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Tropes and Other Things

Cynthia Macdonald

Our day-to-day experience of the world regularly brings us into contact with middle-sized objects such as apples, dogs, and other human beings. These objects possess observable properties, properties that are available or accessible to the unaided senses, such as redness and roundness, as well as properties that are not so available, such as chemical ones. Both of these kinds of properties serve as valuable sources of information about our familiar middle-sized objects at least to the extent that they enable us to understand the behaviours of those objects and their effects on each other and on us. I see the apple on the table before me, and in doing so I see its redness, its roundness, and so on. I do not see, but know that it has, a certain chemical constitution. The knowledge gained of the apple by means of both properties tells me something about the nature of that apple. In general, most, if not all, of the properties that objects in the observable world possess serve as the basis of our knowledge of such objects. But the subject-predicate form of much of our discourse and thought about objects suggests that substances are one kind of thing, properties another. We use subject terms such as names to identify objects, predicate terms to attribute properties to them. What, then, is it for an object to have a property? And what is the relation between an object and its properties?

These two questions and their treatment have a long and respected tradition in philosophy. In what follows, I shall briefly outline some classic answers to them and the difficulties associated with those answers, in order to provide a basis upon which to discuss the view that, at root, reality consists of individual, particularized qualities known as tropes. This view, and the theory that grounds it, has been thought by many philosophers over the centuries to offer an important and ultimately more satisfactory answer to the two questions

just posed than the other classic positions that I shall describe. I want to see what the prospects for trope theory are. So I need to explain what exactly trope theory is, and how it differs from these other classic positions.

1. Some Classic Views of Properties and Their Relation to Substances

Consider the first question raised above: what is it for an object to have a property? This question introduces a controversy between those who believe that all that exists in the world is particular in being wholly and completely in only one place at any given time and concrete in excluding other things of the same kind being in the same place at the same time, and those who believe that, in addition to individual, concrete particular things, there are properties, or universals. The former are known as nominalists, whereas the latter are known as realists.¹ Universals are things that can be wholly and completely in many places at the same time, and so are universal rather than particular, and are such that many of them can be in the same place at the same time, and so are abstract.

Suppose that there are two pens on my desk. They are both red. We can describe the agreement in colour of the two pens in either of the following two ways. We might say that the first red pen is exactly like second red pen in colour. Or we might say that the first red pen has or shares the same colour as the second red pen. The first way of describing the situation suggests that two red pens, and a relation between them of likeness or resemblance, enter into it. This is the way a certain kind of nominalist whom we may call a *moderate*

¹ Strictly speaking, nominalists may recognize the existence of properties, where these are viewed as classes or sets of concrete particulars. However these classes will themselves typically be viewed as constructions on individual concrete particular things, not as irreducible kinds of things that exist in the world alongside particular concrete things. So, for example, Campbell says,

Some writers use the label 'nominalist' for every denial of universals, but this blurs a crucial distinction: ordinary nominalisms, in denying universals, deny the existence of *properties*, except perhaps as shadows of predicates of classifications. They recognize only concrete particulars and sets... (1990, p. 27)

Trope theory is thus depicted as an alternative to both realism and nominalism: an alternative to the former because it denies the in existence of universals as entities of an irreducible ontological category distinct from concrete particulars, and an alternative to the latter because it affirms the existence of properties as individual, particular things. For more on realism and nominalism, see George Bealer (this volume), and the papers in that section.

nominalist would prefer to describe the situation.² A realist, however, would prefer to describe the situation, not as one of colour resemblance, but as one of colour *identity*. According to the realist, there are in our imagined situation three things: two pens, and one universal, redness, which is instantiated wholly and completely in each.

The motivations for each of these positions are numerous and complex.³ For example, one important motivation for realism is semantic. Realists point to the phenomenon of abstract reference, i.e., apparent reference to abstract entities such as wisdom and beauty, and the generality involved in predication (and in thought), in support of their position. Predicates such as 'is red' and their associated concepts are general in that they are applicable to an indefinite number of particular things. This evident advantage of realism is offset by an advantage in epistemic motivation for nominalism. Nominalists point to the apparent inaccessibility of abstract objects such as universals - objects whose identities are not exhausted by, or perhaps even relevantly connected to, any place in which they may be instantiated in the experienceable world at any given time - to human experience. This presents a problem for those who wish to account for knowledge of universals on a view that grounds knowledge in sensory experience, or on a view that requires causal interaction between knower and known.

Matters are yet more complicated, since there are explanatory motivations for both positions. Some realists maintain that universals and other abstract objects such as numbers are indispensable to other disciplines, such as science (Putnam (this volume), Sober (1981, 1993)). This seems to be an explanatory motivation for realism. However, nominalists deny that such abstract objects are in fact indispensable, arguing that science can do without them. Realists have also claimed that such objects are required to explain the generality in thought and language, and for the 'objectivity' of our judgements - the idea that since our judgements succeed in expressing something objectively true or false about the world, there must be

² I say 'moderate' here because such a nominalist is prepared to say that there is an objective basis in reality for the application of the same predicate, such as 'red', to a number of particular things, namely, particular resemblances that hold between them. This contrasts with the more extreme view, which Armstrong (1978) calls 'predicate nominalism', that things that are called by the same name have nothing more in common than that they are called by the same name.

³ For more on motivations for realism and nominalism, see George Bealer (this volume), and Michael Loux (1978).

something in the world that answers to them. Nominalists have typically denied this, or maintained that although these objects are required for such explanatory purposes, they need not be construed realistically but simply as classes constructed on concrete particular things.⁴

Against both realism and nominalism it could reasonably be said that neither has the explanatory advantage over the other. On the one hand, nominalism seems incapable of explaining the generality in thought and language. On the other hand, realism's attempt to do so by the postulation of universals seems also to fail. Apparently, neither realism nor nominalism gives an entirely satisfactory and unproblematic answer to the question of what it is for an object to have a property. On the contrary; both positions seem to be plagued with difficulties.

