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Tropes for Causation

**Garcia-Encinas**

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**Tropes for Causation**

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**M. J. Garcia-Encinas**

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**Abstract** Tropes, as distinguished from other possible kinds of entities such as universals, states of affairs, events and bare particulars, are best-suited to play the role of causal relata.

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13**1 Ontologies for Causation: General Overview**

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Consider the episode in the Exodus where God sends the first plague against Egypt because the Pharaoh's heart has hardened and he will not allow the Hebrews to leave. Moses and Aaron, following God's command, spoke to the Pharaoh but he did not listen,

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...and Aaron lifted up the staff which was in his hand and smote the waters of the river, (...) and all the waters that were in the river were turned into blood. And the fish that were in the river died; and the river stank, and the Egyptians could not drink the water of the river; and there was blood throughout all the land of Egypt. (*Exodus 7*)

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Imagine that this is a causal episode. There are different views on what kinds of thing constitute the causal *relata*.

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One view is that they are *substances*: persons, such as the Pharaoh or Aaron or perhaps God, animals, such as the fish in the river, things, such as Aaron's staff, or kinds of matter, such as blood or water. In general, substances are said to be causes in virtue of their natural *powers* or *capacities*.<sup>1</sup> God can punish people because His

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<sup>1</sup>For example, Cartwright (1989) maintains that substances have irreducible capacities to make changes in the world because of their nature.

M. J. Garcia-Encinas (✉)

Departamento de Filosofía I, Universidad de Granada, Granada, España  
e-mail: encinas@ugr.es

nature, at least in part, consists of his capability to judge and punish people on earth. 30  
 Moses has the capacity to communicate with God, the Pharaoh the capacity to 31  
 disobey Him, water the capacity to be converted into blood, fish the capacity to die 32  
 and so on. Capacities or powers are considered to be either a special sort of property 33  
 or explainable in terms of properties.<sup>2</sup> In addition, the capacities of a substance and 34  
 the causal relations into which it is possible for the substance to enter are closely 35  
 related to the idea of causal *processes* or events: one can think of the particular 36  
 exercise of a capacity in a given situation as either an event or a process, which in 37  
 turn is the cause or the effect in that situation. Given that substances are causes in 38  
 virtue of their capacities or properties and that processes can be conceived to be 39  
 events, I will have much to say on properties and events but not on substances, 40  
 powers or processes in themselves. 41

Since Davidson (1967), probably the most popular view is that causal relations 42  
 hold between *events*. Events found a new ontological category; they are taken to be 43  
 proper entities, with their own particular properties and relations. Some events in the 44  
 biblical episode are Aaron's smiting the waters, his turning water into blood, the 45  
 death of the fish in the river and the stinking of the river. 46

A further view is that causes and effects are *states of affairs*. States of affairs are 47  
 particular instantiations of properties by individual entities: substances, events or 48  
 bare particulars. Thus, on this view, singular causes and effects are properties that 49  
*exist in* particular entities. In the example, Aaron's staff being lifted up, the fish 50  
 dying in a certain manner and the water being turned into blood would be states of 51  
 affairs. From a logical point of view, one would symbolise states of affairs as *Pa, Pb,* 52  
*Qb...* while events would be better expressed by logical constants *a, b, c...*<sup>3</sup> 53

Finally, there is the view that the ontology of causation should be understood in 54  
 terms of *properties*: bundles or sets of properties (of Aaron's staff, of his action, of 55  
 the river ... or maybe of anything at all) cause other bundles of properties (of the 56  
 fish, of their death, of the water...). Properties can be understood either as universals 57  
 or as individuals. Understood as individual properties, our vanities differ as our 58  
 noses do. Familiar examples are a specific shade of red, such as the red of blood, the 59  
 exact length of Aaron's staff, a given amount of fish, etc. Useful as they are, 60  
 examples should not, in general, be taken too literally. Most metaphysicians, 61  
 including those that believe in individual properties, are naturalists. So they accept 62  
 that causal properties are not necessarily those we appear to talk about. However, 63  
 whatever they are, they are individual and not universal properties. I want to defend 64  
 here the view that *individual properties* suit causation nicely. 65

So I will argue that causes and effects are (bundles of) individual properties. In 66  
 the *first part* of the paper, I will answer a series of questions on the nature of 67  
 individual properties, with the intention of showing that individual properties must 68  
 be distinguished from other types of entities, such as universals, states of affairs, 69  
 events and bare particulars. In the *second part*, I argue that individual properties are 70  
 best-suited to play the role of causes and effects. I will argue the case in two steps. 71

<sup>2</sup> Of the first sort there is, for instance, Molnar's (2003) account, in which he argues that powers are individual intrinsic properties of their bearers. (Molnar's view will be discussed below.) Reductive/explanatory analyses are Lewis's (1997) or, in a non-Humean vein, Armstrong's (1968).

<sup>3</sup> For the distinction of the event/state of affairs that I am roughly introducing here, see J. Bennett (1988).



First, I will defend the thesis that causes and effects cannot causally differ and be the same causes and effects. As a corollary, causes and effects can be neither substances nor events. Second, I will argue that one difficulty raised by Armstrong et al. if applied to causal duplicates is better solved in terms of individual properties rather than in terms of universals or states of affairs.

## 2 Individual Properties are not Universal

That there are *individual* properties means that there are properties that are not universal. So far so good, but the problem is that, although the distinction between universal/individual seems to be one of our deepest philosophical intuitions, it is not easy to spell it out neatly.

