Tropes

Tropes are a kind of abstract particular or particular property. What attracts many to trope theory is that it, in occupying a sort of middle position between classical nominalism (according to which all there is are concrete particulars) and classical realism (according to which there is a separate and fundamental category of universals) appears to avoid some of the troubles befalling either of those views. By accepting the existence of entities that are, or at least that in part behave like, properties, she avoids the charge, often made against the classical nominalist, of accepting an ontology that is too coarse-grained to be truly explanatory (Armstrong 1978, pt. 2). And by not accepting the existence of universals, she avoids having to accept the existence of a kind of entity many find mysterious, counterintuitive, and “unscientific” (Schaffer 2001, 249f. and Armstrong 2005, 310, cf. also Molnar 2003, 22-25). Apart from this very thin core assumption – that there are tropes – different trope theories need not have very much in common. Most trope theorists (but not all) believe that there is nothing but tropes. Most trope theorists (but, again, not all) hold that distinct concrete particulars (which, by most, but not all, are understood as bundles of tropes) are the same when (some of) the tropes which characterize them are members of the same (exact) similarity class. And most (but not all) hold that resemblance between tropes is determined by their (primitive) intrinsic nature. Very little is uncontroversial when it comes to tropes and the theory or theories in which they figure. In fact, even to call one’s posits “tropes”¹ is considered by some to be problematic (cf. esp. Bacon 2011).² In this entry, different views on the nature and individuation of tropes, on how tropes relate to universals and to concrete particulars, and on how tropes might (or might not) be used to (dis)solve well known problems in philosophy, are introduced.

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¹ A label first suggested by Williams 1997[1953], presumably as a joke (cf. Bacon 2011, Schaffer 2001)).

² The literature is ripe with alternative labels (including e.g., abstract particular (Campbell 1990), moment (Mulligan et al. 1984), qualiton (Bacon 2011), quality instance (Segelberg 1999), concrete property (Küng 1967), particular property (Denkel 1996), and unit property (Mertz 1996)).
1. Historical Background

The father of the contemporary debate on tropes was D. C. Williams (1997[1953]; 1963; 1986). But Williams was in all probability not the first to posit the existence of trope-like entities. Who to count among his trope-theoretical predecessors is to some degree contentious as it will depend on one’s take on the nature of the trope (cf. section 2 below). Here, the philosophers most commonly taken to make the cut are introduced. The section ends with a short summary of what are considered Williams’s most obvious successors to date.

1.1 “Tropes” Before 1953

The view that both Plato and Aristotle accepted the existence of trope-like entities, though not entirely uncontroversial, would, if accepted, mean that trope theory has truly ancient roots (According to Mertz (1996, 83-117), the textual evidence for this is stronger in Plato (esp. in Theatetus 209a-d) than it is in Aristotle (but cf. the Categories 1a20-2b9)). Whether or not their posits ought to be understood as trope-like, it is in any case clear that especially Aristotle’s immediate successors so understood them, and that this perception was then carried over into medieval philosophy. According to Mertz (1996: 118) this Aristotelian influence then came to an early end in the Latin West with Boethius, but was retained by Muslim scholastics – for example by Avicenna and Averroës – and through them later returned to the Latin West in the moderate realism of Christian scholastics like Aquinas, Duns Scotus, and Suarez. The idea was then inherited and further developed by later thinkers, including in particular Spinoza and Leibniz, but also by e.g., Descartes, Locke, and Hume. According to Mulligan et al. (1984: 293), it was however in the writings of 19th century German-speaking philosophers that the Aristotelian (trope)ontology was most systematically preserved and refined. Most influential here was undoubtedly Husserl’s theory of “moments” (2001[1900/1913]). In the early 20th century, proponents of trope-like entities included Cook Wilson (1926) and, perhaps most prominently, Stout (1921, 1952).3 Little known by his contemporaries, but arguably one of the clearest examples of an early “trope”-theorist, was the Swedish philosopher Segelberg (1999) who, in the 1940ies, formulated his theory of so-called “quality instances” (for a good overview of hos work, cf. Hochberg 1999).