Turn now to the second question raised earlier: what is the relation between an object and its properties? This question and its treatment also have a long and venerable tradition in philosophy. Two theories that attempt to provide an answer are particularly well-known. These are the substratum theory and the bundle theory.⁵ According to the former, an individual object, or substance, is the bearer of the properties with which it is associated, but is in itself bare, or propertyless. It is simply that which grounds, or supports, or unifies, the properties associated with an individual substance; and it is what individuates, or distinguishes, each substance from every other substance, even those whose properties are indiscernible from it. It is, in other words, a *bare individuator*. According to the latter theory, an individual object or substance is nothing 'over and above' the properties with which it is associated. A substance is a bundle, or 'congregation' of properties, and nothing more.⁶

⁴ Thus, Campbell tells us,

To have a property reduces to belonging to appropriate classes of glorying in appropriate descriptions. *To be a property* is to be an open class of concrete particulars. (1990, p. 17)

Resemblance Nominalism...takes likenesses and differences among objects as primitive and attempts to construct a theory of properties on that basis. (1990, p. 18)

⁵ For more on the bare substratum theory and the bundle theory, see Michael Loux (this volume), and Loux (1978).

⁶ My use of 'property' here is intended to be neutral on whether properties are taken to be universals or particulars.

Like realism and nominalism, the bare substratum theory and the bundle theory are each motivated by a variety of considerations. Each has its epistemic advantages. On the one hand, we think that what we encounter when we encounter individual objects in experience are not bare individuators but the properties of a substance. This suggests a view of substances as mere bundles of properties. On the other hand, we perceive substances as natural unities, which mere bundles or aggregations of properties apparently are not. This suggests that substances are possessed of an element that grounds or unifies the properties with which they are associated, and that it is this element that makes substances *substances*. That is, it suggests that substances are substrata, individuals that have, but are not identical with, their properties.

Both of these theories have professed to be able to serve a variety of explanatory purposes. For example, the substratum theory has claimed to be better able than the bundle theory to explain the phenomenon of change in individual substances - the fact that they survive change while remaining the very same things, as well as the (modal) intuition that an object could have been different than it in fact is. If substances are identical with their properties, then change, which involves the acquisition or loss of a property by a substance, seems to be impossible. For it entails that a substance could lose a constituent that gives it its identity. But it cannot do that without undergoing a change of identity, i.e., becoming something else altogether. So, if substances change, and survive change without losing their identities, the bundle theory cannot explain how. If, however, in addition to its properties, a substance has as a constituent a bare individuator that is changeless, the problem of survival through change can be explained. Bare individuators are what survives through change. In a similar vein, bare individuators can be invoked to explain the intuition that an object could have been different than it in fact is.

The bundle theory, on the other hand, has professed to be better able than the bare substratum theory to explain the nature of substance, since bare substrata have no natures. The bundle theory has also claimed an epistemic advantage over the substratum theory, since we never meet with bare substrata *as such* in experience. However, in response to this the

substratum theory has claimed to be able to accommodate our experience of substances as real unities, which, it is said, the bundle theorist cannot accommodate.

As even this very incomplete and cursory survey indicates, both theories have their attractions. However, both suffer from serious problems. Further, the weaknesses of one theory are not necessarily the strengths of the other. Some problems, such as the problem of how to account for the phenomenon of survival through change, and the problem of how to account for the unity that substances possess, plague both theories.

If one were to look no further or more deeply into the matter, one might be tempted to think that realism and nominalism exhaust the possible ways of attempting to answer the question of what it is for a substance to have a property, and that the substratum theory and the bundle theory exhaust the possible ways of attempting to answer the question of the relation between an object and its properties. However, in both of these cases there is a third possibility: trope theory.⁷

Trope theory has been hailed as the answer to both of the questions raised earlier, and so as the solution to the 'problem' of universals and to the problem of the relation of particular objects or substances to their properties. It has therefore claimed to have an explanatory advantage over traditional theories of what it is for a substance to have a property and traditional theories of what the relation is between a substance and its properties. It has also professed to have an epistemic advantage over such theories. Let us see whether this is so.

2. What are Tropes?

⁷ The word 'nominalism' has several meanings, as Simons (1993) points out. As I am using the term, trope theory is not nominalist. Since it is not realist either, we need a name to cover all of the theories that are not realist. We might call these theories 'particularist'. Then nominalism and trope theory stand in contrast with realism in being particularist. However, as Simons has pointed out to me, what was called 'nominalism' in the middle ages (by William of Ockham, for example) included both substances and quality tropes. According to this use of the term, nominalism gets its name not from its view of what there is, but from its view of universals, namely as names. This second way of understanding nominalism would not construe trope theory as an alternative to realism and nominalism, but rather, as a nominalist position. I follow Campbell (1990) in classifying the theories I discuss here in the former rather than in the latter way, reserving the term 'nominalism' for the view that properties either do not exist at all, or, if they do, are merely classes or sets of particulars.

Consider this particular sugar cube sitting on my saucer. It has certain properties: it is white, it has length, breadth, and depth, it has square surfaces, size, position, and so on. When I observe the cube, I observe its whiteness, its cuboid shape, its size, and its position on the saucer. These properties are particular properties of the cube. They are as particular as the cube itself; they are not particular instances of a property that can also be instanced at the same or distinct times in other places or objects. Just as the cube cannot be in more than one place at any given time - just as it is located all at once, wholly and completely, in the place it occupies at any given time - so too its whiteness, its size, and its shape cannot be in more than one place at any given time. For what I observe when I observe its whiteness is *this particular* whiteness of the cube, not an instance of whiteness in general. Similarly for the other observable properties of this particular cube.

Particular properties that individual objects possess, such as this whiteness of this sugar cube, are known as tropes. Tropes have been called by many names: one common one is 'abstract particular'. Others are 'particularized quality', 'concretized property', and 'individual accident'.

Keith Campbell tells us that resistance to the idea of a trope is based on a conflation of one pair of terms or concepts, that of universal and particular, with another, that of abstract and concrete. This conflation is responsible for the belief that since to be universal just is to be abstract, to be particular just is to be concrete. On this basis, the possibility that there should exist things that are both abstract and particular is ruled out.

However, what is universal is so because it is possible for it to be wholly and completely in more than one spatial position at any given time. In contrast, what is particular can only be wholly and completely in one spatial position at a given time. And this, Campbell tells us, is different from the contrast between abstract and concrete. What is abstract is "what is got before the mind by an act of abstraction" (Campbell, this volume, p. 478). It is what comes to be known by attending to some part, or aspect, of "what is presented". In contrast, what is concrete is grasped by attending to all of what is presented, not by attending to some part or aspect of it. No special act of selective attending is involved in our grasp of concrete things.