It is sometimes said that universals cannot, whilst individuals can, be immediate objects of sensing or perception. This was, in part, Russell's position:

The essence of the sort of thing that Plato meant is that it is opposed to the particular things that are given in sensation. We speak of whatever is given in sensation, as a particular (Russell 1912: 52).<sup>4</sup>

The view that individual properties are the immediate objects of perception has been recently adopted by Jonathan (Shaffer 2001). He points out that, for instance, when one eyes a rose, one perceives not the universal redness nor some unstructured whole but rather the particular redness in question, the particular shape, odour and so on. Now, if this is an attempt to point out distinguishing aspects of individuality, it faces the problem that there seem to be too many individual properties that are not immediate objects of perception. Do we really *perceive* the individual charge of an electron or the speed of the movement of the Earth around the Sun? But even if the reply is that we do, because somehow people can detect or measure these properties, there is no reason why the Universalist cannot avail himself of the same answer: that what we detect and measure are universal properties. Moreover, unless you regard as individual properties the *particular impressions* in your perception, the Universalist can always say that the real content of these particular impressions of yours are universals; so the redness you see or the charge you measure (even if not your particular impressions of them) could still be universal.

Other, more familiar, accounts attempt to characterise the individual/universal distinction by appealing to true linguistic predication. Many philosophers have defined universals as those terms or entities that can be predicated of many, whilst individuals are only subjects of predication. This was a much discussed thesis during the early middle ages, and it is inspired in the Aristotelian definition of the universal in *De Interpretatione* (7, 17a 38–39) as ‘that which is by its nature predicated of a

<sup>4</sup> To speak of ‘particular’ properties instead of ‘individual’ properties could be misleading. A particular is something that *parts* a whole. For instance, each particular man parts the whole of the ‘dividual’ manhood thus being man. But one could also admit that there are individuals without accepting this account for their individuality. Given that ‘individual’ makes reference to what is not divisible in the sense that a dividual is, it seems more appropriate to speak of individual properties. Russell is, of course, trying to define the essence of individuals and universals. The former he takes to be concrete things, the latter transcendental properties and relations.

number of things'. But, of course, the main difficulty with this view is that  
 universals are supposed to be ontological entities whose existence is independent of  
 our ability of speech and predication. *If* there are universals, then predication could  
 be explained, universals being the ontological cause of true predication. Moreover,  
 language itself should be exposed to ontological analysis.

I believe that a clearer statement of the difference between universals and  
 individuals is the affirmation that universals, but *not* individuals, are one in/over  
 many. Universals can wholly exist in many at the same time. Individuals cannot.  
 Boethius's following definition is a classic:

Multorum enim est quod commune est, praesertim cum una atque eadem res in  
 multis uno tempore tota sit (Boethius 1844–1845, *Second Commentary ...* vol.  
 64, Liber I, 83 B). What is common is of many, especially when one and the  
 same thing is as a whole in many things at one time.

So to maintain that there are *individual* properties is to maintain that there are  
 properties that, like any other individual entity, cannot be at different things or places  
 at the same time.<sup>5</sup> I will work under this classical claim.

### 3 Individual Properties are not States of Affairs 124

The question whether individual properties are states of affairs, i.e. particular  
 property instances in individual entities (substances, events or bare particulars), is  
 directly related to the important issue of the conditions of individuality of individual  
 properties. The account of the numerical identity of individual properties in terms of  
 the entities that instantiate them is by now familiar. On this view, individual  
 properties are understood as a special kind of entity that has a double face: a  
 universal aspect, its universal nature, and an individual aspect, which is parasitic  
 upon its bearer. That is, on this view, individual properties become particular states  
 of affairs. For example, this individual white is the white of *this* paper; this impetus  
 is the impetus *that* Aaron provides to the movement of his staff and so on. There is a  
 good statement of this approach again in Boethius:

Socrates enim animal est, ipsum animal fit individuum, quoniam Socrates est  
 individuus ac singularis. Item homo de pluribus quidem hominibus praedicatur,  
 sed si illam humanitatem quae in Socrate est individuo consideremus, fit  
 individua, quoniam Socrates ipse individuus est atque singularis. Item  
 differentia ut rationale de pluribus dici potest, sed in Socrate individua est.  
 (Boethius 1844–1845, *Second Commentary ...* vol. 64, Liber II, 93 D)

Given that Socrates is individual and singular, animal becomes individual as  
 Socrates is animal. Equally, man is predicated of many men, but if we consider

<sup>5</sup> A more complex way of saying what I really mean here, but that takes into account Platonic universals  
 as well, would be something like this: universal properties *are to* many. However, this way of speaking  
 would obscure the discussion. A further possibility is to say that individual properties, unlike universals,  
 are not capable of multiple instantiation; but now the problem is that individual properties do not properly  
 “instantiate”. Moreover, this would imply a relation between universals and individuals accounting for  
 their distinction, which seems unnecessary and maybe a *petitio principii*.

the manhood that is in the individual Socrates, that manhood becomes individual 144  
inasmuch as Socrates is individual himself, and singular. Equally, a difference 145  
such as rationality can be predicated of many, but is individual in Socrates. 146

The individual rationality, the individual animalhood, the individual manhood... all 147  
the individual properties in Socrates are individual because Socrates is individual: 148  
they are *Socrates'* properties. 149

(Note that this view fits in well with the existence of universals: a property 150  
"becomes" individual when it is exemplified by a substance. In addition, and at the 151  
same time, it is not necessary that there are universals apart from their particular 152  
instantiations: one could be Aristotelian and believe that there are no properties other 153  
than those that exist particularly instantiated.) 154

Moreland (1985), Mertz (1996), George Molnar (2003), or Ann Whittle (2003) 155  
are contemporary philosophers who explicitly endorse the view that individual 156  
properties are property instances whose individuality is given by the entities in 157  
which they exist.<sup>6</sup> I will discuss the view that the individuating entities are bare 158  
particulars in "Section 5". Here, I will consider the main reasons for thinking that 159  
neither substances nor events are individuating entities of properties. 160

