THE PROPERTIES OF SINGULAR CAUSATION[1]

Abstract: Theories of singular causation have a genuine problem with properties. In virtue of what property do events (or facts) cause other events? One possible answer to this question, Davidson's, is that causal relations hold between particulars and properties play no role in the way a particular causes another. According to another, recently fashionable answer, in contrast, events cause other events in virtue of having a trope (as opposed to a property-type). Both views face serious objections. My aim in this paper is to combine these two very different solutions to the problem of the properties of singular causation and to argue that this combined view can avoid objections against both of them.

Introduction

Properties play a clear role in general causal claims. If Fs cause Gs, then there is a property, in virtue of which Fs cause Gs: a property that all Fs have in common and that can account for why Fs cause Gs. The role properties play in singular causal claims is much less clear. One possible strategy is to deny the relevance of properties in the case of singular causation and argue that properties are only important in general causal claims. This is Davidson's strategy and, as we shall see, it faces some serious objections.

But if one allows for properties to play a role in singular causation, then we also encounter some problems. The problem I will focus on is about *what properties* play a role in singular causation. A token event, c, has lots of properties. So the question is this: which of these many properties is the one in virtue of which it causes another token event, e? One of these properties is privileged in the sense that c causes e in virtue of having this property, but which one is it? One way of answering this question would be to appeal to general causal claims. If Cs cause Es in

virtue of property-type P, then clearly, a token of C, c, must cause a token of E, e, in virtue of having P. But those who would like to maintain the independence of singular causal claims from general causal claims will find this way of resolving the problem of the properties of singular causation problematic. Even worse, an event token can belong to many event types. Hence, it is not clear which general causal claims we should evoke for resolving the problem of the properties of singular causation.

My plan in this paper is the following. I consider two solutions to the problem of the properties of singular causation. The first one is that properties do not play any role in singular causation. The second one is that a token event causes another token event in virtue of having a trope, and not a property-type. Both proposals face serious objections. My aim is to combine these two very different solutions to the problem of the properties of singular causation and to argue that this combined view can avoid objections against both of them.

Before we begin, I want to make it clear what I mean by singular causal claims. I do not want to take sides in the debate about what the relata of singular causation are: whether they are events (Davidson 1967), facts (Mellor 1995), states of affairs (Armstrong 1997) or maybe tropes (Ehring 1997). I will talk about events as the relata of singular causation in what follows, but my argument can be rephrased using the other alternatives. What is important, however, is that I do assume that general causal claims are about types (I will say event-types) and singular causal claims are about specific tokens (I will say specific events). (On how to draw the line between general and singular causal claims, see Good (1961, 1962), Sober (1985), Carroll (1991), Eells (1991), Hitchcock (1995, 2001).) The problem I will focus on is not about the relata of singular causation, but about the *properties* of singular causation. The question then is this: in virtue of what property do specific events (or facts) cause other events?

1. Singular Causation without Properties

The simplest and perhaps most elegant way of engaging with this question is to deny that it is a valid question. Davidson famously argued that causal relations hold between particulars and properties play no role in the way a particular causes another. Events do the causal work; properties are causally irrelevant (Davidson 1967, 1970, 1993, see also Sosa 1993, McLaughlin 1993 and Kim 1993). As he memorably said:

> If causal relations and causal powers inhere in particular events and objects, then the way those events and objects are described, and the properties we happen to employ to pick them out or characterize them, cannot affect what they cause. Naming the American invasion of Panama 'Operation Just Cause' does not alter the consequences of the event. (Davidson 1993, 8)

There are at least two popular ways of misunderstanding Davidson's position. First, it is important to emphasize that his claim about the irrelevance of properties in causation applies not only to mental, but also to physical properties. That physical properties do not enjoy special status over mental or any higher order ones is not entirely clear in Davidson's original formulation of anomalous monism (Davidson 1970), but it is very explicit in Davidson (1993). After stressing that it is irrelevant whether we describe a mental event in mental vocabulary, he writes:

> But it is also irrelevant to the causal efficacy of physical events that they can be described in the physical vocabulary. It is *events* that have the power to change things, not our various ways of describing them. (Davidson 1993, 12, original emphasis.)

The upshot is clear: properties do no causal work—neither mental, nor physical ones. Second, it is also important to point out that Davidson's claim is a genuine claim about properties and not just about predicates we employ to pick out properties. It has serious consequences with regard to the *ontology* of causation and not just with regard to the semantics of causal statements.[2] Thus, I will assume that Davidson denies the causal efficacy of properties (and not merely of predicates, which would not be a very controversial claim).