According to Campbell, ordinary substances are concrete, since they are not got before the mind by an act of abstraction. We do not need to attend to part of what is presented to me to grasp a shoe, or a sugar cube. But we do need to do this to grasp a trope of a sugar cube. So a trope of a sugar cube is abstract.⁸

By this way of reckoning, something can be both particular and so wholly and completely in the spatial position it is in at any given time, and abstract. This is because although it comes to be known by a process of abstraction, what is known is wholly and completely in the spatial position it is in at any given time. Tropes are these things.

As the contrast between the names 'abstract particular' and 'concretized property' may suggest, however, there is some disagreement about exactly how to understand what a trope is. Campbell's sense of 'abstract' is not the only one by which we understand something to be an abstract particular, as Simons (this volume) points out. There is another, well understood use of that term to mean 'non-spatiotemporal'.⁹ On this understanding, universals are abstract not because they are got before the mind by an act of abstraction, but simply because although they *have* instances in the spatiotemporal world, they are *other than* those instances. In other words, universals are thought to be *outside* space-time and are thought, for this reason, to be necessary beings. If they were not necessary beings, they could come into existence or go out of existence. But to do that would require there to be a time before which they did not exist and after which they did exist, or a time before which they existed and after which they did not.

Simons correctly points out that universals and other abstract things such as numbers and sets, are thought by many to be abstract in this second sense. But then, on this understanding of 'abstract', tropes turn out not to be abstract particulars, but concrete particulars (more specifically, concretized properties, in contrast with abstract particulars). However, this may not matter to the explanatory and other work that tropes can do.¹⁰

⁸ This raises a puzzle: mustn't I abstract the shoe from its surroundings? And if so, does this make shoes abstract?

⁹ Another sense of 'abstract' is 'less than fully determinate'. This reading is suggested by Locke (1975), Book Three.

¹⁰ On the contrary, as Simons (this volume) notes, it would defuse one objection to the classic view that individual substances, i.e., concrete particulars, are constituted by tropes. The objection is that tropes are too

Although the history of trope theory may not be as widely or as well recognized as that of other theories of the ontology of properties, it is firmly entrenched. It is thought that versions of trope theory were held by philosophers such as Aristotle, Leibniz, Berkeley, Hume, and Husserl (Mertz, 1996). More recently, versions have been held by Stout (1971), Strawson (1959), Honderich (1988), Armstrong (1989), Heil (1992), Simons (this volume), and Campbell (1990, this volume), whose recent work is a revival of the earlier foundational work of D.C. Williams (1953). Williams set forth a version of trope theory that is now regarded as the classic account (Bacon, 1997).

According to this account, tropes are the foundations of all things, and so the foundations of both individual objects and properties or universals. Individuals are bundles of compresent or concurrent tropes; tropes that are, so to speak, 'bundled' together by relations of compresence. For example, this whiteness, this cuboid shape, this size, this texture, and this position (amongst other tropes), related to one another by compresence relations, together 'constitute' or comprise this sugar cube. On the other hand, properties or universals are classes of exactly similar or resembling tropes.¹¹ Redness, for example, is the class of exactly similar rednesses. Let us look at these two aspects of the account in turn.

The classic trope view of individual substances typically construes the relation between the tropes that constitute a substance and the substance itself to be either a part-whole (or *mereological*) relation (Williams, Campbell), or some other kind of relation that is not mereological, such as a set-theoretic (Bacon) or a foundational (Simons) one.¹² The

insubstantial, too abstract, to make up anything concrete. One doesn't arrive at concreteness by bundling together things that are not concrete. If, however, tropes *are* concrete, then this objection to trope theory lapses.

¹¹ This conception of properties is problematic. When a new red thing (and so a new red trope) comes into existence, the class of red tropes changes (strictly speaking, a new class comes into existence, since classes - on the extensional view - cannot change their members). However, redness neither changes, nor does it go out of existence, to be replaced by a new property. So it looks as though there are truths about properties that are not truths about classes of tropes.

¹² The foundation relation relates *ways* in which things are rather than what they are, so relates the wrong sorts of things to be related in a mereological, or part-whole way. Set-theoretic relations are not mereological because set membership is transitive, whereas being part of a collection is not. Bacon (1995) claims that set-theoretic relations are not mereological because a set can change its actual members and still remain the same set, unlike the relation between a whole and its parts. Bacon is here treating sets intensionally rather than extensionally. On the extensional reading, a set cannot change its members and remain the same, since its identity is determined by its actual members. Presumably Bacon prefers the intensional reading since it allows him to reconcile his view that individuals are classes of tropes with the view that individuals can change with respect to their properties while remaining the same individuals.

ultimate constituents of substances are themselves *primitive tropes*, tropes that are too simple to be further analyzed, or broken down into parts. An example of a primitive trope is this whiteness of this sugar cube. It may appear that this trope can be further broken down, or analyzed into a part that is a 'thisness' and a part that is a 'whiteness'. But classically, trope theorists deny that this is possible. To suppose that it is belies a tendency to think of a property instance in realist terms, as an instance of a repeatable, universal entity, where it is a contingent matter whether the instance is an instance of this (or indeed, any) specific property. However, this whiteness is essentially this-whiteness, not essentially a thisness *and* essentially a whiteness, and so is a simple unit that cannot be further decomposed. Simple or primitive tropes are the foundations of all the individuals that exist.

One way of describing the relation between primitive tropes and the substances that they comprise is to say that individual substances are bundles of tropes. But this way of describing things would not by itself distinguish individual substances from universals, or properties, and relations. According to the classic theory, these latter are also bundles of tropes in some sense or other. What, then, distinguishes the bundles that are individual substances from the bundles that are universals (etc.)?

According to the classic theory, universals, or properties, and relations, are bundles (or classes or sets (Bacon)) of *exactly similar or resembling* tropes. Individual tropes (e.g., all the rednesses of all the red things) that comprise the bundle (or are members of the set) of exactly resembling tropes with which a given property is identical are then understood to be instances of that property. For a substance to have, or instantiate a property (universal, relation) is for one of its tropes to exactly resemble all of the tropes that comprise that property (or for the set of tropes that is the individual substance to overlap the set of tropes that is the property).¹³

¹³ However, there is a problem here. Bacon (1997) acknowledges that on this conception of individuals and properties, the way that individuals relate to properties is symmetric: instantiation is just overlapping between classes of tropes that are compresent with one another and classes of tropes that resemble one another. The result is that we can just as easily say that the property instantiates the individual as that the individual instantiates the property. Bacon rules this possibility out, but gives no principled reason. The problem here is not that there is no distinction between individuals, but that the relation between them, which we think to be asymmetric, turns out to be symmetric.