A *first* reason is that there does not seem to be any non-question-begging 161  
argument against the possibility that the same substance (or event) has two 162  
indiscernible individual properties at the same time—at different places. For 163  
instance, if both eyes of the body of Moses are of two indiscernible individual 164  
greens, it is true to say that the same body and so the same entity, Moses, have two 165  
indiscernible individual greens. Hence, it cannot be Moses that provides the 166  
individuality for both properties. 167

An immediate reply will be that the relevant entity here is not the body, but the 168  
two eyes, each of which has its own individual green; hence, parts, not wholes, are 169  
the relevant entities for the individuation of individual properties. However, this just 170  
points to a *second* reason against the idea that individual properties are individuated 171  
by their bearers: that we would be postponing the original problem only to make the 172  
solution more difficult. Parts do not have clear-cut conditions of identity. To see this, 173  
think of the progressive transformation of the river of water into a river of blood in 174  
the biblical episode. The possibility should be allowed that at least one of the 175  
properties of the river, say *P*, remains through the transformation of a first stage of 176  
the river *R* into a later stage *R'*. Yet if the identity of *P* was dependent upon the 177  
identity of the river, it could be the same property *P* if and only if *R* and *R'* were 178  
stages of the same river. But why should we impose this condition upon the identity 179  
of *P*? Still worse, if we accept that parts and not wholes are the entities that count, 180  
the property would be necessarily other when it is in the later stage, contrary to our 181  
original assumption. In the end, we feel more confident about the identity of the 182  
property than about the identity of the river or its stages, which rather undermines 183  
the idea that individual properties are individuated by their bearers.<sup>7</sup> 184

<sup>6</sup> For instance, Whittle (2003: 376) writes that 'tropes as *sui generis* property instances, such as 'the redness of *this* poppy' or 'the love of Bob for Katy' (...) are intrinsic to the entities which have them' (original italics).

<sup>7</sup> In a sense, the point is that identity conditions for substances or events are harder to determine/specify than identity conditions for properties. After all, the first *does* need properties.

A *third* reason against the idea that individual properties are ontologically individuated by the entities in which they exist is that we would have too many necessary facts. That this individual property belongs to this substance (or event) would be a necessary fact; that that individual property belongs to that substance would be a necessary fact... and the same would be true of *any* individual property. Surely, even if this consequence of the view was harmless,<sup>8</sup> we would be better off without having so many necessary facts.

My *fourth* reason is that I find no reason against the belief that individual properties could belong to distinct entities at different times. If so, the identity conditions for individual properties do not rest upon the entities in which they reside. (Note that the view that substances or events do not provide the identity conditions for their properties is fully compatible with the view that individual properties need substances or other entities to *subsist*.)<sup>9</sup> Douglas Ehring (1997) has claimed that it is possible that individual properties can be *actually* transferred. He would say that, for instance, when Aaron smote the waters, an individual quantity of energy/momentum of Aaron's staff was transferred to the water in the river. Individual properties can travel, and the entities in which they reside could be mere temporary quarters. I do not want to defend Ehring's view here.<sup>10</sup> However, I agree that there is nothing in the nature of a given individual property that makes it necessary that it belongs to any particular entity. So, it is at least true that individual properties could have belonged to other entities. Thus, their individuality is not provided by the actual entities, if any, in which they live.

Molnar (2003: 44-46) has offered some arguments against the view that individual properties could belong to other substances.<sup>11</sup> One is that, if the numerical identity of particular properties is not provided by their bearers, then the numerical identity of individual properties must be a primitive, which is, for instance, Keith Campbell's (1990) view. Molnar holds that the idea of a primitive numerical identity for individual properties is problematic. However, I am unable to see a problem here, concerning either the identity of individual properties or of any other kind of entity. If, for instance, we agree with Molnar that individual properties derive their

<sup>8</sup> 'Harmless' because the fact that they belong to their bearers necessarily still leaves open the possibility that they are not essential properties of them.

<sup>9</sup> The idea that individual properties are ontologically distinct because distinct substances individuate them can be distinguished from the idea that individual properties are dependent existents: the second can hold even if the first does not. Consider the individual brown that happens to belong to Aaron's staff. Does it need some kind of ontological support, such as a substance (a staff or a tree), to subsist? One can answer this question in the affirmative and at the same time deny that the staff or the tree provide the conditions of individuation for the property. John Marenbon (1997) has argued that this was Abelard's view: 'Accidents do not individuate substances, nor are forms individuated by the substances to which they are attached; indeed, any given form might have been attached to a different particular substance from that to which it is in fact attached. (...) [T]he particular whiteness which makes this body white might have in fact made a different body white, *although once in this body it cannot be in another*' (p. 120; my italics). Moreover, even if we accept, against Abelard's last condition, that individual properties can be *actually* transferred, they could still need substances (or events) to subsist: properties would be transferred from substance to substance without intermediaries other than substances.

<sup>10</sup> I think that his transference theory of causation is mistaken. See my...

<sup>11</sup> Molnar (2003: 43) unfairly compares the view that properties could exist without bearers with Platonism. This is clearly unwarranted because it implies that individual properties without bearers would exist in something like a Platonic realm, which is not the case: whether individual properties are beings in our own realm does not depend on whether or not they have bearers.

numerical identity from the substances in which they exist, we will have to admit that the identity of the substances themselves is an indefinable primitive. Whatever individual entity we decide that gives individual properties, their individuality will have to have its own primitive conditions of individuality. So the need for primitive individuation cannot be an argument for the idea that the identity of individual properties should be parasitic on anything outside themselves.

