

Non-Reductive Physicalism Cannot Appeal to Token Identity¹

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Philosophy of mind originally grew out of metaphysics; herein, we approach one leading theory of mind by piecing them back together. Advocates of *non-reductive physicalism* (NRP) contend that although mental properties are not reducible to physical ones, mental properties nonetheless depend on physical ones. Non-reductive physicalists further hold that all particulars are physical, or are fully composed of physical particulars.² In this paper I focus on the plausibility of the view that mental properties depend on physical ones, while being type irreducible. Of course, this position is viable only insofar as a defensible relation between mental and physical properties is available (e.g., supervenience, realization). It is fair to say that much of the literature on NRP concerns the viability of candidate psychophysical relations. Today, I want to shorten the list of candidates, ruling out one important contender. My aim is to rule out *token identity*:

(TI): Every instantiation of a mental property is an instantiation of a physical property.

Although type identity entails (TI), (TI) is mainly discussed in the context of non-reductive physicalism. Remember, philosophers turned to (TI) as a more plausible (and still physicalist) alternative to the type identity thesis. In the eyes of many, the phenomenon of multiple realizability motivated the conclusion that mental properties are not identical

¹ Thanks to Gerald Vision, Michael Huemer and an anonymous reviewer at this journal for their helpful suggestions.

² For critical discussion see Kim (1998), (2005).

with physical properties. But this result is compatible with the token identity thesis.³ (TI) allows one to claim that although type identity does not obtain, mental properties still ontologically depend on physical ones, for every mental property tokening is a physical tokening.

To be sure, there are other psychophysical relations besides token identity that advocates of NRP have appealed to. I happen to find *all* of them problematic. I will not delve into these alternatives today; but if the results of this paper hold, advocates of NRP must limit themselves to them, and the relations must be clearly distinguished from (TI). For today I argue that advocates of NRP cannot appeal to token identity—it would be incoherent to do so. Surprisingly, only the reductivist can appeal to (TI). (Of course, the type identity theorist has little interest in (TI), although she defends it by default—her point is to defend the stronger thesis of type identity—but as I explain, (TI) can be defended, with interest, by a physicalist who rejects type identity and adopts an ontology of tropes).

Here is how I will proceed. When it comes to today's work, the devil is in the details of the metaphysics of property natures. I'll need to consider the cases of universals and tropes separately. And I must attend to whether the universals or tropes in question are dispositional, categorical, or a mix of both. Section 1 assumes an ontology of universals; it claims that token identity is incoherent on a categoralist or mixed conception of property natures. My point is then extended to the case of dispositionalism. Then, Section 2 turns to the trope theory. Now, the earlier problems do not emerge. But in the hands of the trope theorist, token identity becomes a *reductive* position, even when conjoined with the view that mental property types are not reducible to physical ones. Token identity is thereby unavailable to the non-reductive physicalist. Section 3 concludes. I believe that today's results are novel and

³ The expression “token identity” can be used in multiple ways, so it is worth underscoring that by a “token identity thesis” I mean an identity relation between property tokens. Due mainly to the influence of Donald Davidson, the token identity thesis was first framed in terms of coarse-grained events, but decisive criticisms of Davidsonian and Quinean formulations of events emerged (see Lombard (1998); Davidson (1980), p.178; Schneider (2005)). Interest in coarse-grained events waned, however, and philosophers turned to a conception of events in which events are property tokenings. Nowadays, philosophers tend to take property tokenings as the relata of the token identity relation, where such can be either tropes or tokens of universals. So this paper concerns token identity as a relation between *property tokens* (or equivalently, between events construed as property instances). Given this, it is important to bear in mind that by a “property token” I do *not* mean a particular thing or substance. For although a substance can token a property, a property token is not identical with a substance. A property tokening is a substance's (or arguably, another kind of particular's) having a property at a certain time. (I treat the topic of psychophysical substance identity in Schneider (2010) and (forthcoming a and b)).

surprising: token identity is commonly regarded as being part of the non-reductive physicalist's platform. But it is only available to the reductivist.

So let us begin.