Given individual substances and properties or universals, trope theory is capable of handling compound universals and entities such as states of affairs, construed as complexes of individual substances, properties, and relations. The foundations of all things, then, are tropes and two fundamental relations: compresence and resemblance. Further relations may be needed at higher levels of trope complexity in order to handle compound universals, states of affairs, and so on, however, and a question arises as to whether treating all relations as tropes leads to an infinite regress. We discuss this problem further in section 3 (ii) below.

3. The Prospects for Trope Theory

As stated earlier, trope theory is thought to have a number of advantages over traditional theories of what properties are and how they relate to substances. One such advantage is epistemic (Bacon, Campbell). Another is explanatory (Bacon, Campbell, Simons). Let us consider these in turn.

(i) Trope Theory is Preferable to other Alternatives for Epistemic Reasons.

A number of recent advocates of trope theory have recorded this as an advantage for the theory, notably Bacon. As he sees it,

While tropism, like any other theory, must stand or fall on its merits, it may be asking too much to expect metaphysical arguments to establish its pre-eminence. The substance-attribute view, the property-bundle theory, the trope-bundle theory, and even perhaps model-theoretic particularism are apparently all capable of modeling each other (Bacon 1988). If tropes deserve first place in first philosophy, it may be for epistemological or even pragmatic reasons. As we knock about the world, it is tropes we encounter in the first instance. An intelligible theory can start there. (Bacon, 1997)

However, there are problems with this view. One problem concerns the grounds for epistemological priority of tropes to other categories of things. Another concerns what ontological conclusions are warranted, supposing those grounds to be compelling.

Bacon thinks that tropes are the first things with which we come into contact in experience of the world. However, not all trope theorists seem to be as unequivocal as Bacon is on this point. Campbell, for instance, believes that tropes are typically known by an act of abstraction "from what is presented". This suggests that tropes are not epistemologically prior to the substances that they comprise. On the contrary, it suggests that substances are epistemologically prior to tropes.

It is true that Campbell thinks that tropes could exist independently of one another even if they in fact do not.¹⁴ This might be seen as constituting a ground for thinking that they are epistemologically prior in the sense that, although they are not typically *known* independently of knowing the substances that they comprise, they are *knowable* independently of knowledge of such substances. However, this line of defence is problematic for two reasons.

First, not all trope theorists think it plausible, or desirable, to view tropes as capable of independent existence in this way. Simons (this volume), for example, expressly commits himself to the dependency of at least some tropes on others, and on the substances that they comprise. He acknowledges primitive 'internal' relations, resemblances being among these, and primitive compresence or concurrence relations, between tropes. He further posits primitive foundation relations, which are intended to serve as the 'glue' that unifies tropes into substances. Tropes, then, are dependent entities both in that they bear primitive internal relations to one another and in that they bear primitive internal relations to the substances that they found. As Simons explains,

¹⁴ This suggests that it is not a necessary fact about them that they are known by a process of abstraction, but a contingent one. This raises a potential problem, since it suggests that tropes are contingently abstract, whereas it seems to be a central commitment of trope theory that tropes are essentially, or by their very nature, abstract.

...the relation of foundational relatedness is defined in terms of dependence or foundation. The definition of a foundational system requires that the dependence needs of each member of the collection is met within the collection, and further requires that the whole system be fully connected. (Simons, this volume, p. 562)

Simons develops this view on behalf of trope theory in order to handle one of its principal difficulties, namely, that whereas substances seem to be real unities, bundles of tropes do not. Because Simons sees tropes as being, not parts of the individuals they comprise, but *ways* in which those individuals are, or 'individualized ways', they cannot exist independently of the individual substances whose ways they are. The internal foundation relation promises to provide what is needed to handle the distinction between mere bundles of tropes and substances, but only by conceding the dependency of tropes on substances.

It is unlikely that Campbell's view can handle this difficulty with trope theory without making such a concession. One might try to generate those bundles of tropes that comprise substances by appeal to internal relations between certain tropes. But then the question arises, which tropes? It is doubtful that the relevant ones can be identified independently of appeal to the fact that these are substance-involving. One might think, for instance, that it is primary-quality tropes, tropes such as this particular shape, and this size, whose compresence seems to be both necessary and sufficient for the presence of a substance. But the distinction between primary quality-tropes and other quality-tropes itself appears to require appeal to the fact that primary quality-tropes are those that are constitutive of substances.

It is difficult, then, to see how the view that tropes are epistemically prior to substances can be substantiated via the claim that tropes are ontologically independent and prior to substances, since this latter claim is itself questionable. Just as substances cannot exist (according to trope theory) without the tropes that found them, tropes seem incapable of existing without the substances that they found. And this existence dependence makes it difficult to see how one can be epistemically prior to the other: when I see a substance, I do so by seeing its tropes; but equally, when I see tropes, I see them as individualized ways of

the substances they found. Similarly for changes, construed as replacements of tropes in substances, and the things in which they are changes.

But there is a second reason why appealing to the ontological independence of tropes from the things they constitute or found is unlikely to show that tropes are epistemically prior to these things. Even if it were true that tropes and substances are ontologically independent of one another, and true that tropes are ontologically prior to substances, it would not follow without further argument that tropes are epistemically prior to substances. For the existence-independence of one thing from another is compatible with knowledge of one being dependent on knowledge of the other. Think, for example of sub-atomic particles, and theoretical entities generally. It is plausible to hold that the causal relations they bear, or are apt to bear, to things of other kinds they bear to them contingently. If so, then they could exist independently of the things to which they bear such causal relations. But it is hardly credible that they could be known without knowing their effects on things of those other kinds.

This point leads directly to the second problem mentioned above, which concerns what ontological conclusions, if any, would be warranted if it were true that tropes *are* epistemologically prior to entities of other categories. Suppose that we come to know substances by coming to know the ways that they are, to use Simons' terminology, rather like the way we suppose ourselves to come to know objects in the observable world by their observational properties, such as their colours and shapes. Still, no ontological priority is thereby established, for epistemological priority is compatible with existence-dependence. A substance's shape may be a trope of that substance, and it may be that I come to know that substance by coming to know its shape. But its shape, being a primary quality trope of it, may nevertheless not be existence-independent of the substance of which it is a trope, since it is plausible that primary qualities are themselves substance-involving.

