.

[14] For a detailed presentation of these puzzles and an explanation of how it is that each is an instance of the PMC, I refer the reader to my 1995a and my 1997.

[15] Note, however, that in the case of the lump that has been molded into a statue, if we think that the finished product is best described as a lump – if *lump* dominates *statue* – then there is no reason to think that it is distinct from the original lump. I will take up the question of how one kind can sometimes dominate and sometimes be dominated by another in Section 5 below. For now, what is important to note is that if this is possible, I am not committed to the view that there are alterations in shape that lumps simply *cannot* survive. (Similar remarks will, of course, also apply to the example of the wool sweater.)

[16] p. 174.

[17] For those who do, Burke 1994b (pp. 596–597) supplies an explanation of why we might have such an intuition despite its falsity.

[18] At this point one might ask a further question: Suppose a sculptor takes a lump of clay, molds it into a statue, and then immediately destroys the statue so that we are left again with a lump. When the statue is destroyed, does the original lump come back into existence? Or is it a different lump? I have no answer to these questions. I have no principled objection to the possibility of intermittent exist-ence, but neither do I have any argument for that possibility. And since nothing in

the present discussion requires a decision one way or the other, I will refrain from giving one.

[19] To reject this thesis is to embrace an "accidental sameness" solution to the PMC. I explore such a solution in my 1995b.

[20] I defend this assumption in Rea (forthcoming).

[21] It is easy to have the impression that KM by itself commits one to co-location, but in fact it doesn't. One might endorse KM but deny the existence of various kinds. Peter van Inwagen (1990), for example, holds that the only composite objects that exist are living organisms. His view avoids the PMC, is not committed to co-location, and is consistent with KM.

[22] See his 1994b. As before, however, I part from Burke by casting my discussion (and therefore his views as well) in terms of kinds and essential properties rather than in terms of sortals and persistence conditions.

[23] 1994b, pp. 610, 614.

[24] Obviously, being a cell entails possession of biological properties; and perhaps being a hunk of cells entails possession of *some* biological properties. So presumably Burke's point here is that there is a wide variety of properties that are essential to organisms but not essential to mere hunks of cells.

[25] 1994b, pp. 610, 614.

[26] One might object here that it doesn't follow from the fact that something can be used as a K that it is a K. But why wouldn't that follow? If something *can* function as a hammer or a paperweight, then why wouldn't it *be* a hammer or a paperweight? Surely, it can't be that something must be actually functioning as a hammer in order to be a hammer; for then there could be no unused hammers in tool boxes or on shelves. Nor could it be the case that something must have been *intended* to be used as a hammer in order to count as a hammer. For I take it that if an artist were to produce something perfectly resembling an ordinary hammer, her product would be a hammer regardless of whether she intended it to be used as such and, indeed, regardless of whether she had ever even seen an actual hammer.

[27] As I noted at the end of section 4, I take it that x is a K just in case x's parts are arranged K-wise. Thus x is essentially a K just in case x is essentially such that its parts are arranged K-wise. Note also that individual essences are not kinds; thus, KD does not have the untoward consequence that an object's individual essence is always its dominant kind. Moreover, I assume that no two kinds necessarily have exactly the same members. That is, I assume there cannot be x, K, and K' such that (i) x is essentially a K, (ii) x is essentially a K', (iii) x's being a K entails x's being a K', (iv) x's being a K' entails x's being a K, and (v) K $\neq K'$.

[28] Strictly speaking, the dominant kind would probably be something more like *statue-of-David*; for if a statue of David is essentially a statue, presumably it is also essentially a statue *of David*. (I.e., one way to destroy a statue of David, it seems, would be to alter it so that it becomes a statue of Goliath.) But since it has been convenient throughout this paper to ignore this complication, I will continue to ignore it in what follows. (But see note 29 below.)

[29] Though I should note that, strictly speaking, if our statue of Elvis is essentially a lump of rock, then *statue* could not be the dominant kind since being a statue

does not entail being a lump *of rock*. Thus, if Elvis is essentially a statue, then either *rock statue* is the dominant kind, or *statue* is the dominant kind but the statue of Elvis is not essentially a lump of rock. Similar remarks apply with respect to any artifact and the corresponding "lump" kinds to which it belongs. I should also note that I have been assuming throughout that being a statue entails being a lump. If this is false, then to preserve the truth of KD I must deny that something that is essentially a statue is also essentially a lump. This is a consequence that I willingly accept, for it does not seem to pose any remarkable difficulties. (And, again, similar remarks apply with respect to other artifacts and their corresponding "lump" kinds.)

[30] I would like to thank Peter van Inwagen for helpful discussion of the issues in this paper, and Michael Burke, Michael Loux, Alvin Plantinga, Philip Quinn, Dean Zimmerman, and an anonymous referee for this journal for helpful comments on earlier drafts. Portions of this paper were read at the Central Division Meeting of the APA in Pittsburgh, April 1997.

REFERENCES

Burke, M. (1994a): 'Dion and Theon: An Essentialist Solution to an Ancient Puzzle', *Journal of Philosophy* 91, 129–139.

Burke, M. (1994b): 'Preserving the Principle of One Object to a Place: A Novel Account of the Relations Among Objects, Sorts, Sortals, and Persistence Conditions', *Philosophy and Phenomenological Research* 54, 591–624.

Burke, M. (1996): 'Tibbles the Cat: A Modern Sophisma', *Philosophical Studies* 84.

Gallois, A. (1990): 'Occasional Identity', *Philosophical Studies* 58, 203–224.

Gibbard, A. (1975): 'Contingent Identity', *Journal of Philosophical Logic* 4, 187–221.

Lowe, E.J. (1995): 'Coinciding Objects: In Defense of the Standard Account', *Analysis* 55, 171–178.

Rea, M. (1995a): 'The Problem of Material Constitution', *The Philosophical Review* 104, 525–552.

Rea, M. (1995b): 'An Aristotelian Solution to the Problem of Material Constitution', Presented at the Eastern Division Meeting of the APA, New York City, NY.

Rea, M. (1997): 'Introduction', in M. Rea (ed.), *Material Constitution: A Reader*, pp. xv–lvii, Lanham, MD: Rowman & Littlefield.

Rea, M. (Forthcoming): 'In Defense of Mereological Universalism', *Philosophy and Phenomenological Research.*

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