This account has the great advantage of avoiding the entire problem of the properties of singular causation. But it is far from being uncontroversial. The most serious worry about this Davidsonian denial of the causal importance of properties is the following. Ella sings the words "Shatter, shatter, shatter" at 80 decibels and the glass shatters. What caused the glass's shattering? Davidson needs to say that it's the event of Ella's singing. As he does not allow properties to play any role in causation, his account cannot differentiate between the intuitively correct claim that it's Ella's singing at 80 decibels that caused the glass's shattering and the intuitively incorrect claim that it's Ella's singing the words "Shatter, shatter, shatter" that did so. It was not the meaning of the lyrics, but, supposedly, the volume that was causally relevant. The tune caused the shattering of the glass in virtue of having a volume-property (and not

in virtue of having a semantic property). Thus, some properties of an event can be causally irrelevant, while others are causally relevant. And Davidson's account cannot allow for this.[3]

Thus, Davidson's strategy of denying that an event causes another event in virtue of having a property seems problematic: it is not possible to simply avoid the problem of the properties of singular causation.

2. Singular Causation with Properties

If Davidson is wrong, then properties must play a role in causation: one event (or fact) causes another in virtue of having a certain property. The question is about the nature of the properties in virtue of which an event causes another. Suppose that I took a sleeping pill last night and I fell asleep. So the event of my taking the sleeping pill caused the event of my falling asleep. But in virtue of what property did it do so? In virtue of the pill's being dormitive or in virtue of the physical (maybe chemical) properties of the pill? Maybe both?

One way of answering this question would be to appeal to general causal claims. If taking dormitive substances causes sleep (in virtue of them being dormitive), then clearly, my taking the sleeping pill caused my falling asleep in virtue of the pill's being dormitive. There are two problems with this suggestion. First, those who would like to maintain the independence of singular causal claims from general causal claims will find this way of resolving the problem of the properties of singular causation problematic, as the solution to the problem of the properties of singular causation would be derived from general causal claims. Second, and more importantly, an event token can belong to many event types. Hence, it is not clear which general causal claims we should invoke for resolving the problem of the properties of singular causation. My taking the sleeping pill belongs not only to the event type of taking dormitive substances but also to the event type of taking a pill with such and such physical properties. It also belongs to the event type of taking white pills. Appeal to general causal claims may disqualify the last event type (and the property-type of being white), but it cannot decide between the first two.

This problem, using the framework of physicalism, often appears in the guise of a dilemma about whether a token event causes another token event in virtue of its physical or its 'non-physical', that is, mental, biological, dispositional, dormitive, properties. I will use this framework in this paper with two caveats. First, I lump together mental, biological, disposi-

tional properties under the general category of 'non-physical' properties. If we substitute 'mental' for 'non-physical', we get the problem of the properties of mental causation. If we substitute 'dispositional' for 'non-physical', we get the problem of the causal efficacy of dispositional properties, and so on. I formulate the problem (and the solution) in terms of non-physical properties in order to give a general account of the properties of singular causation (and not just some versions thereof). Second, the way I present my argument about the properties of singular causation in this paper presupposes the general framework of physicalism, partly because I believe that physicalism is correct. But my general solution does not presuppose physicalism and a similar argument could be given for those who do not like physicalism but who are still concerned about the problem of the properties of singular causation. I will not attempt to do this in the present paper.

We can summarize this problem of the properties of singular causation as it is often raised in a physicalist framework, in the form of inconsistent triads. The following three claims seem to be inconsistent:

(1) Non-physical (mental, biological, dispositional, dormitive) properties are not the same as physical properties.

(2) Every physical event (or fact) has in its causal history only physical events (or facts) and physical properties.

(3) Non-physical properties are (sometimes) causally relevant to physical events (or facts).

Each of these claims seems to be intuitively plausible. Giving up (3) would mean endorsing the epiphenomenalism of anything non-physical. Giving up (2) would mean denying the closure of the physical domain.

Finally, (1) seems to follow directly from the multiple realizability of non-physical properties. If, to use mental properties as the paradigm example, the mental property of being in pain would be identical to a physical property, this would mean that the two properties mutually necessitate each other. But if we manage to come up with a physical property that is specific enough to necessitate the mental property of being in pain, it would be too specific to be necessitated by this property.