(ii) Trope Theory is Preferable to Other Alternatives for Explanatory Reasons.

There seem to be two main grounds for thinking that trope theory is explanatorily superior to other accounts of the nature of properties and how they relate to substances. One focuses on the ontological economy of trope theory. The other focuses on the claim that trope theory is capable of explaining more, or better, what other alternatives attempt to explain. Let us consider these in turn.

Campbell, Simons, and Bacon all see trope theory as having an advantage over other alternatives in being a single-category ontology. That is, they believe that trope theory is a *simpler* theory than other alternatives, in using only one kind of thing to explain both what it is for an object to have a property and what the relation is between a thing and its properties. Bacon (1995), for example, claims that trope theory is preferable to others because it can do the same metaphysical work as the others with fewer kinds of things. And Campbell (1990) explicitly draws on Ockham's Razor in one of his arguments in favour of trope theory. According to this, we should not accept more kinds of entities in a theory than is absolutely necessary.¹⁵

But is it unnecessary to admit entities of basic kinds other than tropes? And can trope theory do the same metaphysical work as other ontologies? Campbell (1990) tells us that our thinking about the nature of reality is governed by a methodological principle, which he calls the *Axiom of Uniformity*. This principle expresses the conviction that at root, reality is constituted by elements of a single kind. This principle, Campbell tells us, it is vindicated by trope theory.

However, Campbell acknowledges that the Axiom of Uniformity, even if true, is not a necessary truth. So the question that needs to be answered is not whether trope theory vindicates the axiom, but whether trope theory, and the axiom it supports, are together vindicated by the superior explanatory work that they do. And that depends on the second

¹⁵ Bacon (1997) seems to see ontological economy as either an epistemic advantage or pragmatic one, as the quotation in the text indicates. It may be that he sees appeal to tropes as appeal to the familiar, rather than the unfamiliar, in our account of the nature of the world, which might be considered a pragmatic advantage, given that tropes are epistemically prior in being what we encounter first in experience. But this pragmatic advantage presumes what has been found to be questionable in 2(i), namely that tropes are epistemically prior to things of other kinds, such as substances.

question just raised; whether trope theory, as a single-category ontology, can do the same metaphysical work as other ontologies. So let us consider the grounds for this.

What is required in order for trope theory to account for the nature of properties and their relation to substances? Trope theorists are agreed that more is required than primitive, or basic tropes. At the very least, relations such as resemblance (for properties) and compresence, concurrence, or foundation (for substances) are required. But how are relations to be handled by the theory?

Trope theorists seem to be divided about this. Bacon, for example, takes relations between individual objects such as substances (ordinary relations such as being smaller than), as well as ones between tropes, to be as real and irreducible as non-relational or monadic characteristics of tropes and substances that they comprise. Particular compresence and similarity relations are to be treated, in the first instance, as second-level tropes, ones that bind or bundle basic, or first-level tropes. For example, second-level tropes are required in order to group particular rednesses together, and similarly for greennesses, squarenesses, and so on. These similarity groupings are the basis for the construction of the classes with which properties such as being green and being red are identified. Further relations are then required in order to bundle redness relations together with greenness relations as relations of colour, and similarly for squareness and triangularity relations vis a vis relations of shape, and so on. The same kind of situation holds for compresence relations and substances.

One consequence of this is that since, for any level n , $n+1$ level relations are needed to bundle tropes at that level into the required similarity or compresence relations, the account is threatened with an infinite regress (Bacon (1997), Daly (1994)). This regress threatens because trope theory seeks to account for the appearance of shared properties in terms of an analysis of resemblances between distinct tropes (such as individual rednesses) that posits only tropes, relational ones. So the analysis of resemblances at each level requires positing relational tropes at one level up, and there seems to be no end to this. Bacon himself

recognizes this, but blocks the regress by taking 3rd or 4th level relations to be primitive, or brute.¹⁶

Campbell, following Williams, takes a different view of relations. He holds that although trope theory requires compresence and resemblance relations in addition to primitive or basic tropes, these relations *supervene* on the tropes they relate and so do not constitute an addition of any real ontic significance:

'Supervenience' covers those cases where an unavoidable expansion in our descriptive resources does not rest on any expansion in our commitment to the realities described. (Campbell, 1990, p. 100)¹⁷

It is unclear why Campbell thinks that the fact (if it is a fact) that relations between tropes supervene on the inherent characteristics of the tropes involved in such relations shows the relations themselves to be of no real ontic significance. This would only be so if supervenience is a reductive relation, which some think it is not (Macdonald 1989). The fact that it is a dependency relation no more shows that supervening properties reduce to properties on which they supervene than the fact that changes are dependent on the things in which they are changes shows that changes are reducible to the things that undergo them, or the fact that individualized ways (tropes) of substances depend on substances shows that such ways are reducible to the substances of which they are ways.

Evidently Campbell thinks this because he thinks relations can be 'explained away' by distinguishing between 'inherent' and 'adherent' (or monadic and relational) characteristics of tropes. Inherent characteristics are ones that tropes have 'in their own right'. Adherent characteristics, in contrast, are ones that tropes have in virtue of their relations to other tropes. Campbell holds that the truth conditions of sentences ascribing adherent characteristics (such

¹⁶ For more on this, see Chris Daly (1994), who adapts Russell's (1911-2) argument against resemblance nominalism to trope theory.

¹⁷ Supervenience is typically expressed as a relation between two properties or families of properties such that, necessarily, objects that are the same with regard to the first (subvening) properties are the same with regard to the second (supervening) properties. (Alternatively: objects cannot differ with regard to the supervening without differing with regard to the subvening properties.) See Kim (1984). In this case, the relations of resemblance and compresence are envisaged as supervening on the tropes they relate.

as resemblances, or compresences, or causal characteristics) to n-tuples of tropes are held to be exhaustively determined by ones ascribing inherent characteristics (such as particular colours, or particular temperatures) to the individual tropes comprising those n-tuples. Inherent characteristics of tropes seem not only to be essential to them, but also the basis of what Campbell and others (e.g., Simons) call *internal* (as opposed to external) relations between them.