1.2 “Tropes” After 1953

In 1953, Williams published “On the Elements of Being I-II” in which he argued for a one-category theory of tropes (for the first time explicitly so-called), a bundle theory of concrete particulars, and a resemblance class theory of universals; all of which have become elements of what is now considered the “standard”

3 Well-known for his famous 1923 debate with Moore on whether properties are particular or universal. At the time, the general impression seems to have been that Moore turned out the “winner” in that debate. But according to McBride 2011, the impression is in fact the opposite if the discussion is looked upon with contemporary eyes.
view of tropes. After Williams, the most influential trope-theorist is arguably Campbell (1997[1981]; 1990). Campbell more or less adopted the basics of Williams’s (standard) theory and then further developed and defended it. Most importantly, Campbell “modernized” Williams’s views by situating them in an explicitly scientific framework. Campbell’s 1990 was the first monograph exclusively devoted to setting out and defending a theory of tropes. Monographs on the subject published since then include Bacon 1995 and Maurin 2002 (both defending variants of the standard view), Heil 2003 and Molnar 2003 (both defending and ontology including tropes (understood as powers) as well as substrates/substances), and Lowe 2006 (which counts tropes as one of four fundamental categories). Denkel 1996 and Mertz 1996, both offer rather more idiosyncratic versions of the theory. According to Denkel, pace the majority of the trope theorists, because tropes must exist bundled, they constitute a derived category, and according to Mertz, tropes have two “aspects” – one repeatable intension and one non-repeatable linking mechanism – which means that tropes, on his view, are a sort of entity which arguably transcend the distinction between relation and relata. The most recent contribution to the trope literature is Ehring’s 2011, in which a version of the standard view (except for the fact that sameness of tropes is treated in class primitivist terms) is defended. Papers on tropes and trope theory that have come to importantly influence the subsequent discussion include e.g., Mulligan et al., 1984, which argues that “modes” are essentially dependent entities, the objects of perception, and the world’s basic truthmakers. Simons 1994, in which an influential “nuclear” theory of compresence is formulated. And, Schaffer 2001, in which the nature and individuation of tropes is thoroughly investigated.

2. The Nature of Tropes

To be a trope theorist, you need not agree on much more than that there are tropes. But what, more precisely, does agreeing on this (admittedly minimal) thesis entail? What exists when tropes exist?

2.1 Property or Substance?

In philosophy, new posits are regularly introduced by being compared with, or likened to, an already familiar item. Tropes are no exception to this rule. In fact, tropes have been variously introduced by being compared with and likened to two familiar kinds of things: the property and the substance. To see this, consider the ambiguous way in which Williams (1997[1953], 113) introduces his tropes. Williams asks us to imagine a situation in which there are three distinct yet similar lollipops. Lollipop No. 1 has a red, round, peppermint head. Lollipop No. 2 has a brown, round, chocolate head. And lollipop No. 3 has a red, square, peppermint head. Each lollipop is partially similar to (and partially different from) each other lollipop. But, to say of any two things a and b that they are “partially similar,” Williams points out, is to say that a part of a is wholly similar to a part of b. Now, lollipop No. 1 and lollipop No. 2 are in this way partially similar at least because, let us suppose, their sticks are wholly similar. But the lollipops are also partially dissimilar. More precisely, the lollipops are partially dissimilar because their heads are partially dissimilar, and their heads are partially dissimilar because their colors and tastes are wholly dissimilar. But what kinds of things are colors and tastes, and how do they compare to such things as sticks and heads? This question can now be given (at least) two different answers. Either:

1. The colors and tastes of the lollipops are like (particular) properties: they are the sorts of things that characterize the lollipops (and their sticks and heads), but not vice versa.

4 Trope-like entities were posited also by some of Williams’s contemporaries, including: Strawson (1959), Geach (1961), Küng (1967), and Wolterstorff (1970) (for more examples cf. Mulligan et al. 1984, 293).
2. The colors and tastes of the lollipops are \textit{like} (abstract) substances: they are just like the lollipops (and their sticks and heads), only “thinner” or “more diffuse” (to use Williams’s own words).

A closer look at the trope literature reveals a tendency among the trope proponents to treat their posits \textit{either} as primarily property-like \textit{or} as primarily substance-like, although this choice is very seldom made explicit.\textsuperscript{5} Williams, first, seems to think of his tropes primarily in the substantial sense. He writes (1997[1953], 114):\textsuperscript{6}

‘Harlac’ [i.e., the color of lollipop No. 1], for example, is not to be taken as an abbreviation for the description, ‘the color component of Heraplem’ [i.e., Lollipop No. 1]. In a real situation like the one we are imagining, ‘Harlac’ is defined ostensively, as one baptizes a child or introduces a man, present in the flesh; the descriptive phrase is only a scaffolding, a temporary device to bring attention to bear on the particular entity being denoted, as a mother of twins might admonish the vicar, ‘Boadicea is the cross-looking one’. Heraplem and Boanerp [i.e., Lollipop No. 2] are partially similar, then, not merely because the respective gross parts Paraplete and Merrinel (their sticks) are wholly similar, but also because their respective fine parts, Hamis and Borcas (their ‘shapes’), are wholly similar – all this without prejudice to the fact that Hamis is numerically as distinct from Borcas, to which it is wholly similar, and from Harlac, with which it is conjoined in Heraplem, as Harlac is from Bantic [i.e., the color of Lollipop No. 2] to which it is neither similar nor conjoined, and as the stick Paraplete is from the stick Merrinel, and as the whole lollipop Heraplem, is from the whole Boanerp.