Molnar’s second argument is, surprisingly, that by admitting non-transferable individual properties we can dispense with states of affairs, where a state of affairs is understood as a universal instantiated by a particular entity. Yet dispense with states of affairs is clearly what we do not do. If individual properties *necessarily* belong to their particular bearers, what we get is a non-empty ontological category of particular states of affairs, where a state of affairs is understood as a property belonging to a particular entity.<sup>12</sup>

I conclude that individual properties are not individuated, in any ontological sense, by the entities, if any, in which they exist, so individual properties are not states of affairs.

**4 Individual Properties are not Events** 231

The tradition that relates individual properties with property instances is also related to modern terminologies of modes (Descartes, Spinoza...), moments (Husserl) and perhaps others. The modes of presentation of things, the ways in which objects are given or presented, when they are *reified* and considered objects of change, are very close to the ontological category of event. This is why some philosophers, like Mulligan et al., prefer to include events among the kind of abstract individuals. They mention:

A depression over the Atlantic, an area of high pressure over Russia, patches of pedestrian bustle, the peace of Vienna, a skidding, an abrupt braking, a traffic accident, the carelessness of a pedestrian, the gesticulations of the lorry driver... (Mulligan et al. 1984, 290).

For them *any* Aristotelian accident that falls into any of the nine categories would be an individual property (or relation). Following the familiar terminology, they call them tropes. So accidents of having or doing, such as those of Aaron’s having a staff in his hand or his action of smiting the water of the river, and events, such as the death of the fish, would be tropes. I think this identification is a mistake. The death of the fish is neither a property nor a relation. Neither it is any sort of individual counterpart of a, otherwise, universal. The death of the fish, the peace of Vienna, a traffic accident, a skidding... all of them are singular events.

Events and actions are closer to the category of primary substance than to the category of property (either universal or individual): like substances, we quantify over them and predicate of them; they have properties and can be related to other

<sup>12</sup> States of affairs are irreducible complex structures that consist minimally of the following: a particular entity (a substance, an event or a bare particular), a property and a special relation between these terms. There is no *ad hoc* reason why the property in question should be universal.

events and, more importantly, they are objects of *natural* or real change in the sense 254  
 that they can or could have been intrinsically different. This is clearly the case in 255  
 Davidson's (1969) account of events. Aaron's smiting the water and Aaron's turning 256  
 water into blood and Aaron's turning water into a liquid thicker than water and, 257  
 perhaps, God's turning water into blood are different descriptions of the same action 258  
 or event. Events can be differently described, not allowing for substitution *salva* 259  
*veritate*, because the property chosen for the description needs not be essential 260  
 to them: events could have had different properties at different times and in different 261  
 possible situations. This seems to be a widely accepted characteristic of events. Even 262  
 a Kim (1973) event, which is a fine-grained event defined as the instantiation of a 263  
 property by an object at a time, can still be the same event if the property had been 264  
 other. Thus, even if Aaron's smiting the water and Aaron's smiting the water 265  
 viciously are different events, Kim is clear that their actual properties are not 266  
 essential to them. Events, like substances, could have been intrinsically different, at 267  
 least in some respects. The death of the fish could have been more painful, the 268  
 smiting of the water more vicious. 269

However, individual properties could not have been different: individual 270  
 properties are *properties* and properties do not have contingent intrinsic properties. 271  
 A coin or Aaron's staff could have had a different shape or a different length. The 272  
 coin could have been hexagonal, the staff shorter or longer. Yet consider the shape or 273  
 the length themselves; what property could they have that changes or that could 274  
 change while the shape or the length still remains the same? As Lewis (1983: 11 and 275  
 26ff) claims, it would seem that none. 276

It is true that properties could have different properties. Suppose that Aaron's staff 277  
 was 1 m long. Hence, the length of 1 m had the property of belonging to Aaron's 278  
 staff. However, Aaron's staff could have been shorter. Hence, the length of 1 m 279  
 belonged contingently to Aaron's staff. However, this contingent property of the 280  
 length, its belonging to Aaron's staff, is extrinsic to the length. The same length 281  
 could also have been at a different place or at a different time or not have been. 282  
 However, these possible "changes" in the property do not affect its nature. Try any 283  
 natural change in the length of one 1 m: try to make it longer or shorter or ten times 284  
 a kilometre or a colour instead of a length, a living being... none of these is a 285  
 possibility. The property would not be the same property: it would not be 1 m. 286  
 Properties could not have been different: all their natural properties are essential to 287  
 them. So properties are not events. So, individual properties are not events. 288

There is also the radical view that events are *fragile*. Lewis (1986), denying that 289  
 there are such, defined them as events with very rich essences. Thus, Aaron's 290  
 smiting the water is a fragile event if and only if it would not be the same event if 291  
 any of its actual properties were to change. For instance, it would not be the same 292  
 event if Aaron's staff were 20 cm longer, if Aaron were happier, if the weather were 293  
 a little bit sunnier, if the smiting happened a few seconds later and so on. This view 294  
 is usually rejected because it is counterintuitive. However, a second reason for 295  
 denying that there are fragile events arises in causal contexts. If we accept that 296  
 fragile events can be causes and effects, we get an embarrassing overabundance of 297  
 spurious causes. Suppose that the fragile event that is Aaron's smiting the water is 298  
 the cause of the death of the fish in the river. If the length of Aaron's staff is causally 299  
 dependent on the decision of an old carpenter, then, given transitivity, the decision of 300

the old carpenter would be a cause of the death of the fish in the river. Yet it is clearly not. (I will return to this problem in “Section 7”).