Campbell thinks that the distinction between inherent and adherent characteristics is important and useful to trope theory. This is because trope theory claims an explanatory advantage over other theories such as realism and nominalism and the bare substratum and bundle theories of substances with regard to infinite regress objections, and Campbell believes that the distinction between inherent and adherent properties and between internal and external relations can be employed to circumvent such objections. However, the strategy can only succeed if the distinction on which it is founded can be sustained. And it is uncertain whether it can be sustained. Let me briefly explain.

Campbell's appeal to the supervenience of relations on inherent properties of tropes is intended to block a certain kind of infinite regress objection to trope theory; in fact, the very regress objection just mentioned in connection with Bacon's view of relations. The objection is that tropes can only serve to explain the nature of properties and substances if there are relations (of compresence and resemblance, in the first instance) that hold between them. But on trope theory, these must also be tropes, if appeal to universals is to be avoided. But then relations of compresence need further relations to hold between them, and so too do relations of resemblance, to 'bind' or bundle them into the relations they are, and so on. At each stage of trope bundling, higher-order relations will need to do the bundling work. Such higher-order relations will then themselves need to be bundled, which will require relations an order further up still, and so on *ad infinitum*.

Campbell's strategy for blocking this objection is different from Bacon's. It is to ground all such relations in the inherent characteristics of primitive ground-level or primitive tropes, whose resemblances can then be explained by appeal to internal relations that bind

them by their very natures.¹⁸ At this stage, resemblances are, as it were, brute, not further analyzable.

However, the distinction between inherent and adherent characteristics is problematic. It may seem easy to mark with respect to such characteristics as being next to, or being in front of or being behind, on the one hand, and being in the Royal Northern College of Music or being in the British museum, on the other, where the former clearly and explicitly require the presence of at least two individuals, whereas the latter do not. But the distinction is much less easy to mark once one recognizes that, given that space, or space-time, is relative, positions themselves are relative. Thus it seems that the attribution of a position to a thing is implicitly, if not explicitly relational. Similarly for going faster than or going slower than and going at 55 m.p.h., since movement too is relative.

If this is true for characteristics of ordinary objects, why should it not be true for tropes?¹⁹ But a trope's position certainly seems to be an inherent, rather than an adherent, characteristic of it. So it seems that not all inherent characteristics of tropes are ones that they have 'in their own right'. Rather, they are ones that they have in virtue of their relations to other tropes (and so are *adherent* characteristics by Campbell's criterion).

Further, if a trope's position is not an inherent characteristic of it, then trope theory seems to be no real advance on realism, the view that there are universals. For a trope's time and place of occurrence is then contingently related to it and is simply another trope to be related to it by the relation of compresence. But then in order to block infinite regresses of the sort that threaten realism with respect to the instantiation or exemplification relation (see below), the relation between a trope and its time and place of occurrence must, as the relation between a universal and its instance must, be taken as primitive or brute. Not only does this fail to be an advance on realism, but it undermines the claim that individual tropes are particulars, by virtue of the contingency of their relations to space-time.

¹⁸ Simons (this volume) exploits a similar strategy. But cf. Bacon, who recognizes relational characteristics in addition to monadic ones even for the primitive tropes, and who blocks the regress at level 4, by taking the relations at that level to be brute, or primitive. See Bacon (1995).

¹⁹ In fact, it is arguable that irrespective of whether space-time is absolute or relative, a trope's position is a relative matter. If it is absolute, then a trope's position is determined by its relation to an absolute position in space-time, and if it is relative, then its position is determined by its relation to another trope or tropes.

In fact, Campbell (1990, p. 66) seems to favour the view that space-time regions or points are 'quasi-tropes' whose relations to primitive or basic tropes are contingent. So the compresence relations that 'bind' them seem not to be internal but external ones (cf. Campbell, 1990, p. 131). This makes particular tropes, such as this-whiteness-here-now, complex tropes, even if the compresence relations that bind their constituents are brute or primitive. It seems to follow from this that there are no simple tropes, no cases of a single trope's existence or occurrence. It also seems to follow that not only internal relations, but certain external relations, between basic tropes are brute or primitive.

One consequence of this is to undermine the theory's claim to explanatory superiority. Campbell prefers trope theory to realism on the grounds that realism has difficulties explaining the relation between properties and their instantiations. In his view, realism is forced to take that relation (which he calls 'inherence') as *sui generis* or primitive. And he thinks that this is objectionable (Campbell, 1990, p. 15), and that any two-category ontology will inevitably suffer from such a problem. But then, since trope theory evidently suffers from it too, the fact that trope theory is a single-category ontology cannot by itself be an argument in its favour. (For more on this, see the discussion of realism below.)

The appeal to internal relations between tropes is also problematic, irrespective of whether this is grounded in appeal to inherent characteristics of such entities. According to trope theorists, primitive tropes are essentially characterized in terms of the particularized properties that they are. In virtue of this, they are internally related to certain other tropes by their very natures. So this redness is internally related to that redness, but not, it seems, to that greenness.²⁰

What then about causal relations between tropes? Are tropes related in this way internally related or not? Campbell says not; but suppose that it is true that it is in the nature of an event to be a cause or an effect. Then events are essentially characterized in terms of

²⁰ It may look as though tropes are internally related only to those tropes that either belong to the same property, or belong to logically related properties. But trope theorists such as Simons (this volume) deny this. His foundation relations, which are internal relations, relate tropes belonging to properties that are not logically related, such as redness (the species) and shape (the genus). Redness (the species) and squareness (the species) are not foundationally related, since there might be nothing that is both red and square, but only many red things and many square things. But redness, the species, *is* foundationally related to shape, the genus, since red things must have some shape or other.

their causal roles, the causal relations that they are apt to bear to other events, and, on the classic account, some species of tropes (those that are events) are internally related to others causally. So it seems that some internally related tropes are not so related in virtue of characteristics that they have 'in their own right'.

And what about spatial relations, since tropes are essentially characterized by where and when they are? If one were to keep parity with the suggestion that it is essential characteristics that determine internal relations, one would favour the view that these relations are internal, just as the relations between particular rednesses are. But positional characteristics are not ones that tropes have independently of one another, if space-time is relative.