1. Token Identity as a Relation between Tokens of Universals

Philosophers of mind tend to view properties as being immanent universals. Further, following D.M. Armstrong, David Lewis, and others, many hold that immanent universals have categorical natures.⁴ Recall that properties are categorical when (i), each type of property has a unique inner nature or quiddity, a “metaphysical signature tune” as Armstrong puts it (Armstrong (1989c)). And (ii), property natures are not determined, even in part, by the causal powers or dispositions they have; properties are entirely non-nomic.⁵ Indeed, the categoricist holds that there are metaphysically possible worlds in which two *this-worldly* properties swap all of their causal powers yet retain their identities. Armstrong sketches the landscape of positions that the proponent of universals or tropes can occupy:

Properties (and relations) are thought of by some philosophers as having a nature that is self-contained, distinct from the powers that they bestow. We shall call this position *Categoricism*. Others think of them as having a nature that essentially looks beyond the particulars they qualify, outward to potential interactions with further particulars, and where this nature is exhausted by these potential interactions. This view may be called *Dispositionalism*. As one might naturally expect, there is a *Two-sided View* which holds that properties have, essentially, both a categorical and power side to their nature.⁶

To Armstrong's trilemma one could add a fourth view (the “mixed conception”): that some properties have natures that are either dispositional, categorical or two-sided while the others are all of a different type. (Or perhaps some of these others actually fall under one of the remaining categories, while others fall under the other remaining category). Anyone serious about properties, whether they be tropes or universals, will need to decide between these views. While I am

⁴ Herein I refer to the view that universals are immanent as “immanent realism” or simply “realism.”

⁵ I will use “causal powers” and “dispositions” interchangeably.

⁶ Armstrong (1997), p. 69. For further discussion see also Blackburn (1990) and Heil (2005).

sympathetic to a version of the two-sided view I will not develop this matter today (but see Schneider (forthcoming a)). For I have other fish to fry: no matter what you suspect the nature of universals to be, there simply is *no* position of the nature of universals in which the non-reductive physicalist can plausibly endorse the token identity thesis. Further, we do not need to discuss the fourth scenario any further. For if it is the case, then a given mental property is either entirely categorical, entirely dispositional, or two-sided. Notice that if one rules out token identity in the context of dispositionalism, categoricism and the two-sided conception, the results will also apply to any variant of the fourth case. So I shall say no more about the fourth scenario.

This being said, I shall now illustrate that token identity is incoherent on either a categoricist or two-sided conception of universals, insofar as type identity doesn't obtain. Consider two property types: M1, a mental type, and P1, a physical type. Question: what would it take for an M1 token to be *identical* with a P1 token, rather than merely be coinstantiated by the same substance? Remember, we have assumed that universals have unique and non-nomic inner natures, as per categoricism. So must their tokens; namely, any token of a given type has the inner nature distinctive of its type. Now consider m1, a token of M1, which has the categoricity distinctive of M1. And consider a token of P1, p1, which has the categoricity distinctive of P1. Now, how can two tokens be identical, being the *very same token*, if they differ in their categorical natures, as is required by NRP's rejection of type identity? Since P1 and M1 are, *ex hypothesi*, non-identical, and tokens have the categoricity of the universals they instantiate, m1 does not have P1's categoricity; m1 has the categoricity distinctive to M1 and its tokens.

Could one plausibly respond that M1's tokens can have a *different* categoricity than that of M1, namely, each of M1's tokens has the categoricity of the physical property token they are identical with? I've never heard of the categoricist venturing such a position, but in any case, this is a desperation move. It is implausible to claim that M1 has a particular categorical nature, while its tokens do not. These tokens must be of a different type altogether.

Turning to another tactic, the critic may instead retort that the categorical nature of M1 is disjunctive, being identical with a disjunction of the categoricities of physical properties, i.e., those properties that the m1 tokens are token identical with. This would leave M1 with a categoricity that is a disjunction of the categoricities of the physical types. For the sake of argument, let us assume that categorical properties can be disjunctive. Even so, this response is unavailable to NRP, for it

claims that a mental property is identical with a disjunction of physical properties. This is a version of the type identity theory, recall.

One last try: perhaps $m1$ has the categoricity of $M1$, and further, because $m1$ is token identical with $p1$, it also possesses the categoricity distinctive of $P1$. This response also fails. For $m1$ would then be of a different type than $M1$, having a categoricity that is a combination of the categoricities of both $P1$ and $M1$. I conclude that token identity is unavailable to a categoricalist version of NRP that appeals to universals.

This conclusion also applies to the two-sided view as it illustrates that in absence of genuine type identity, tokens of different types must differ in their categorical dimensions. This leaves a universals-based NRP compatible with token identity only insofar as mental properties are dispositional.

So let us turn to dispositionalism. Dispositionalists hold that a property's nature is entirely determined by its dispositions or causal powers.⁷ We can distinguish between two kinds of dispositionalism:

Total Dispositionalism (TD): Property natures are exhausted by the dispositions they have, and all of a property's dispositions are essential to its nature.