Mulligan et al. 1984, on the other hand, treat their posits primarily as kinds of properties. \textit{Pace} Williams they argue that the correct (in fact the only) way to refer to tropes is by way of expressions such as “the $\phi$-ness of $x$” (or, possibly, “$x$’s $\phi$-ness”) and that tropes are property-like in the sense that they are essentially \textit{of} some object, and in that they are \textit{ways} objects are (cf. also Heil 2003, 126f.).

That one’s choice of model for the trope makes more than a mere verbal difference has been argued by both Chrudzimski (2002) and Levinson (1980, 2006). According to Chrudzimski, this is because tropes understood as properties (but not tropes understood as “thin” substances) may serve as the world’s truthmakers (in the sense imagined by Mulligan et al.) whereas tropes understood as substances (but not tropes understood as properties) are suitable for the role of that from which both concrete particulars and abstract universals can be constructed. And according to Levinson 1980, it is because although tropes understood as substances (which he calls “qualities”) can be particularized, tropes understood as properties cannot. For, he argues, though the bit or portion of quality-stuff belonging to an object will in a sense be its private possession, the same is not true of properties. Properties, understood as conditions which the objects are in, just cannot be likewise sub-divided. In his 2006, Levinson goes one step further and argues that not only can tropes not be conceptualized as properties, they cannot be conceived of as qualities either, because (ibid., 564):

\begin{itemize}
  \item But cf. Loux (forthcoming) and Garcia (forthcoming), for an explicit classification of trope proponents into those whose posits are “tropes” (i.e., trope-\textit{properties}) and those whose posits are “tropers” (i.e., trope-\textit{substances}).
  \item Evidence of the confusing way in which tropes are introduced in the literature is given by the fact that Chrudzimski 2002, who is one of the very few who has explicitly discussed the distinction between tropes as properties and tropes as substances (in order to be able to criticize trope theory), interprets Williams rather as a proponent of the view that tropes are \textit{like} properties.
\end{itemize}
...the supposition of qualities, i.e., abstract stuffs as distinct from properties, i.e., conditions, is ontologically extravagant and conceptually outlandish – one cannot seriously propose that there are abstract stuffs, things just like familiar material stuffs except that they are abstract – there are thus no qualities, and hence, no tropes.

Whether or not one accepts Levinson’s pessimistic conclusion, it is in any case clear that the trope-theorist’s choice of model for her basic posits will make some difference to her theory. So for instance does it seem likely that a trope theorist who takes tropes to be like properties will be under added pressure to distinguish particulars from universals without thereby (and question-beggingly) distinguishing particulars from properties (cf. Ehring 2011, 19ff.). Likewise, the question whether or not tropes depend for their existence – and in what sense they do so – on the objects to which they belong, seems to admit of different answers depending on what one takes tropes to be like (cf. e.g., section 2.2 and 4 below).

2.2 Trope Individuation

Although it may sometimes sound as if trope theorists individuate their tropes with reference to the objects that “have” them (cf. especially Mulligan et al. 1984) this is probably not an account of trope individuation that survives closer scrutiny. Not only would it mean excluding already from the outset (and necessarily) the possibility of so-called “free-floaters”, i.e., tropes that exist independently of any object whatsoever. More seriously, if you (like the majority of the trope theorists, cf. 4 below) take concrete particulars to be bundles of tropes, your account of trope individuation will be circular (Schaffer 2001, 249; Ehring 2011, 77). Trope individuation has therefore been taken by the proponents of tropes, either as something primitive and not further analyzable, or as analyzable in terms of spatiotemporal position. On the latter view, more precisely, tropes have been taken to obey the following principle (Schaffer 2001, 249; Campbell 1990, 53f.):

Spatiotemporal Individuation (SI): For all tropes \(a\) and \(b\) such that \(a\ ER b\), \(a \neq b\) iff \(a\) is at non-zero distance from \(b\)

The spatiotemporal account of trope individuation, first of all, is prima facie intuitive (Campbell 1990, 53). And the fact that adopting (SI) would seem to entail not having to accept what appears to be two empty possibilities – that of piling (the possibility of spatiotemporally coincident exactly similar tropes) and that of swapping (the possibility of (imperceptible and immediate) changing of position of two exactly similar tropes) – adds to its initial appeal (for more on piling and swapping cf. section 2.3 below). In spite of this, the majority of the trope theorists (Schaffer 2001 being one important exception) have opted instead for a primitivist view on trope individuation. Many different reasons have been cited in support of this choice. Probably the most influential is the following (Moreland 1985, 65 and Campbell 1990, 55f.):

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7 Even if tropes cannot be individuated with reference to the objects they (partly) constitute, tropes might still be such that they must belong to some (specific) object (a view promoted by e.g., Molnar 2003, 45f. and discussed by Schnieder 2004 and Cameron 2006. Cf. also sections 2.3 and (esp.) 4).