Evidently, just as it is hard to say whether certain characteristics of ordinary objects, such as solubility or malleability, require that they bear internal relations to other things, it is hard to say whether certain characteristics of tropes, such as their positions, require that they bear internal relations to other things. Are sons internally related to their fathers? Certainly being a son is not a property that a thing can have, 'taken by itself'. But nothing can be a son without being related to a father. Further, having the father one has may be an essential property of a biological organism such as a human being, irrespective of whether it is described as a son.

Suppose, contrary to what has just been argued, that trope theory is able to explain the nature of properties and their relations to substances by appeal to the distinction between inherent and adherent characteristics or internal and external relations without falling prey to infinite regress objections. Still, it is not clear that the theory has any explanatory advantage over realism and nominalism or over the bare substratum and bundle theories of substances with regard to such objections, since it may be that these other theories are also capable of explaining the nature of properties and their relations to substances without falling prey to such objections. We have seen that trope theory claims an advantage over traditional nominalism in being capable of explaining how resemblance relations are grounded in a way that avoids infinite resemblance regresses. Similarly, it claims an advantage over realism in being capable of explaining what things that resemble one another with regard to a particular

property such as redness have in common without generating infinite regresses. But are these claims true?

Consider nominalism. It is said to be inferior because it must rely on resemblances between particular substances in order to account for the generality in thought and language, for why different objects are all called red, or why they fall under the same concept, the concept, red. Since nominalism does not recognize either properties (at least not as primitive, or basic entities) or tropes, it must rely on relations of resemblance that are not respect-specific (as, for example, resemblance with respect to redness is) to generate the distinctions required to explain such generality. This leads to difficulties in cases where the same items resemble one another in more than one way (as, for example, red, triangular things do), where one wants to but evidently cannot distinguish the redness resemblances from the triangularity ones without presupposing the respects with which they resemble one another and so presuming the very taxonomies of concepts or predicates that nominalism is obligated to explain. It also leads to difficulties in cases where a group of items each resemble one another in at least one way, but where none of the items resembles all of the others in one single way (so there is no common element in the group at all), as when one red square thing resembles a red, triangular thing, which in turn resembles a triangular blue thing. Trope theory appears to have the advantage over nominalism here in that its primitive elements are already respect-specific with regard to the properties of which they are tropes. So resemblance relations between them are grounded in their very natures.

But this appearance of explanatory advantage is misleading. The problem that plagues nominalism concerns, not how to explain why things resemble one another, but how to explain why it is *not* the case that everything resembles everything else. That is, its real problem is to explain why it is that, say, the resemblances that bind green things do *not* include red things; that green-making resemblances are not the same as square-making ones, and so on. Trope theory gives the appearance of explaining such taxonomic differences by reference to particularized properties. However, the theory cannot help itself to property-distinctions to make good these differences. So how does the theory manage to distinguish the individual rednesses that make for redness resemblances from the individual greennesses

that make for greenness resemblances, or the individual squarenesses that make for squareness resemblances? To this the answer evidently is: their natures. And what is it about their natures that explains such resemblances? This, it is said, is *primitive*, brute.

But recourse to bruteness is not the sole prerogative of the trope theorist. A nominalist is also entitled to this move (and so, for that matter is a realist). What is it in virtue of which individual red things are red things? They are all red. What is it for them to be red? This is brute, not further analyzable. If it is legitimate for a trope theorist to employ this way of blocking further demands for explanation, it is equally legitimate for a nominalist to do so.

As far as explanatory power goes, then, trope theory and nominalism seem to be on an equal footing: both need resemblances. In the case of trope theory, internal relations and appeal to particularized properties promises to provide more substantial theoretical backing - ontological glue, so to speak - for resemblance. But that promise comes to no more than the promise offered by a moderate nominalist.

What about realism? Here again, trope theory claims to have the explanatory edge; but again it seems to come to no more than what the realist can offer. Realism too is under an obligation to explain the similarities between distinct particulars. It does so by positing universals, multiply instantiatable entities that are invoked to explain what unifies distinct particular things that fall under the same predicate or concept. The claim is that such things do so because each of them instantiates one and the same universal. So, according to the realist, red things resemble one another with respect to redness because each of them instantiates one and the same universal, redness.

A familiar objection to this attempt to explain how appeal to universals explains what collects distinct but resembling particulars is that such an appeal will only work if universals are related to their instances. However, the objection continues, such relations can only 'bind' a universal to its instances if there are further relations that 'bind' the initial relations to the universals, on the one hand, and to their instances, on the other hand; and this leads to an infinite regress.

However, the realist can block the threat of regress as effectively as the trope theorist can, by insisting that the ground-level relations that hold between universal and instance - instantiation or exemplification - are *sui generis* or primitive. It is true that the relation between universal and instance is contingent in that each instance of a given universal might have failed to exist or occur. But not much follows from this. In particular, it does not follow that any instance of a universal that in fact occurs might have occurred without being an instance of the universal it in fact is an instance of. It may be that at least some instances of universals are such that it is of the essence of those instances that they be instances of the universals they are (perhaps God's instantiation of benevolence is one such). In general, it is unclear why realism cannot avail itself of the view that some instances are essentially instances of the universals they are instances of or why, consequently, it cannot avail itself of the view that the relation between universal and instance, in at least some cases, is 'internal', grounded in the natures of the two things. Insofar as it can, it seems as capable as trope theory is of doing its explanatory work without falling prey to infinite regress objections, despite the fact that it employs entities of more than one kind to do that work.

3. Conclusion

Trope theory has been thought to have a number of epistemic and explanatory advantages over other alternative views on basic ontology, and it is both an interesting and important view. However, the discussion in the preceding section suggests that at least some of these claims are unfounded. The principal one on which this piece has concentrated is that trope theory has an advantage over both realism and nominalism with regard to explaining what it is for a thing to have a property. I have argued that this advantage is only apparent. It is true that realism posits more kinds of entities to do the explanatory work that it does than does either trope theory or nominalism. This is also true for moderate nominalism, since that theory works with particular objects such as substances and relations, and trope theory works with particularized properties (of which relations are a species) out of which it constructs

substances and properties.²¹ However, while I think that trope theory is important, and worth continued careful attention, I feel that the balance still favours a realist view. I would like to close with some words on why that is.