Selective Dispositionalism (SD): Property natures are exhausted by the dispositions they have, but some, and not all, of a property's dispositions are essential to it.

Selective dispositionalism is particularly problematic. As John Hawthorne notes, it is difficult to draw the line between dispositions that are constitutive of the property and those that are not. This leads him to quickly set aside this position (Hawthorne (2006), 212). I sympathize. But (SD) can avoid the objections that I am about to raise against (TD), so we had better consider it.

Dispositionalism itself is controversial; as Sydney Shoemaker puts it, "most contemporary philosophers" reject his causal theory of properties (2010, p.142). But here, one may suspect that most proponents of NRP are dispositionalists, despite its controversial nature, for most are functionalists. It is a mistake to assume that functionalism requires

⁷ A few details: of course it is the instantiation of a property, not the type itself, that figures as a cause or effect. Dispositionalism only purports to be a theory of properties of spatiotemporal objects. For discussion see Shoemaker (1984), Heil (2005) and Hawthorne (2006), Ch. 10.

dispositionalism, however. But I'll leave this to a note.⁸ For several considerations serve to rule out token identity in the context of a dispositionalist version of NRP.

Turning to (TD), recall the following commonly accepted principle:

The Indiscernibility of Identicals: Necessarily, if two particulars, x and y, are identical, then any property of x must be a property of y, and vice versa.

Property tokens are particulars, of course. Assume that the non-reductive physicalist is correct that physical and mental tokens are of different types. Now, according to (TD), if a property is a universal, it is individuated by all and only its causal powers, and its tokens have *all and only* the causal powers essential to the type. This being said, if physical and mental tokens are truly of different property types, then a given physical token must have at least one disposition that the mental token lacks (or vice versa). Let us call this disposition "D1." The token having that disposition will have the property, *having disposition D1*. The other property token will not. So the tokens cannot be identical.

Here is a second route to the same conclusion. Let us again assume that (TD) is in force. Can a single property token be a token of two distinct universals? If P1 and M1 are different types then at least one of the types must have a disposition the other lacks, otherwise they would be the same type. So suppose that P1 has D1, and M1 does not. Tokens have all and only the dispositions of their respective types. A token cannot have both *all and only* the dispositions of M1 and *all and only* the dispositions of P1. Hence, a realist version of NRP which adopts (TD) cannot also accept the token identity thesis.

Now let us turn to (SD). I've directed the above objections at (TD) because (SD) does not succumb to either of them. Remember, (SD) holds that dispositions exhaust property natures, but only some of a property's dispositions are essential to it. M1 and P1 can be distinct types, and a single token can belong to both—the token can have *all* the dispositions that are essential to M1, but it can have more as well, having *all* the dispositions essential to P1. So it is compatible with (SD) that a token of a physical type also be a token of a mental type. So it

⁸ A functionalist about mental states may simply offer an individuation condition as a principle in which properties are classified by their functional roles. For property natures may be categorical but still be accurately taxonomized by their functional roles. The categoriclist generally grants that property natures have their causal powers with nomological necessity. It is the metaphysical depth of the functionalist condition that is under dispute: for the dispositionalist property natures are *exhausted* by the functional roles; for the categoriclist the dispositions that a property has are not essential to the property.

seems that the advocate of (SD) can appeal to token identity.⁹ I do not think an appeal to (SD) will do the trick, however. For consider that the very same disposition that is said to be contingent qua the token's being of type M1 can be essential to the nature of the *very same token* qua its being an instantiation of P1. Bizarrely, a given disposition is supposed to be both essential and non-essential to the same token's nature.

Let us now piece together the results of this section. We've been assuming a framework of universals throughout. By and large, the non-reductive physicalist's appeal to token identity is implausible in the context of both dispositionalism and categoricism for the same underlying reason. NRP holds that mental property types are non-identical with physical ones. As per immanent realism, properties are *repeatables*, being multiply instantiable, with each token having the same inner nature as any other token of a given type. Further, tokens have the nature of their types, whether the nature is categorical, dispositional or a combination of both. As a result of this, mental and physical tokens cannot be identical—*tokens of distinct types must differ in their inner natures, for such are determined by their respective types*. Hence, if properties are repeatables, any non-reductivist appeal to token identity will be ill conceived.

Where will proponents of token identity go from here? The non-reductive physicalist will surely not turn to an austere nominalism in which mental properties are eliminated in favor of predicates or classes of objects. No; mental properties are at the heart of her view—she will want to do them justice. She will embrace a trope framework. But as we shall now see, the metaphysical landscape shifts when tropes are involved, for tropes are not repeatables.