8 Not so if you are a substrate-trope theorist (cf. Martin 1980, Heil 2003). In that case, you have the option of letting the individuating “burden” be carried by the substrate (a view criticized by e.g., Mertz 2001).

9 ER = exactly resembles

10 Other reasons cited against (SI) include: (1) (SI) rules out as impossible the existence of enduring stationary and moving tropes, enduring time-travelling tropes, and tropes that extend over space without
**Reality-is-Not-Necessarily-Spatiotemporal:** Given (SI), trope individuation presupposes that there is a space-time in relation to which all tropes are individuated. But reality (or parts of reality) could be non-spatiotemporal. This possibility ought not to be ruled out from the outset.

Among proponents of (SI), this objection has occasioned two very different kinds of reactions. The first reaction (Schaffer 2001, 252) is to point out that the objection takes it for granted that no independent reason exists for rejecting the possibility of non-spatiotemporal existence. Not so, it is argued, for *naturalism* provides the proponent of (SI) with precisely such a reason. But to say this is, according to Campbell (1990, 54), a defender of the second sort of reaction, to hold a “dialectically impossibly weak position.” A preferable option is therefore instead to modify (SI) by allowing for non-spatiotemporal particulars that are individuated with the help of some analogue of the locational order or space (Campbell 1997[1981], 136).

### 2.3 Swapping, Piling, and Sliding

Whether and how there can be swapping, piling, and/or sliding, is a question that has occasioned much debate among both trope proponents and trope critics. Consider swapping first. According to the so-called “swapping argument” (first formulated by Armstrong 1989, 131-132, cf. also Schaffer 2001, 250f. and Ehring 2011, 78f.), if properties are tropes, two exactly similar tropes might swap places, without this making any difference whatsoever to anything in the world (a possibility which, given that we accept some kind of elatic principle according to which only what makes some difference is admitted as possible, must be considered empty). This objection has been put in terms of either object swapping (i.e., the two tropes swap object) or in terms of position swapping (i.e., the two tropes swap position). Armstrong formulates the objection in terms of object swapping, but, as Ehring has pointed out (2011, 79) the objection is strengthened if formulated in terms of position. For, note that to solve the problem of object swapping it is enough to add that tropes are “non-transferable” in the sense that they must belong to some specific object, a not uncommon view among trope proponents. This would however not solve the problem of position swapping, as two exactly similar objects, including the tropes they “have”, could then swap position with the same presumably problematic result.Appearances perhaps to the contrary, to accept (SI) does not block positional trope swapping immediately (Schaffer 2001, 250). (SI), as stated, is a principle about trope individuation that holds *intra*-worldly: within any given world, no two exactly similar tropes are at non-zero distance from each other. Swapping, on the other hand concerns what is possibly true (or not) of exactly similar tropes considered *inter*-worldly. As stated, therefore, (SI) neither does nor doesn’t preclude swapping. That is all very well, as there is one distinct possibility that it would be unfortunate if our principle of individuation did block, namely the possibility – called *sliding* – that this red-trope *here* could have been *there* had the wind blown differently (Schaffer 2001, 251). To get the desired result (i.e., to having any spatial parts (all of which (according to Ehring 2011, 25ff.) are possible kinds of entities); (2) Given (SI), the relation between tropes and their location amounts to either complexity *in* the trope (which is independently problematic, cf. section 2.4) or it amounts to the collapse of distinct yet exactly similar tropes and of distinct yet co-localized tropes (Moreland 1985, 39ff.); (3) (SI) entails a problematically substantial notion of space-time (Schaffer 2001: 251); (4) (SI) appear to provide us with the means to individuate tropes only if we assume that such a principle of individuation is already in place (Stout 1952, 76-77).

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11 Campbell later (1990, 56) abandons this idea in favor of an outright rejection of (SI), mainly because he thinks the result would be individuating conditions for non-spatiotemporal individuals that would be too formal to carry conviction. Schaffer (2001, 252) in his response, confesses to not caring “whether the number of angels dancing on the heads of nonspatiotemporal pins has been counted over-formally or not.”