Simons, in discussing tropes, tells us that they are best viewed as particularized ways in which things can be, and that the relation between them and the things that they comprise is better viewed as a relation of realization rather than as a mereological (or part-whole) relation. I think that Simons is right about how best to view the relation between things such as substances and their properties. And trope theory, as a single-category ontology, seems to have an ontological advantage over realism in the number of kinds of basic entities it uses to do its explanatory work. Earlier I mentioned that Ockham's Razor is considered by some trope theorists, such as Campbell, to advantage trope theory over others. However, Ockham's Razor only applies to unnecessary posits. I think that universals may be necessary to provide a natural and economical account, at a much more sophisticated level, of how properties that are themselves related to one another in complex but non-logical or non-conceptual ways, as do certain supervenient to subvenient properties (such as, perhaps, moral properties to natural ones, or mental properties to physical ones) jointly relate to the things that have them.

Realism does not seem to have any special advantage over trope theory with regard to properties that are logically or conceptually related, such as redness and colouredness. Both theories are capable of claiming that such properties are either jointly realized in a single instance (realism) or that the tropes comprising the one property (redness) are identical with the tropes comprising the other (colouredness), thereby effecting economy at the level of

²¹ I think it likely that trope theory's professed explanatory advantage over the bare substratum and bundle theories in accounting for the relation between a substance and its properties is also more apparent than real, but I cannot develop the argument for that conclusion here. I can however give a brief indication of how the argument might be developed specifically with respect to the bundle theory. The question whether trope theory has the explanatory advantage over this theory depends in part on how the trope theorist is to account for the unity of substances. Trope theory uses relations of compresence to bundle together the tropes that are constitutive of substance. But compresence is typically taken to be an external rather than an internal relation. Given that it is, trope theory seems to have as much difficulty accounting for the unity of substances as does the bundle theory, which suffers from the objection that according to it, substances are 'mere collocations' of properties. Either trope theory, along with the bundle theory, can appeal to extrinsic relations (which for trope theory are further tropes, and for the bundle theorist are further properties), in which case a kind of infinite regress problem threatens: further relations are then needed to 'glue' the original relations to one another, and so on *ad infinitum*. Or the relations that are taken to bind the properties of the bundle together can be taken to be primitive or brute, not further analyzable.

instances or particularized properties. This economy can help to explain why property hierarchies that are infinite, as is, for example, the hierarchy of properties that begins with *being 20 metres long, being less than 21 metres long, being less than 30 metres long*, etc. are not a real worry from an ontological point of view. This is because it can help to dispel worries about causal overdetermination, where this is a matter, not of properties, but of their instantings. Instancing the property of being 20 metres long just is instancing the properties of being less than 21 metres long, being less than 30 metres long, and so on. So, by the extensionality of the causal relation, if the instancing of the property of being 20 metres long is causally efficacious, so is the instancing of the other properties. A similar point holds for tropes.

However, trope theory is not as easily able to handle relations between particular things and their properties when these properties are not logically or conceptually related to one another, but nevertheless bear interesting relations such as supervenience to one another. It is, for example, less well suited to provide the underlying metaphysic for such sophisticated positions in the philosophy of mind as nonreductive monism. Let me explain.

Nonreductive monism is the view that each mental event is a physical event although mental properties are neither reducible to nor correlated in a (causal or other) lawlike way to physical ones. The feat this theory seems to accomplish is to reconcile monism at the level of particular events and their causal transactions, with the *sui generis* distinctness of the mental and physical at the level of properties. However, trope theory has difficulties providing the underlying metaphysics for such a view (Macdonald and Macdonald, 1991). This is because whatever way it construes the monism claim, it runs up against one or another of the central commitments of nonreductive monism.

On the classic account, where tropes are taken to be the constituents of everything that there is, trope theory takes events to be tropes, or complexes of tropes (Campbell, this volume, 1990). It also takes tropes to be the items that figure in causal laws. How then are we to understand the claim that each mental event is a physical event? Suppose that mental/physical tropes are not complex, so that we take it to mean that this pain-trope just is this neurophysiological event-trope. Then the distinction between mental and physical

properties seems unsustainable, with the consequence that non-reductive monism is reductive.²² For properties are classes of exactly resembling tropes, and physical tropes that are exactly resembling will thereby be mental tropes that are exactly resembling. Since the mental/physical tropes are not complex, and so not further analyzable, there will be no means by which to distinguish mental properties from physical properties.

Suppose, on the other hand, that mental/physical tropes are complex. Then a different problem arises for non-reductive monism. That view presumes that mental events causally interact with physical events; that mental events are causes. It also requires that causal interactions be governed by causal laws. But according to trope theory, it is tropes that are causes and tropes that figure in causal laws. If, in order for mental events to be causes, mental events must be governed by causal laws, and if for that to be so according to trope theory is for the mental tropes of the complexes that are mental/physical events to figure in laws, then non-reductive monism cannot be sustained by trope theory. For it follows from this that either mental events/tropes are not causes, which contradicts one central commitment of nonreductive monism, or that mental events/tropes figure in causal laws, which contradicts a different but equally central commitment of that view.

Realism neatly solves all of this, since it easily allows for a single instance to be an instance of properties that are non-logically or non-conceptually connected. Mental properties and physical properties that bear non-logical but complex relations to one another can thus be seen to be related to the events that are instances of them in a way that allows those instances to be viewed as *non-complex* compatibly with the *sui generis* distinctness of the properties instanced. For realism allows us to say that a given instance is essentially an instance of one property but nonessentially, or contingently, an instance of another. This gives realism an advantage over trope theory. For, on that view, non-complex tropes, being simple and not further analyzable, are not capable of being analyzed as essentially a trope of

²² We could, as Bacon (1995, 1997) suggests, be Meinongians about tropes, maintaining that there can be non-existent or non-actual tropes as well as actual ones, and then argue that mental properties can be distinguished from physical ones because in other worlds there are mental tropes that are not physical tropes. However, for reasons that we cannot explore here, there are problems with this, both because of its commitment to Meinongianism and because of its commitment to the view that properties are classes of actual and possible things (in this case tropes). For more on the former, see Lycan (this volume) and the papers in that section.

one property and nonessentially a trope of another. Complex tropes can be so analyzed, but then these have constituents that cannot between them meet the commitments of nonreductive monism.

Thus, although it may be true that realism suffers from being less uniform than either nominalism or trope theory in the numbers of kinds of things it admits into its ontology, there may be an explanatory advantage to be gained from this. And if so, then Ockham's Razor will not favour trope theory over realism.²³

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