If we do not want to give up any of these three claims, some explanation is needed for how they can all be true in spite of appearing to be inconsistent.

3. The Trope Solution

A promising and fashionable way of arguing that (1), (2) and (3) are in fact consistent is to argue that the term 'property' is ambiguous. It can mean universals: properties that can be present in two (or more) distinct individuals at the same time. But it can also mean tropes: abstract particulars that are logically incapable of being present in two (or more) distinct individuals at the same time.

Suppose that the color of my neighbor's black car and my black car are indistinguishable. They still have different tropes. The blackness trope of my car is different from the blackness trope of my neighbor's car. These two tropes are similar but numerically distinct. Thus, the blackness of my car and the blackness of my neighbor's car are different properties (Williams 1953, Campbell 1990).

If, in contrast, we interpret properties as universals, or, as I will refer to them, property-types, then the two cars instantiate the same property-type: blackness. Thus, depending on which notion of property we talk about, we have to give different answers to the question about whether the color-property of the two cars is the same or different. If by 'property' we mean 'trope', then my car has a different (but similar) color-property, that is, color-trope, from my neighbor's. If, however, by 'property' we mean 'property-type', then my car has the very same property, that is, property-type, as my neighbor's.

This ambiguity is important as the term 'property' is to be read as 'property-type', in (1), whereas it is to be read as 'trope' in (2) and (3). Thus, the initial inconsistent triad can be reformulated as a set of four claims that are not at all inconsistent (Robb 1997, 2001 (in the domain of mental causation), Ehring 1996, 1997, 1999, Heil and Robb 2003, Macdonald and Macdonald 1986, 1995):

(1a) Non-physical property-types are not physical property-types.

(1b) Non-physical tropes are physical tropes.

(2) Every physical event (or fact) has in its causal history only physical events (or facts) and physical tropes.

(3) Non-physical tropes are (sometimes) causally relevant to physical events (or facts).

Because of (1a), we can accommodate the multiple realizability argument, (2) still delivers the closure of the physical and (3) saves us from epiphenomenalism. The problem of the properties of singular causation is solved.

Before I turn to the objections that have been raised against this elegant solution, a possible misunderstanding needs to be dispelled. It has been argued that the relata of causation are tropes (Ehring 1997, 1999). It is important not to confuse this claim with the one we are about to evaluate, according to which the relata of causation, whatever they may be, cause each other in virtue of having tropes. Thus, the proposal I'm about to examine is not committed to take sides in the grand debate about the relata of singular causation.

4. Problems with the Trope Solution

The most influential argument against the trope solution is the following (Noordhof 1998, Gibb 2004). If (1a) is true, then non-physical property-types are different from physical property types. The reason why (1a) is held to be true, as we have seen, is the multiple realizability argument: a non-physical property-type can be realized by a number of different physical property-types. But if this is true, then there are pairs of non-physical tropes that are exactly resembling, yet, they are identical to physical tropes that are not exactly resembling.

Suppose that N and N* form such a pair of non-physical tropes. Non-physical trope N resembles N* exactly. They are not the same tropes but they resemble like the blackness trope of my car resembles the blackness trope of my neighbor's car: exactly. (1b) tells us that non-physical tropes are physical tropes. Thus, let P be the physical trope that is identical to N and let P* be the physical trope that is identical to N*.

Thus, it follows from the trope solution that the following four claims must all be true:

(a) N* is identical to P*.

(b) N is identical to P.

(c) N resembles N* exactly.

(d) P does not resemble P* exactly.

But, so the argument goes, these four claims cannot be all true. Thus, the trope solution leads to a contradiction. Why can't (a) – (d) be all true?

As identity is a special case of exact resemblance, because of (a), P resembles N exactly. Because of (c), N resembles N* exactly. Because of (b), N* resembles P* exactly. From the transitivity of the exact resemblance relation, it follows that P resembles P* exactly. But (d) states the exact opposite of this claim. We have reached a contradiction.

It needs to be noted that this argument presupposes two auxiliary claims, namely that the exact resemblance relation is transitive and that the identity relation is a special case of the exact resemblance relation. But as these two auxiliary claims seem reasonable, it seems that we are forced to conclude that the trope solution leads to a contradiction.