12 That the swap makes *no* difference has been challenged by LaBossiere 1993, 262.
block swapping while allowing for sliding), Schaffer has therefore suggested (ibid, 253), trope theory with 
(SI) should be supplemented with a Lewisian counterpart theory for transworld identity. With this addition 
in place, sliding is made possible, because (ibid.):

On the counterfactual supposition of a shift in wind, what results is a redness exactly like the actual 
one, which is in perfectly isomorphic resemblance relations to its worldmates as the actual one is to 
its worldmates, with just a slight difference in distance with respect to, e.g., the roundness of the moon.

Yet swapping is disallowed. Because (ibid.):

...the nearest relative of the redness of the rose which is here at our world would be the redness still here ‘post-swap’. The redness which would be here has exactly the same inter- and intraworld 
resemblance relations as the redness which actually is here, and the same distance relations, and hence is a better counterpart than the redness which would be there.

Ehring disagrees. He argues, first, that on the present suggestion it is really the counterpart theory which 
does all the work, which means that if primitivism is likewise combined with a counterpart theory, it is 
equally well equipped to block swapping (2011, 81). But, second, there is reason to think that swapping 
should after all be accepted. For, if sliding is possible, then there are circumstances in which a series of 
(possible) slidings constitute one case of swapping (ibid., 81-85).

Another argument against tropes – later remodeled into an argument for trope theory with (SI) (originally 
formulated by Armstrong (1978, 86), cf. also Simons (1994, 558) and Schaffer (2001, 254, fn. 11)) is the 
so-called piling objection. According to this objection, if properties are tropes, the arguably empty 
possibility that one and the same concrete particular could exemplify more than one trope belonging to 
the same exact similarity class must be admitted as genuine. Given (SI), this possibility is however 
immediately blocked. That this should be taken to count in favor of (SI) has however been questioned. For, 
according to Ehring (2011, 87ff.), there is a kind of piling – “pyramiding” – that would seem to represent 
a genuine possibility, the possibility of piling in general ought not to be ruled out. Against this, Schaffer 
(ibid.) has argued that although pyramiding (an example being a 5kg object consisting of five 1kg tropes) is 
not as clearly objectionable as more problematic kinds of piling (called “stacking”) it ought nevertheless to 
be rejected. Most importantly, this is because pyramiding faces a serious problem with predication (if 
admitted, it will be true of the 5kg object that “It has the property of weighing 1kg”). Against this, Ehring 
(ibid., 88-91) has pointed out that to say truly of the 5kg object that “It has the property of weighing 1kg” is 
at most pragmatically odd, and that, even if this oddness is regarded as unacceptable, to avoid it would not 
require the considerable complication of one’s theory of predication imagined by Schaffer. The discussion 
continues, which means that trope individuation is one of those issues on which trope proponents have so 
far failed to reach a clear consensus.

2.4 Complex or Simple?

More or less all trope proponents agree that tropes are fundamental *sui generis* entities which (alone or 
together with other kinds of fundamental entities) make up reality and all of its contents. More specifically, 
trope theorists agree that to be a trope is to be a simple – in the sense of not further (ontologically) 
analyzable – entity, and that this means that to be a trope, among other things, is not compatible with, or the 
same as, to be a state of affairs (i.e., a complex consisting of a substrate instantiating a universal). However, 
according to Daly, in a much discussed paper (1997[1994]), tropes cannot be distinguished from states of 
affairs in the way imagined by the theory’s proponents. Rather, to say of the trope that it is an *abstract 
particular* is to characterize it in a way that is compatible both with it being a (simple) trope and with it 
being a (complex) state of affairs. And since no reason exists for holding that there are tropes that is not 
also a reason for thinking that there are states of affairs, no reason exists for holding that there are tropes, 
period. Not surprisingly, trope proponents disagree. Tropes can be distinguished from states of affairs 
because, pace Daly, some arguments for the existence of tropes are not arguments for the existence of
states of affairs.\footnote{13} And even if it were to turn out that everything accountable for in terms of tropes can be explained also in terms of states of affairs, there would still be \textit{theoretical} reasons for preferring tropes over states of affairs (including Ockhamist reasons as well as reasons having to do with the fact that the trope proponent does not have to posit (mysterious) universals).

But the view that tropes are simple sui generis entities, critics have argued, is \textit{also} seriously problematic (cf. Armstrong 2005, 310; Brownstein 1973, 47; Hochberg 2001, 178-179 and 2004, 39; Moreland 2001, 70). For, in Hochberg’s words (2004, 39):

Let a basic proposition be one that is either atomic or the negation of an atomic proposition. Then consider tropes $t$ and $t^*$ where “$t$ is different from $t^*$” and “$t$ is exactly similar to $t^*$” are both true. Assume you take either “diversity” or “identity” as primitive. Then both propositions are basic propositions. But they are logically independent. Hence, they cannot have the same truth makers. Yet, for…trope theory /…/ they do and must have the same truth makers. Thus the theory fails.