In any case, fragile events are not individual properties; nor are they bundles of these. For, even if all of the properties of a fragile event are essential to it, the nature of the event is *not* the sum of all its properties. Again, events are more like substances: they have natures. So even if all of the properties of a fragile event are essential to it, some of them still have a special status. Consider why the temperature in the air is part of the fragile event that is Aaron’s smiting the water, but the length of Moses’ cloak is not: *something like* a more robust event (Aaron’s smiting the water?) acts as the nucleus of the whole that is the fragile event and draws a limit to the properties that are to count as the properties of the event. This is why the temperature in the air is part of the fragile event that is Aaron’s smiting the water, but the length of Moses’ cloak is not. Just as the celestial bodies that constitute a planetary system need a gravitational centre that defines the limits of the system, properties belong to the fragile event because some properties are at its hub. However, there is nothing like a nucleus when we attend to a bundle of properties. All properties in the bundle are essential to the bundle as well; but none has a special role in the bundle. Properties in a fragile event are ordered, but *any* combination of properties is a bundle of properties. So bundles of individual properties are not fragile events.

## 5 Individual Properties are not Bare Particulars 321

I concluded in “Section 3” that individual properties are not individuated by their bearers. Their *individuality* is simply theirs. But their *nature* is not parasitic upon other beings either. Thus, individual properties are *individual natures*. I will consider here an indirect argument (commonly raised within the framework of predication) against the thesis that individual properties are individual natures and argue that this argument is misconceived. As a corollary, it will emerge that individual properties are not bare particulars.

Moses and Aaron are both rational beings. Philosophers that believe in universal properties would explain this truth saying that both of them, Moses and Aaron, instantiate *the same universal property*: the universal rationality is in them at the same time. On the other hand, philosophers that believe in individual properties also have a simple explanation for this truth. Moses and Aaron are both rational because each of them has his own numerically distinct *individual rationality*. But here a question arises for the second group of philosophers. We are told that Moses is rational because he has an individual rationality and that Aaron is rational because he has another individual rationality. But what does it mean to hold that their individual properties are both *rationalities*? Is this not just our original problem in a new but equivalent form? Is there any difference at all between having to explain that Moses and Aaron are rational and having to explain that their relevant properties are both rationalities? As Loux puts the problem:

[W]e explain the truth of ‘Socrates is wise’ by appealing to a trope that Socrates has; but clearly the trope can do its explanatory job only if it is the

right kind of trope. It cannot, for example, be a colour trope or a shape trope. It must be a wisdom. But, then, how do trope theorists explain the fact that the relevant trope is of wisdom? (Loux 1998: 85)

It seems to me that this difficulty is ill-conceived. We are not required to explain the nature of individual properties. We may be required to explain the nature of substances, primary substances or events. This is because substances and events have natures and we believe that there could be an ultimate foundation for these natures, perhaps in terms of properties, perhaps in terms of secondary substances... However, this is not the case with properties, either individual or universal. Properties do not *have* a nature: they *are* natures. Properties are individual or universal natures. This is precisely why they can have explanatory powers, ontologically speaking. This is precisely why they can, if anything can, contribute to the explanation of the nature of other entities that do have a nature.

Suppose that individual properties were not individual natures but had a nature. This could only mean two things. (1) It could mean that individual properties are particular instantiations of universals. The nature they have is finally a universal nature. If this is the case, then their individuality *has* to be explained. This could be done in terms of the entities in which universals are instantiated: substances or events or in terms of bare particulars. I have already argued, in “Section 3”, that there is no reason to accept that individual properties are individual because their substances or events are individual. So we are left with the idea that individual properties, abstracted from the universal natures they are coupled to, are bare particulars. This is, explicitly, Moreland’s view. He expresses it nicely, saying that bare particulars are not (universal) properties, but are *tied to* (universal) properties (Moreland 1985: 33, n. 43). (2) The claim that individual properties are not individual natures but have a nature could mean that their nature is their membership of a certain class. Individual properties, independently of such membership, do not have (nor are) a nature.<sup>13</sup> In both readings, we are left with the idea that individual properties, when abstracted from all other members of their set, are just bare particulars.

In both readings, the idea that individual properties have a nature (either a universal or something to be explained in terms of class membership) makes individual properties bare particulars *plus* a nature. The, say, “propertiness”—the nature—of individual properties is explained away, and we are left with their bare individuality. This must be mistaken. For what does it mean that they are *properties* rather than, say, particular substances?—think of the view that substances are universals that inhere in a bare particular or the view that the nature of a substance is determined by its membership in a natural class.<sup>14</sup>

The idea that individual properties are entities *with* a nature implies that they are bare particulars *plus* “X”. However, the individual property theorist is not proposing an old ontology of bare particulars *plus* universals nor of bare particulars *plus* class membership nor of bare particulars *plus*... He is proposing a new ontological

<sup>13</sup> See, for instance, Ehring (2001) where he argues that a trope’s nature is determined by its membership in a natural class, where the class also includes *possibilia*.

<sup>14</sup> These views have been defended, for instance, by David Armstrong (1997) and Quine (1953), respectively.



category in terms of individual natures. Thus, individual properties do not have a nature, tied to a particularity. They simply *are* individual natures. This is why they can be a useful ontology, ultimate and irreducible. And this is why being forced to explain the nature of an individual property is as illegitimate as being forced to explain the nature of a universal property. Both are natures: only, the latter can be in many; the former cannot.

That individual properties are individual natures—not individualities with natures—would solve other puzzles too. For instance, consider the problem, posed by Denby, that individual *determinate* properties fail to explain that:

Some properties *exclude* others: if a particular is red all over, then it cannot also be blue all over (at the same time); if something is exactly 1 kg, it cannot also be exactly 10 kg. And some properties *entail* others: if a particular is red, it must be coloured; if it is 3 kg, it must have a mass... (Denby 2001: 299. Original italics)

None of these properties of properties are properties *over* properties. That we can call all of them essential properties of the properties in question means that they *are* their (individual) nature. There is no need for a full hierarchy of determinables (individual or not) to explain the essential properties of any property. The very idea of this hierarchy seems difficult to grasp. Are we to understand that a substance that is red has a property of a determinate red *plus* a property of colour *plus*...? How, in turn, should we understand the way in which all these properties are related to each other? Through the presence of more properties in the same substance? Surely not. Properties (including individual properties) are not individuals *with* natures; they are natures.