One could question an assumption that is taken for granted in this argument, namely, that "there is a fact of the matter about whether the tropes [N and N*] exactly resemble each other" (Gibb 2004, 472): "resemblance is something *objectively* in the world" (Gibb 2004, 473, original emphasis). Gibb gives two arguments in favor of these claims.

First, this is an assumption many trope theorists (Campbell 1991, 31, see also Armstrong 1989, 122) in fact make. Second, and more interestingly, she gives the following argument. As we have seen, the trope solution talks about the identity of tropes. In fact, one of the main claims of the trope solution, (1b), is an identity claim: non-physical tropes are identical to physical tropes. But what are the criteria of identity for tropes? Co-instantiation seems necessary, but it is certainly not sufficient, as the blackness trope of my car and the Honda-ness trope of my car are co-instantiated (they are two tropes of the same individual), but they are not identical tropes.

What is also needed for the identity of two tropes is that they should be, well, exactly resembling. Thus, we couldn't talk about the identity of tropes without talking about exact resemblance. And if the exact resemblance relation were not an objective relation, the identity of tropes would not be an objective relation either. But, as claim (1b) of the trope solution clearly indicates, the identity of tropes is an objective fact of the matter. Thus, exact resemblance must also be an objective fact of the matter.

Thus, the trope solution to the problem of the properties of singular causation does not work. It leads to a contradiction and the way to fix it also leads to a contradiction. I agree with the skeptics that this version of the trope solution does not work. But this does not mean that we need to discard the trope solution itself. I will suggest a new version of the trope solution that is not vulnerable to the objection raised above.

5. Salvaging the Trope Solution

My aim is to salvage the trope solution. In order to see where we should fix the original version, it is worth summarizing what made the original version vulnerable to the objection I raised in the last section.

It has been suggested that Gibb's argument only works if we accept a further premise: that property-types are defined by exact resemblance (Whittle 2007, 71). If we deny this, so the argument goes, we no longer get a contradiction. N and N* can both be non-physical tropes but fail to resemble exactly. And P and P*, which are identical to them do not resemble each other exactly either. No contradiction.

The problem with this counterargument is that it only tells us how not to think about property-types and it is very vague about how we should think about property-types. According to Gibb, property-types are defined by exactly resembling tropes. Whittle admits that many property-types are in fact defined by exact resemblance, but she maintains that not all of them are. There are also "less than perfectly sparse properties [less than perfectly sparse property-types in my terminology] which are sets of less than perfectly resembling tropes" (Whittle 2007, 71).

One problem is that this version of thinking about property-types is vulnerable to one of the oldest objections to trope theory (Wolterstorff 1973, 176–181). It has been argued that defining property-types as sets of tropes is a problematic move for the following reason. Sets have their members necessarily. Thus, if the property-type of red is defined as a "set of less than perfectly resembling tropes," then this set has its members necessarily. But intuitively, there could be more (or less) red things than there actually are. Thus, defining property-types in terms of sets of tropes amounts to identifying a non-rigid property-type with a rigid set. (It is not clear to me that this would be a knock-down objection to those versions of trope theory that identity property-types with sets, as these sets may be defined across possible worlds.)

A more serious worry is about the very idea of defining "less than sparse property-types" in terms of "less than exact" or loose resemblance of tropes. This has been thoroughly criticized by David Manley, who argues that such attempts would face familiar worries that allegedly made resemblance nominalism lose its appeal: the companionship problem and the imperfect community problem (Manley 2002). I do not mean to suggest that there is no satisfactory way of addressing these problems (see, for example Rodriguez-Pereyra 1999), but Whittle does not tell us how that should be done.

In short, Whittle makes a negative and a positive point. The negative point is that the objection to the trope solution collapses if we pull out the premise that property-types are defined in terms of exactly resembling tropes. The positive point is that some property-types are defined as "sets of less than perfectly resembling tropes". While I agree with the negative point, I want to resist the positive one.[4]

I would like to give a different account of property-types. Think of tropes as points in a property-space. Some pairs of tropes resemble each other more than others: they are closer together in this property-space. Property-types are our arbitrary ways of delineating regions of this property-space. The property-space does not have joints: it consists of a number of tropes, some close together, some further away from each other. Property-types are our ways of grouping these points in the property-space and the way we group tropes together depends on our interests.