2. Tropes

If properties are tropes, rather than repeatables, what are property types? Trope theorists have taken property types to be identical with sets of resembling tropes, where resemblance is primitive (Campbell (1981); Williams (1966)). Alternately, the members of the set are said to possess a primitive distributive unity (Stout (1931)). Such in house differences will generally not matter for our purposes. What is important is that on both views, a property type is tokened when a particular has a trope that is a member of the set.

An important question: should the non-reductive physicalist say that a mental type is identical with a set of irreducible *mental* tropes or

⁹ I owe this response to Michael Huemer.

with a set of *physical* tropes (where each member of the set is token identical with a mental trope)? Here, I am asking whether a trope version of NRP should accept a token identity thesis. Let me explore one way of answering this question; one I will ultimately reject. According to this line of thinking, any plausible NRP must take the set to consist in members that are mental tropes, where such members are non-identical with physical tropes. For NRP's commitment to the causal efficacy of mental properties requires a conception of mental trope types in which a given type is identical with a set of *mental* tropes rather than with a set of *physical* tropes. For if a mental type is identical with a set of physical tropes, then NRP would be unable to vindicate mental properties as being genuinely causal. For every case of putative mental causation would merely involve causal relations between underlying physical tropes. In this case, psychological explanations would have physical tropes as their truthmakers. Now, I believe that this position is off the mark—mental tropes that are token identical with physical tropes are causally efficacious, for they are *identical* with physical tropes. (*Mutatis mutandis*, the truthmakers are no less mental than physical).

This matter gives one an initial sense of the shape of a trope-based NRP. One further feature is also worth noting. Consider a resemblance-based trope theory. The functionalist/trope theorist can assign physical tropes into sets that are identical with mental types by using a functional role individuation condition to single out members of a given set. Despite the fact that many of the tropes in a particular set may differ physically from each other, each member turns out to perfectly resemble the next at the psychological level. For they all play the causal role demarcated by the set.¹⁰

Now, let us ask: is token identity even available to a trope-based NRP? Consider that there is no ontological addition to the world when mental types are just sets of physical tropes. From the vantage point of trope theory, property natures are not repeatables, so any ontologically significant claim about property identity does not come at the level of property types, it enters at the token level. A trope-based ontology says that the universe is one of tokens—tropes. Trope types are just means of classifying tropes into sets.

¹⁰ On my view, there is no need to take higher-level types as mere predicates that refer to tropes. But one has the option of taking a predicate-based approach instead. For development see Heil (2005; 2010) and Heil and Robb (2003). They reject higher-level properties for an account appealing to mental predicates, rather than mental properties. There are sparse physical properties, however; such are tropes with two-sided natures. They aptly illustrate the way this ontology alters debates involving mental causation and the nature of qualia.

This observation leads me to pose a key question about trope identity: when a trope theorist ventures a psychophysical token identity thesis is he really venturing a *non-reductivist* position? Insofar as mental types are just classes of similar *physical* tropes, each of which is identical with a mental trope, this view strikes me as a straightforwardly *reductivist* one. Universals are types that are part of the fundamental nature of reality; saying that mental and physical universals are type irreducible is saying that there is a substantive ontological difference to the world. Mental and physical predicates have distinct kinds of truth-makers, for instance. But there is no analog with trope types: if mental tropes are just physical tropes, saying that mental and physical types are distinct is simply introducing different ways of carving up the same spatiotemporal mosaic of physical tropes. After all, the truthmakers for mental predicates are simply classes of physical tropes. This is not a non-reductivist view—it is a form of reductive physicalism.¹¹

What position on mental trope types is genuinely available to NRP then? It must be a position in which a mental property type is identical with a set of mental tropes, and in which mental tropes are non-identical with physical tropes. Hence, token identity is unavailable to the trope version of NRP.

3. Conclusion

We began by assuming the popular conception of properties in which properties are immanent universals. And we found that insofar as mental and physical property types are distinct, token identity is incoherent. The same problems do not emerge for token identity when tropes figure as *relata*, however, for tropes are not repeatables. But we have just learned, surprisingly, that a trope token identity thesis is a *reductivist* position. Hence, the non-reductive physicalist has lost access to a psychophysical relation that has been appealed to since the days in which the multiple realizability doctrine first gathered steam.

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¹¹ I am not suggesting that this is a form of *explanatory* reductivism, however; the trope theorist need not advocate translating talk about beliefs into talk about electrons and quarks. It is a metaphysical reduction.

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