And in Armstrong’s (2005, 310):

Our selected simple trope, call it $a$, is numerically different from the others, but this numerical difference \textit{varies independently} from its similarity or dissimilarity to these other tropes in the class. But how does this simple trope $a$ support, how does it act as one side of the truthmaker for, all these different relationships?

Tropes cannot be simple, is the consensus among the theory’s critics, because then they cannot ground both truths about similarity and distinction. And they cannot be complex, as that would mean that they collapse into states of affairs. Therefore, tropes do not exist. This argument has met with various reactions from trope proponents. According to Robb (as quoted by Armstrong 2005, 310), truthmaker theory explicitly disavows that there is a one-one correlation between truths and truthmakers. But if there is not, what prevents several different and logically independent truths from being made true by the same tropes? What the objection at most manages to demonstrate, in other words, is that the trope proponent is forced to deny that logically independent basic propositions must have distinct truthmakers, not that this denial is any way impossible (cf. Mulligan et al. 1984, 296 for an explicit denial of precisely this principle). And for someone like Ehring (2011, 184ff.), who accepts a version of the trope theory according to which “sameness” of tropes is understood in class-primitivist terms (which means that resemblance between tropes is not grounded \textit{in} the tropes) the objection completely misses the mark.

\section*{3. Tropes and Universals}

Properties understood as universals were originally introduced as a solution to the so-called “problem of universals”, which is the problem of how to account for the fact that distinct entities can nevertheless be the same. Universals provide a straightforward solution to that problem. Two things can have one thing in

\footnote{13} True, trope proponents admit, there are explanatory tasks which can be equally well solved with recourse to states of affairs. But this does not mean that trope theory should be abandoned. For, there are also explanatory tasks which solution \textit{requires} the existence of tropes. Examples supposedly include e.g., the task of solving the problem with the Bradley regress (cf. section 4), the task of accounting for qualitative persistence in a way that can be used to makes sense of causation (section 5.1), and the task of making sense of perception (section 5.3)). For more reasons to prefer tropes over states of affairs, cf. Mulligan 2006 (discussed in Hochberg 2011).
common, because there is one thing – the universal – which characterizes each of them individually. The trope theorist (at least the trope theorist who does not accept also the existence of universals) does not have recourse to entities that can be identical in distinct instances and must therefore come up with a slightly more complicated solution to this problem. The “standard” solution proposed (in slightly different versions) by the majority of the trope proponents is to say that two objects are the same if (some of) the tropes characterizing them belong to the same similarity class, and that membership in the same similarity class is decided by the (primitive) nature of the tropes involved (cf. e.g., Williams 1997[1953], 117-118 and Campbell 1990, 31f.).

If resemblance is to be able to do the work for which it is introduced, critics have however pointed out, the trope-theorist’s account must be supplemented with an account of what more precisely exists when exact resemblance does. Especially since, in order to be able to partition the set of tropes into mutually excluding and non-overlapping classes, exact resemblance must be reflexive, transitive, and symmetric (it must be an equivalence relation).14 But this makes exact resemblance into a something to which (at least) a number of formal properties can be attributed. What sort of entity is that? Trope-theorists have answered this question in one of two ways:15 exact resemblance is a “pseudo-addition” or it is a (relation)trope. Both suggestions have been rejected by the theory’s critics.

That exact resemblance is a “pseudo-addition” (a view defended by e.g., Campbell 1990, 37f. and Williams 1963, 608) is supposed to follow from the fact that it is an internal relation. For, as such, it supervenes on its terms, which means that once the terms exist, so must the relation. This is why, it is argued, we can say that although \(a\) exactly resembles \(b\) as soon as \(a\) and \(b\) exist, this does not entail that the existence of \(a\) and \(b\) brings with it the added ontological commitment to something extra called “exact resemblance”. Rather (Armstrong 1989, 56):

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\text{...exact resemblance is an ontological free lunch. The truth-maker, the ontological ground, that in the word which makes it true that the tie holds, is simply the resembling things. More precisely ... the ontological ground is the particularized nature of these things. The tie is not something extra.}
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Against this, Daly (1997[1994], 152) objects that the move from the internality of exact resemblance to the claim that it is in no “real” addition is blatantly ad hoc. Perhaps in order to avoid Daly’s charge, some trope-theorists have suggested that exact resemblance be regarded instead as a (relation-)trope. This suggestion has however been rejected by the majority of the theory’s critics primarily, because it supposedly leads to a version of Russell’s famous resemblance regress (first formulated in his 1997[1912], 48, cf. also Küng 1967). Here is the argument in Daly’s words, and adapted to the trope theoretical framework (1997[1994], 149):