I can group together tropes that I see as resembling each other. I may group together the blackness trope of my Honda and the blackness trope of my neighbor's Honda as well as all the blackness tropes of all black Honda vehicles. This would give rise to a way of describing these tropes in terms of a common property-type. I may group even more blackness tropes together with these, say, the blackness tropes of all my shoes and of my piano. This would give us a different property-type: a different way of describing tropes.

Similarly, the trope in virtue of which taking a pill causes me to fall asleep can be grouped together with a variety of other tropes. It can be grouped together with other tropes of pills made of the exact same chemical substance. Or, it can be grouped together with other tropes of some sleeping pills with different chemical composition. If I do the former, then I describe this trope as physical. If I do the latter, I describe it as non-physical (dispositional). Tropes can be described as non-physical tropes or as physical tropes.

The main point is that property-types are just our ways of describing tropes. Thus, the four claims of the trope solution could be modified in the following way:

(1a) Non-physical property-types are not physical property-types (that is, the non-physical description of tropes is not the same as the physical description thereof).

(1b) Some tropes can be described both as non-physical tropes and as physical tropes.

(2) Every physical event (or fact) has in its causal history only physical events (or facts) and tropes that can be described as physical tropes.

(3) Tropes that can be described as non-physical tropes are (sometimes) causally relevant to physical events (or facts).

This version of the trope solution is not vulnerable to the objection raised in the last section. The problem there was that the following four claims all follow from the trope solution, but they are inconsistent:

(a) N* is identical to P*.

(b) N is identical to P.

(c) N resembles N* exactly.

(d) P does not resemble P* exactly.

These can be rephrased in the following manner. X is a trope that can be described both as non-physical and as physical. X* is also a trope that can be described both as non-physical and as physical. X* and X have the same non-physical description, but they do not have the same physical description. No contradiction here.

Finally, let us return to Gibb's claim that "there is a fact of the matter about whether the tropes [N and N*] exactly resemble each other" (Gibb 2004, 472). Do I need to deny this claim? No. According to my account, the resemblance, exact or not, between tropes is perfectly objective. What is not objective is the way these resembling tropes are grouped together into property-types. Thus, there is indeed a 'fact of the matter' about whether M and M* exactly resemble each other or if not, how much they resemble. But there is no fact of the matter about whether a trope belongs to a property type. If property types are our ways of grouping tropes together, then there is no such 'fact of the matter'.

6. Back to Davidson

It is easy to spot that my strategy in formulating a new version of the trope solution is rather Davidsonian. It is worth summarizing the differences between my account and his and pointing out that the objections that have been raised against his account fail to apply in the case of mine.

For Davidson, events do the causal work, properties are causally irrelevant. They can play an important role in causal explanations though. I claim that if we interpret 'properties' as 'tropes', then Davidson is wrong. Tropes do indeed do the causal work. But if what we mean by 'properties' is 'property-types', then he is absolutely right: they are indeed causally irrelevant. Property-types do no causal work. They are for causal explanations. Thus, I agree with Davidson about what does not play a role in causation: property-types. But I disagree with him about what does play a role: I claim that tropes do.

As we have seen, the most serious worry about Davidson's theory of causation is that it cannot handle cases like Ella's. Ella sings the words "Shatter, shatter, shatter" at 80 decibels and the glass shatters. What caused the glass's shattering? Davidson needs to say that it's the event of Ella's singing. As he does not allow properties to play any role in causation, his account cannot differentiate between the intuitively correct claim that it's Ella's singing at 80 decibels that caused the glass's shattering and the intuitively incorrect claim that it's Ella's singing the words "Shatter, shatter, shatter" that did so.

If events cause other events in virtue of having certain tropes, then we can handle this objection. Ella's singing caused the shattering of the glass in virtue of its volume trope and not in virtue of its semantic trope. As the semantic trope and the volume trope are different (see also Section VII. (c) below, as well as Schaffer (2001) on the thorny issue of individuating tropes), we can differentiate between the intuitively correct claim that it's Ella's singing at 80 decibels that caused the glass's shattering and the intuitively incorrect claim that it's Ella's singing the words "Shatter, shatter, shatter" that did so. My account is not vulnerable to the objection that made Davidson's account unpopular.