Moreover, a hierarchy of determinable natures in the same individual nature would reintroduce an old difficulty, posed by Peter Abelard. Abelard (1919–1933, *Logica Ingredientibus*, 11:28–12:14) argued that if the same essential natures (of animalhood, of corporeal and mortal substance, etc.) are in Socrates and in Brunellus the donkey, then Socrates and Brunellus have the same essential nature, i.e., they should be identical except for their own forms or their own individuality. However, their forms or their own individuality (*minus* their essential natures of animalhood, of corporeal and mortal substance, etc.) do not suffice to explain their own being, for their nature would have been excluded. Hence, Socrates and Brunellus must each have their own individual nature. In the same way, if two given individual properties, say an individual scarlet and another slightly different individual scarlet, had the same essential nature of scarlet, of redness, of colour, etc., they would be the same property—except for their own forms and individuality. Yet their own forms and individuality (*minus* their essential natures of scarlet, or redness, or colour, etc.) cannot suffice to provide their identity because most of their essential properties would be lost. So every property (universal or individual) of scarlet must be a whole nature, which is essentially a scarlet nature and consequently a redness nature and consequently a colour nature, etc. A property does not have a hierarchy of natures over natures; it is a complete, simple, and unique nature that can enter into different relations with other natures and be differently described.<sup>15</sup>

<sup>15</sup> This parenthesis does not attempt to offer an account of individual properties or universal predication. It is clear that much more work than this has to be done to resolve these difficult issues.

**6 Summary** 429

So far, I have argued that individual properties have the following characteristics: 430

1. *Individual properties are not universal because they are not one in many.* 431
2. *Individual properties are not states of affairs because they do not need other individuals to provide (ontological) conditions of individuation.* 432  
433
3. *Individual properties are not events because they cannot possibly change and keep their identity.* 434  
435
4. *Individual properties are individual natures: they are not bare particulars plus a nature.* 436  
437

It is the task of the remainder of the paper to show that all these characteristics make individual properties the best ontology for causation. First, I will defend a thesis of causal difference: causes and effects cannot *differ and be the same* causes and effects. If this thesis is correct, then causes and effects can be neither substances nor events; they must be properties (universal or individual) or properties that exist in states of affairs. Second, I will also argue that, if properties are the entities between which causal relations hold, some usual problems that arise in causal contexts, such as spuriousness or the problem of the compound cause, can be solved. Finally, I show that one difficulty of Armstrong et al., if applied to causal duplicates, is better solved in terms of individual properties rather than in terms of universals or of states of affairs.

**7 The Argument from Causal Difference** 448

The thesis of causal difference is this. *Causes and effects cannot differ and remain the same causes and effects.*<sup>16</sup> In other words, the following thesis (D) is true when applied to the ontology of causation: 449  
450

(D) If  $x$  in a possible situation  $s_1$  and  $y$  in a possible situation  $s_2$  are different in those situations, then  $x$  and  $y$  are distinct. 452  
453

Note first that the properties that count here are natural and pure properties: spatiotemporal properties, the property of being identical to oneself, relational properties to a bearer or the property of occurring at  $s_1$  and so on are not considered; otherwise, (D) would be trivially true. So there is a non-trivial sense in which (D) is *not* true:  $x$  in  $s_1$  and  $y$  in  $s_2$  might have different properties and still be the same entity. For instance, Moses could have been blind or wiser or deaf. Therefore, the same entity, Moses, has different properties in different possible situations. And we have already seen (in “Section 4”) that the same is true of events, at least, of non-fragile events. So (D) is not trivially true. However, I think it is true of causes and effects. If this is the case, then substances and events are not suitable candidates for causal relata.

<sup>16</sup> A terminological note could be useful here. I will use and have been using ‘different’ for something like ‘discernible’, where the latter does not have epistemological implications: two entities are different if they have different (natural) properties. ‘Distinct’ is like ‘other’ or ‘numerically other’. The idea is to propose a discourse that does not exclude the possibility that there are indiscernible (non-different) but distinct (other) entities. In other words, the idea is to propose a discourse where Bradley’s dictum that ‘distinction implies difference’ could be subject to consideration. I also think that the dictum is false (see note 22). But this should not matter—yet.

That (D) is true of causes and effects means that there are not two situations that share the same effect (or the same cause) but in which this effect (or cause) is different. It is impossible that  $x$  and  $y$  are the same effect (or cause) and that they are naturally discernible. If true of causes and effects, (D) allows that there are indiscernible but distinct causes and effects, but it does not allow that there are discernible but identical causes and effects.

Now (D) is true of effects. The very same concept of effect conveys that a given effect cannot naturally change and still remain the same effect. For an effect is defined as *what* is induced or what is caused (by a cause). What is induced is a change, but a change is nothing but a difference in a situation (due to a cause, if caused). However, different changes necessarily are numerically other changes; the very same change cannot be different at two possible worlds. Different differences are other differences.<sup>17</sup> Therefore, different effects are other effects.

Compare these two situations. Suppose that the following situation  $s_1$  is a causal situation: when Aaron lifted up the staff that was in his hand and smote the waters of the river, *the waters in the river were all turned into poisonous blood, and the fish that were in the river died without pain*. Now compare  $s_1$  with another possible causal situation  $s_2$  in which, when Aaron lifted up the staff that was in his hand and smote the waters of the river, *all the waters in the river were turned into blood, and the fish that were in the river died painfully*.