Consider three concrete particulars which are the same shade of red … each of these concrete particulars has a red trope – call these tropes \(F\), \(G\), and \(H\) – and these concrete particulars exactly resemble each other in colour because \(F\), \(G\), and \(H\) exactly resemble each other in colour. But it seems that this account is incomplete. It seems that the account should further claim that resemblance tropes hold between \(F\), \(G\), and \(H\). That is, it seems that there are resemblance tropes

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14 That resemblance (and compresence) is an equivalence relation is however questioned by Mormann 1995.

15 A third possible answer is that exact resemblance is a non-relational tie. But this view has not been explicitly defended by any trope proponent and it has been criticized by trope critics (Hochberg (1988, 189f.) argues that this view lends all of its support from a supposed analogy with the view that exemplification (in states of affairs) is a non-relational tie, but that this analogy – for several reasons – fails).
holding between the members of the pairs $F$ and $G$, $G$ and $H$, and $F$ and $H$ … Let us call the resemblance tropes in question $R_1$, $R_2$, and $R_3$ … each of these resemblance tropes in turn exactly resemble each other. Therefore, certain resemblance tropes hold between these tropes … we are launched on a regress.

In response to this objection, the majority of the trope theorists have argued that the regress, at least if generated in a (standard) trope context, is not vicious. At least two reasons for thinking so have been proposed. According to Campbell (1990, 35-36), the regress is benign because “[i]t proceeds in a direction of greater and greater formality and less and less substance”. As it may be hard to see why one should think that there is any difference in “substantiality” between the resemblances added at each stage of the regress (Daly 1997[1994], 151-152), many trope theorists have however preferred the view that the regress is benign because of the “pattern of dependence” it instantiates. More precisely, because according to the standard version of trope theory, resemblance supervenes on the (primitive) nature of the resembling tropes, the later terms in the regress will depend for their existence on the earlier ones, which means that it is because the tropes in the first step of the regress are the same that the regress exists, and not the other way around (cf. e.g., Campbell 1990, 37 and Maurin 2002, 78ff.).

But what about non-standard versions of trope theory? If you think that tropes are the same because they belong to the same natural class, where natural-class-membership is primitive and not further analyzable, the problem simply does not arise (Ehring 2011, 175ff.). But if you accept instead a kind of Resemblance Nominalism (defended for ordinary concrete particulars by Rodriguez-Pereyra 2002), and hold that resemblance is what provides the resembling tropes with their inherent nature, you are in serious trouble. For then the regress which your view entails will instantiate a pattern of dependence which (at least if what is argued above is accepted) makes the regress vicious. Perhaps for that reason, resemblance nominalism has no explicit proponents among the trope theorists.

### 4. Tropes and Concrete Particulars

On no version of the trope theory are there (ontologically unstructured) concrete particulars besides the tropes. Concrete particulars are rather (wholly or partly) made up from tropes, and their nature must therefore be separately accounted for. Some trope theorists (such as Martin 1980 and Lowe 2006) hold that concrete particulars are constituted by (at least) a substrate and an appropriate number of tropes, such that the tropes are instantiated in the substrate. But as this view is incompatible with the (standard) view that there is nothing but tropes, this is not the most commonly adopted alternative. On the standard view, concrete particulars are understood instead as bundles of mutually compresent (collocated, combined) tropes.

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16 Whether this is the best way to distinguish vicious from benign regresses can be contested (cf. Daly 1997[1994], 151). For more on infinite regresses, cf. e.g., Gratton 2010.