Yet, there is something very Davidsonian about my strategy. The famous Davidson quote I gave above can be rephrased to reflect my account in the following way (with the changes italicized):

> If causal relations and causal powers inhere in particular *tropes*, then the way those *tropes* are described, and the *property types* we happen to employ to pick them out or characterize them, cannot affect what they cause. Naming the American invasion of Panama 'Operation Just Cause' does not alter the consequences of the event. (Davidson 1993, 8)

My account could be thought of as a compromise between Davidson and the trope solution. Ironically, one of the first accounts of causation in

terms of tropes, Keith Campbell's was given explicitly in order to argue against Davidson's theory (Campbell 1981, 480, see also Campbell 1990). Still, I think these two ways of thinking about singular causation, the Davidsonian and the trope solution can be combined fruitfully.

One way of thinking about the account I propose here is that it uses a Davidsonian strategy about property-types to make the trope solution more plausible. If property-types are just ways of describing tropes, then the objections that made previous versions of the trope solution question-begging, do not apply.

Another way of thinking about my account is that it attempts to make Davidson's account of causation more plausible by appealing to tropes. If it is tropes and not events that are causally relevant, then the '*qua* objection', which has been raised against Davidson so powerfully, can be dealt with.

7. *Objections*

I need to address four possible objections to my proposal.

7. (a) First objection

One may worry that my account is too Davidsonian and the trope component may just be a decorative add-on. Why is my account different from a standard Davidsonian story, with the slight change that the Davidsonian relata of causation are replaced by slightly less course relata? Maybe if we don't talk about Davidsonian events, but facts or Kimian events, we can avoid the Davidsonian problem without bringing in tropes.

My response is that both facts and Kimian events are defined with the help of property-types. Thus, if we allow for these as the relata of causation, then we are back with the original inconsistent triad of the problem of the properties of singular causation.[5]

According to my suggestion, we don't need to talk about property-types when addressing the problem of the properties of singular causation. We only need to talk about tropes. Thus, the trope component of my proposal is not a mere decorative add-on.

7. (b) Second objection

There is a certain asymmetry between the way non-physical and physical tropes relate to each other and the way volume and meaning tropes

do. As we have seen in the last section, in the case of Ella's singing, the volume trope was causally efficacious and the meaning trope was not. These are different tropes. In the examples of causal exclusion, on the other hand, there is only one trope, which can be described both as non-physical and as physical. What is the difference between these two cases?

The difference is that non-physical property-types and physical property-types are our ways of describing tropes in one and the same property-space. In contrast, volume tropes and meaning tropes are in two very different property-spaces. Hence, volume property-types are our ways of grouping together tropes that are very different from the ones we group together under semantic property-types.

One may push the question even further: what makes it the case that non-physical property-types and physical property-types describe the same tropes whereas volume property-types and semantic property-types don't. The response follows from (a not particularly demanding version of) physicalism. If all tropes are physical tropes (i.e., they can be described in a physical vocabulary), then mental, biological, dispositional and other non-physical tropes are also physical tropes. The same goes for volume- and meaning-tropes: they are also all physical tropes. If physicalism is correct, then the entire property-space is physical property-space: all the tropes can be described in a physical vocabulary. So those tropes that can be described as mental (the mental tropes) can also be described as physical (as it follows from physicalism that all tropes can be described as physical).

Physicalism does not entail anything like this with regards to the identity claim between volume tropes and semantic tropes. All that follows from physicalism is that the volume trope of Ella's singing is also a physical trope, and the semantic trope of Ella's singing is also a physical trope, but we have no reason to suppose that they are the same trope. Both are physical tropes, but they are very different physical tropes indeed. Although the event of Ella's singing at 80 decibels is the same as the event of Ella's singing the words 'Shatter, shatter, shatter', the volume property (that is, trope) of this event is different from its semantic property (that is, trope).

7. (c) Third objection

One may wonder whether the original *qua*-problem that made Davidson's account of singular causation lose its appeal will resurface in the case of my proposal. The re-emergence of the *qua*-problem has been

noted in the case of some earlier versions of the trope solution and using Davidson, whose account is also susceptible to the same worry, could be thought to be of little help.

Perhaps the best-known objection to Robb's version of the trope solution is the following. Suppose that non-physical tropes are causally relevant and non-physical tropes are physical tropes. But then what is causally relevant about this trope: its being a non-physical trope or its being a physical trope? Is it causally efficacious in virtue of being non-physical or in virtue of being physical? Is it the non-physical aspect of this trope that is doing the causal work or is it the physical one? We seem to be facing the original dilemma: if this trope is causally efficacious in virtue of being non-physical, then the closure of the physical is in danger. If, however, it is causally efficacious in virtue of being physical, then we are flirting with epiphenomenalism. Positing that non-physical tropes are physical tropes does not solve the problem of the properties of singular causation. It only makes the original problem resurface in a new guise (Noordhof 1998, Gibb 2004, Whittle, 66–67).