Let us agree that the situations do not differ in extrinsic matters: everything happens at the same times and places; same properties do not have different bearers and so on. Just for simplicity, assume too that every natural occurrence that happens in the situations is causally related. Now, if we compare the situations, we may admit that the differences between  $s_1$  and  $s_2$  are not enough to produce other events or individuals in the situations. The river is the same river (or the two rivers are the same two rivers, if you think that the river of water and the river of blood are two distinct rivers instead of one). The fish are the same fish. Their death is also the same death. That is, even if the death of the fish is different in the situations, we may admit, this difference is not essential to the event, so it does not make another death. Nevertheless, if you are not happy with this claim, think of any natural property, other than being painful, that the death could have had but does not have. As long as you agree that events could naturally change and remain the same entities, the argument will hold. In addition, the conversion of water into blood in  $s_1$  is the same conversion of water into blood that occurs in  $s_2$  and so on.

The same individuals exist and the same events occur in  $s_1$  and  $s_2$ , yet the effects in those situations are distinct. For, by hypothesis, *what* is caused in  $s_1$  and *what* is caused in  $s_2$  includes in both cases the differences between the situations. So *what* the cause produces in  $s_1$  and *what* the cause produces in  $s_2$  are different changes or different sums of changes. Different changes are other changes; different sums are other sums. Thus, the effect in  $s_2$  is effect other than that in  $s_1$ .

<sup>17</sup> I think that there is nothing obscure or suspicious in the idea that effects are differences made by causes or in the idea that causes are difference makers, that is, effect makers. They are difference makers in the sense, not only that the world would have been different had they not occurred, but also in the sense that they are makers of being.

Perhaps because most of what is caused in the situations belongs to a given substance or to a given event or because all that is caused does in fact constitute an event (such as the death of the fish), we tend to select this event as the effect. *Then*, we consider the causal changes that the event might undergo in different possible situations. This way, if the changes are not essential to the event, we conclude that the effect is also preserved through possible change. Yet this is the wrong way to proceed, because the effect is *the whole change* in a situation (due to a cause), the sum of causal outcomes, irrespective of the entities they could belong to. Hence, even if the death could have been different, and then, even if it is the same death in different possible situations, the sums of the (causal) changes in the situations are still other. An effect is nothing but a collection of differences (produced by its cause). That being the case, what causally happens in  $s_1$  is other than what causally happens in  $s_2$ .<sup>18</sup>

By parallel reasoning, different causes in different possible situations are distinct causes. That is, a cause is defined as *what* induces or what causes (an effect). Now, if the cause were different, it would be causally different and then it would be another cause. Hence, if the cause were different, its difference would turn it into another cause.

Therefore, different effects are other effects, and different causes are other causes. Hence, causes and effects are not substances or events because substances and events can change and keep their identities. We are then left with the idea that causes and effects are best understood as properties (universal or individual), or properties that make states of affairs.

Moreover, if causes and effects are properties, other familiar problems can be solved. Consider *spurious causation*. We saw at the end of “Section 4” that if fragile events were causes and effects there would be an overabundance of spurious causes. If Aaron’s smiting the water, being a fragile event, is the cause of the death of the fish in the river and if the length of Aaron’s staff is the causal result of the decision of an old carpenter, then, given transitivity, the decision of the old carpenter is a cause of the death of the fish in the river. However, the carpenter’s decision is causally irrelevant to the death.

It may be thought that because sums of properties are fragile, as all properties in the sum are essential to the sum, the problem of spurious causes also arises when sums of properties are the causal *relata*. This is not so. First note that if, instead of fragile events, we consider substances or very coarse-grained and robust events, we also get a plethora of spurious causes. For instance, suppose that Moses’ communication with God is a cause of Aaron’s smiting the waters. Then, Moses’ survival when he was a baby is, by transitivity, a cause of the death of the fish in the river. Yet this is clearly not the case. However, Moses is not here a fragile substance, nor is his communication with God a fragile event, so fragility is not the ultimate reason for spuriousness.<sup>19</sup>

<sup>18</sup> Please keep in mind that the cause of a given effect is not being considered as part of the relevant properties of the effect. Otherwise, the argument could seem suspect. The idea is that a different effect is another effect; but this leaves open the possibility that the same effect is caused by different causes, for instance. In my...

<sup>19</sup> Ned Hall (2000) proposes to lay the blame on transitivity. However, if I am right and causes and effects are (sums of) properties, this drastic movement is also unnecessary.

It is interesting to notice that spuriousness seems to multiply exponentially. Once a bit of irrelevant information is allowed into the causal chain, lots of irrelevant information spread rapidly. That being so, a more promising line of thought would focus on a kind of ontology that restricts the information in such a way that it allows in only, and all, that is causally relevant. Events do not allow this objective to be met. As L.A. Paul (2000: 251) has written, in her defence of an ontology of aspects for causation, a reliance on events allows too much information into the causal claim, and, when this extra information is combined with transitivity, spurious causal results are easy to generate. The same holds for substances, of course. But properties would enable the objective to be met. Some of the properties of baby Moses could belong to the causal chain that culminated in the properties of the death of the fish. Yet if they belong to the casual chain, they are not spurious. Some other properties of baby Moses do *not* belong to the causal chain. If we understand that baby Moses belongs to the chain, we include in our causal statement all these causally irrelevant properties, and spuriousness arises. The same is true of Moses' action of communicating with God: some of the properties of his action can be causally relevant, while others are not. If his action as a whole is included into the causal chain, many irrelevant properties are included in the chain. However, if the compound that is the cause is composed of only (and all) causally relevant properties (irrespective of the entities to which they could belong), the reason for spuriousness disappears.