Robb responds to these charges by saying that the question about what makes the non-physical trope causally efficacious is a question he does not understand (Robb 2001, 93, see also Robb 1997, where he calls questions of this kind 'odd'). He does not understand the question because the question presupposes that properties have aspects, but Robb claims that properties do not have aspects. He gives the following analogy to show the absurdness of talking about property aspects. Suppose we ask in virtue of what is a ball round. The answer is that in virtue of a certain property it has: the property of roundness. And this is the end of the story. Asking the further question: 'In virtue of what does the property roundness make the ball round?' would be absurd. As he says, "the ball's shape is not roundness in virtue of this or that property it has, it is just roundness full stop" (Robb 2001, 93).

One may find this response slightly *ad hoc* (Gibb 2004, Whittle, 66–67). But if we accept my version of the trope solution, then we have a principled reason to stop the impending regress. Asking whether an event caused another event in virtue of a trope *qua* non-physical or *qua* physical makes little sense in the framework I use. As 'non-physical' and 'physical' is just a way of describing a trope, a trope *qua* non-physical is the very same trope as a trope *qua* physical. Thus, there is no difference between

an event causing another event in virtue of a trope *qua* non-physical and an event causing another event in virtue of a trope *qua* physical. Surprisingly enough, the *qua*-problem that was an influential objection both to the original version of the trope solution and to Davidson's account disappears if we combine the two.

7. (d) Fourth objection

It has been argued that property-types, more specifically, determinate property-types are causally efficacious. An old and respectable way of characterizing the relation between property-types is the determinable-determinate relation (Johnston 1921, Funkhouser 2006). To use the classic example, being red is determinate of being colored, but determinable of being scarlet.

Steven Yablo describes Sophie, the pigeon who pecks at a crimson triangle (Yablo 1992, 257). But as Sophie is conditioned to peck at red things, it is a true counterfactual that if the triangle were of another shade of red, Sophie would have pecked all the same. It seems that the property that is doing the causal work is the property of being red (the determinable property) and not of being crimson (the determinate one).

How could the trope solution accommodate this point? Robb seems to suggest that his version could be made consistent with Yablo's example. He maintains that "a given scarlet-trope, for example, is also a red-trope, a colour-trope, […] etc" (Robb 1997, 192). He continues to say that if an event causes another event in virtue of this scarlet-trope, then it is indeed a true claim that c caused e in virtue of being scarlet and it is also true that it caused e in virtue of being colored, in virtue of having some disjunctive property, like being scarlet or hot, and so on (Robb 1997, 193). There is no difference in the truth value of these claims. Where they differ is in their "(practical) implication." Saying that 'c causes e in virtue of being scarlet' seems to imply that having a scarlet-trope is sufficient for causing e, whereas saying that 'c causes e in virtue of being scarlet or hot' implies that having a scarlet-or-hot-trope is sufficient for causing e. Thus, both are true claims, but we are more inclined to accept the former, as its implications are more palatable.

Without discussing Robb's appeal to '(pragmatic) implications', which could be seen as at least as *ad hoc* as his response to the objection I addressed in the last subsection, I would like to point out that the apparent

contradiction between the trope solution, which implies that property-types are not causally efficacious, and Yablo's example, which suggests that a certain kind of property-types (determinable ones) are causally efficacious, is not merely apparent. We have a real contradiction and if we want to maintain the trope solution, we need to (a) find some reason why Yablo's claims could and should be questioned and (b) account for the intuitions Yablo appeals to with his example of Sophie. As to (a), it has been repeatedly argued that Yablo's considerations about the causal efficacy of determinable properties are not as compelling as they seem (Armstrong 1997, Mellor 1995, Gillett and Rives 2005, Crane forthcoming). But, whether or not these arguments against Yablo are valid, we need to be able to explain why intuitions seem to support Yablo's point.

My response is that if we take Davidson's distinction between causation and causal explanation (Davidson 1967) seriously, the problem goes away. Being red may be a property that plays an important role in the *causal explanation* of Sophie's behavior, but it does not play a role in *causing* Sophie's behavior. It follows from my account that the trope of a specific shade of scarlet is the trope in virtue of which the triangle caused Sophie's peck. This is a claim about causation. It is an entire different question how Sophie's behavior can be causally explained. The causal explanation will be sensitive to counterfactual dependencies and the property-type of being red will be likely to play an important role in this causal explanation. But claims about causation and claims about causal explanation are orthogonal to one another.

The same point can be made with regard to the other classic example Yablo gives (Yablo 1992, footnote 32). As before, Ella sings at 80 decibels and the glass shatters. My proposal is that it is a specific volume trope of singing at 80 decibels that is causally efficacious here. This trope can be grouped together with other tropes in many ways and these groupings will give us different property-types. Some of these property-types will be interesting ones when we give a causal explanation to the glass's shattering. Others will not. If we group the 80-decibel trope together with all the decibel tropes higher then 70, we get a property-type of more than 70 decibels. This will be an interesting property-type in the causal explanation of the glass's shattering, as whenever a trope of this kind occurs, the glass will shatter. But we can group the 80-decibel trope together with other tropes. We can group it together with all decibel tropes that are lower than 90. The

property-type this grouping gives rise to will not be a particularly interesting one if we want to use it in the causal explanation of the glass's shattering. Nonetheless, the trope that is involved in the causation (not the causal explanation) of the glass's shattering is the trope of singing at 80 decibels.

8. Conclusion: The Cost of This Solution

One may object that this account of singular causation makes the condition of distinctness, the original claim that non-physical properties are not physical properties, extremely weak. According to my account, this claim should be read in the following way: the non-physical description of tropes is not the same as the physical description thereof. But this is just a claim about how we describe tropes. It seems that this interpretation of the condition of distinctness makes it not just weak, but almost meaningless.

My response is to bite the bullet with delight. Some or even most authors write about the trope solution as a combination of monism about tropes with dualism about property-types (Gibb 2004, Whittle 2007). My version of the trope solution will certainly not deliver dualism about property-types and I'm quite happy about this.

The condition of distinctness does not imply dualism about property-types. Our justification for accepting the condition of distinctness was the multiple realizability argument. But the multiple realizability argument certainly does not imply dualism about property-types. Dualism about property-types presupposes not just that non-physical property-types and physical property-types are distinct but also that they are in some sense 'real', whatever that means.[6] The multiple realizability argument shows us that they are distinct. But this is consistent with a nominalist position about property-types. If we consider property-types as just our way of grouping tropes together, the multiple realizability argument can still be formulated and the condition of distinctness can still be maintained.

This conclusion, of course, would be difficult to accept for those who are realist about property-types or universals. The account I outlined here takes a version of trope nominalism for granted; it assumes that only tropes are 'real' properties. In other words, this account has serious metaphysical assumptions.

Robb formulated his version of the trope solution without any metaphysical commitments, but I argued that as a result he opened up his account to serious objections. I argued that we can fix the trope solution, but we

need to pay a price: the trope solution can only work if we accept trope nominalism. But maybe this is not such a high price to pay if given this assumption, we can solve the problem of the properties of singular causation.

Bence Nanay

Syracuse University

NOTES

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2. Again, this is less clear in his Davidson 1970, where he uses the term 'property' only twice, but Davidson makes clear the ontological implications of his account in response to Kim's criticisms (who, rightly, takes him to talk about properties and not predicates (Kim 1993)) in Davidson (1993) (this is also what he in fact believed: repeated personal communications, Spring 2000, Fall 2001, Fall 2002). But this paper is not a piece of Davidson scholarship. Those who remain unconvinced about whether Davidson was talking about properties or predicates should read 'Davidsonian account of mental causation' instead of 'Davidson's account of mental causation', in what follows.

3. Davidson's response is to bite the bullet and insist that the volume property is relevant to the causal explanation of the shattering of the glass, but not to the causal process itself. I will say more about this strategy and the causation/causal explanation distinction in general in Section VI and Section VII (d).

4. I give a detailed criticism of Whittle's positive proposal in Section IV (b) of "Davidson and Tropes: An Unlikely Compromise," MS.

5. There may be other, non-Davidsonian, ways of specifying the relata of causation without bringing in property-types, but it is unclear to me that switching to these relata would give us any explanatory advantage over the original Davidsonian account.

6. It is a tricky question what should be meant by 'real' here. One possible way of interpreting the concept of 'real property' would be to use Lewis's concept of 'sparse property'. See Lewis (1986) and Schaffer (2004).

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