On the other hand, it might be thought that a causal ontology in terms of properties is exposed to the problem of *the compound cause*. Roughly, the difficulty is that the same property in different collections of properties can make different causal contributions; however, the same causes are not supposed to cause different effects. Therefore, properties cannot be causes after all. Now, note *first* that this problem arises only if it is thought that every property in the whole that is the cause is, or has, its *own* causal power.<sup>20</sup> However, the idea that all properties are powers is open to question. *Second*, even granting this first idea, there is no reason to accept that properties are *powers that sum up* in a causal compound. A sum of properties can be a cause. But this does not mean that properties sum up causal powers to cause. Rather, properties in a causal sum are like pieces in a mechanism: their powers cannot be separated from the causal power of the whole that is their sum and the cause. So the same property (or indiscernible properties), in different sums of properties, can make different causes. Hence, there is no problem.

## 8 The Argument from Duplication

There remains the issue of whether causal properties are universal or singular or whether they exist in states of affairs. The resolution seems to be that if it is possible for a non-trivial principle of identity of indiscernibles to be false,

<sup>20</sup> For instance, Sydney Shoemaker (1980) or Molnar (2003: 194–198, specially).

individual properties are better suited to be causal *relata*.<sup>21,22</sup> To see this, consider 584  
 the following difficulty inspired in Armstrong (1978: 81).<sup>23</sup> The theses: 585

1. Causes (and effects) are sums of properties. 586
2. Two causes (and effects) can resemble each other exactly. 587
3. Causes (and effects) are sums of universals. 588

form an inconsistent triad. If (1) and (2) are true, (3) has to be rejected. If causes (or 589  
 effects) are sums of properties and if properties are universals, then there cannot be 590  
 two (or more) indiscernible causes (or effects). This is because universals are 591  
 ubiquitous: the same universal *is* in any of its instantiations. Hence, in order for it to 592  
 be true that there can be two indiscernible causes (or effects), these must *not* be sums 593  
 of universal properties. On the other hand, if causes and effects are sums of 594  
 individual properties, (2) can be maintained. In contrast to universals, individual 595  
 properties are not ubiquitous: two sums of indiscernible individual properties would 596  
 be distinct sums of properties. This is my preferred view. 597

However, one could, following Armstrong's general intuition, maintain (3) and 598  
 reject (1). This is how he argues for his position. Causes and effects are not *just* sums 599  
 of properties; (1) is false. Yet (3) is still true; causes and effects are universals, and 600  
 they exist as universals do, i.e. instantiated by individuals. In sum, causes and effects 601  
 are states of affairs. 602

Now, I think there are at least two reasons why causal *relata* are not states of 603  
 affairs but are better understood in terms of sums of individual properties; so (1) and 604  
 (2) can be maintained. The *first* reason is that if a property existed in *different* 605  
 individuals, the result would be *different* states of affairs. For instance, let us imagine 606  
 that only one property *P* of the movement of Aaron's staff is the only causally 607  
 relevant property for the properties of his turning the water into blood in the biblical 608  
 episode. Suppose that it is possible that the same property *P* had belonged to the 609  
 movement of Moses' cloak, being the only causally relevant property for the 610  
 properties of his turning the water into blood. This second possibility is causally 611  
 indiscernible from the first, even if it contains different states of affairs. *P*'s 612  
 belonging to the movement of Aaron's staff constitutes a *different* state of affairs 613  
 from that constituted by *P*'s belonging to the movement of Moses' cloak. So, if 614  
 causes and effects were states of affairs, we would have *different* causes and effects 615  
 where in truth the causal facts are indiscernible. 616

The *second* reason is that even if the states of affairs themselves were 617  
 indiscernible and all the properties in them were in the sum of properties that 618  
 constitute the indiscernible causes (or effects), we would still have to count among 619  
 the causal elements things that are not causally relevant, that is, bare particulars. 620  
 Moreover, if bare particulars were to count among the causal elements, despite their 621

<sup>21</sup> Again, non-trivial means that we should not take non-natural properties into account.

<sup>22</sup> To work under the possibility that the principle is false seems reasonable enough. But I think I can also offer a reason why it is false. To conceive of something as distinct, as a numerically other entity, is not to think of it as being in any relation of agreement or difference with any other thing. And a reason must be given to assume otherwise; a reason must be given why, as Johnson (1964: 22) would put it, 'otherness presupposes comparison'.

<sup>23</sup> As Armstrong does, this difficulty is usually written in terms of objects or substances (see Moreland 1985: 59), but it can be safely applied to other sorts of possible indiscernibles, such as causal *relata*.

causal irrelevancy, swapping would not be possible without making a difference. 622  
 However, swapping without difference has to be possible. Contrary to Armstrong's 623  
 (1989: 131–2) criticism of individual properties on the grounds that they would swap 624  
 without causal consequences, swapping yields the desirable result: indiscernible 625  
 causal properties (at distinct points in space–time or at distinct bare particulars) 626  
 should *not* make causal differences. This is precisely what we should expect of 627  
 causation. 628

I conclude that causal *relata* are not: (1) events (or substances) because if exposed 629  
 to actual or possible natural change they would be other causes and effects, (2) 630  
 universals, if causal duplicates are possible, or (3) states of affairs because the 631  
 entities in which properties exist do not affect the causal relation. Thus, causes and 632  
 effects are (bundles of) individual properties, where these are understood as 633  
 individual natures and not as individualities with a nature. 634  
 635

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## **AUTHOR QUERIES**

### **AUTHOR PLEASE ANSWER ALL QUERIES.**

- Q1. Please check affiliation 1 if properly captured.
- Q2. In footnote 10, it seems that the second sentence is incomplete. Kindly check and provide the complete sentence.
- Q3. The last sentence in footnote 18 seems to be incomplete. Kindly check and provide the complete sentence.
- Q4. The last footnote containing “Acknowledgments...” was deleted. Kindly check if appropriate.
- Q5. Kindly provide citation in the body for Ackrill 1963.

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