17 Whether Heil 2003 thinks that concrete particulars are made up from tropes is however unclear. Heil argues (p. 108): “A substance [rather than a substrate]-attribute theory holds that particular objects are substances possessing various properties… On such a view, properties and relations do not make up objects in the way parts of a watch make up the watch. Rather, properties are possessed by objects.” If we interpret Heil as saying that, besides tropes, the world consists of substances (not substrates) and that concrete particulars are constituted by substances in which tropes are instantiated, then his is (at least structurally) a variant of the so-called substrate-attribute view. However, as Heil repeatedly insists that tropes are ways substances are and not ingredients or components of the concrete particular (cf. e.g., 2003, 12-13), this may not be the correct interpretation of his views.
Both the substrate-attribute view and the bundle view have been criticized for generating a vicious infinite regress (of compresences or of instantiations). Just as in the case of resemblance (cf. section 3 above), the trope theorist owes us an account of the nature of that which is supposed to have the power to turn what are many abstract tropes into one concrete thing. And, just as in the case of resemblance, if compresence (or instantiation) is understood as yet another trope, we end up in infinite regress. In the case of resemblance, as we have seen, trope theorists have argued that this regress is unproblematic because, as resemblance is internal to its terms and so exists necessarily given their existence, the dependence pattern instantiated by the regress is of the benign kind. That the problem with the compresence (or instantiation) regress could be likewise dismissed, critics have argued, is however highly unlikely. For, if what turns what are many tropes into one concrete particular is internal to and dependent on those same tropes, the arguably genuine possibility that the tropes which happen to constitute the concrete particular could exist and not constitute that concrete particular is ruled out from the outset. Note that we need to distinguish between two sorts of possibilities here. First, there is the possibility that what happens to constitute the concrete particular, could exist and constitute a distinct concrete particular. Whether the former is a genuine possibility is highly disputed. That the latter is possible seems much more likely. If compresence (or instantiation) is internal to its terms, both of these possibilities are ruled out as impossible. But to hold, instead, that compresence is external to and independent of its relata, means ending up in a regress which arguably instantiates a dependence-pattern of the vicious-making kind. For now, it seems, in order for the concrete particular to exist its primary constituents must be compresent, and in order for its primary constituents to be compresent, compresence and the primary constituents must be compresent, and…, etc. ad infinitum.

The two most common trope theoretical responses to this problem have been to either insist that the constituents of the concrete particular are internally unified after all, or to argue that although they are externally unified, compresence (or instantiation) if correctly ontologically characterized, can turn the constituents of the concrete particular into one unified thing without infinite regress. Other suggestions include e.g., the radical proposal that the regress is benign because it is infinite (cf. Orilia 2009 and Swoyer and Orilia 2011). Cf. also the holistic view proposed by Schneider 2002 (inspired by Bacon 1995). For a more comprehensive list of the different solutions proposed in the literature (whether trope theoretical or not) cf. Maurin 2012.

Another way in which one might think that our modal intuitions could be explained is if one holds that, although the constituents of this concrete particular cannot exist and not constitute this concrete particular,
Those unwilling to accept that the bundling of tropes is in any way necessary have suggested a number of alternative ways out of the Bradleyan conundrum, all of which depend on spelling out the nature of compresence (or instantiation) in a more appropriate way. Robb 2005 suggests that no regress is generated because the tropes that constitute the concrete particular are really structural. Mertz 1996 argues that tropes have two aspects to them – one being relational – and that it is this fact which stops the regress from enfolding. Ehring 2011, proposes that the problem is solved as soon as we realize that the relation we add to the aggregate in order to turn it into a bundle is “self-relating”. Maurin 2010 (cf. also Betti and Wieland 2008) suggests that, in being a relation, compresence is such that it depends internally on its relata although the relata do not likewise depend for their existence on compresence, and that it is this which stops the regress from enfolding (compare this idea of asymmetric dependence with the asymmetric dependence introduced in Simons’ “nuclear” theory of compresence above). A version of this suggestion adapted to a framework in which concrete particulars are understood as substrates instantiating tropes and universals has been suggested by Lowe 2006. On his approach, what makes the many constituents of the state of affairs $F_a$ into one thing, is the existence of the trope $f$ which is such that it, if it exists must belong to a specific substrate $s$ and which is such that it, if it exists, is what it is because it is an instance of the universal $F$-ness (where neither the substrate $s$ nor the universal $F$-ness are such that they depend for their existence on the existence of $f$). On all of these views, the unity of the concrete particular is arguably secured, without vicious infinite regress, and without having to give up what appears to be genuine possibilities like the possibility that the primary constituents of the concrete particular might exist “disunified”. 21

5. Trope Applications

If you accept the existence of at least some tropes, proponents of trope theory have repeatedly argued, you have the means available to solve or to dissolve a number of serious problems, not just in metaphysics, but in philosophy generally. In what follows, the most common trope-applications proposed in the literature are set out.

5.1 Tropes and Causation

In most texts on tropes it is stated that one important reason for thinking that there are tropes is the role tropes play in causation (a claim justified by statements such as: “It is not the stove, the whole stove, that burns you … It is the temperature that does the damage” (Campbell 1990, 23)). These claims are however seldom further elaborated. Exceptions to that rule include e.g., Denkel 1996, who suggests that causation (including both the causal relata and the causal relation) is a structural trope, Molnar 2003, Heil 2003 and (at one point) Campbell (1990, 117ff.), who argue that because tropes are particular powers, they are entities apt to produce effects. The most detailed trope-theoretical account of causation is however provided by Ehring 1997, who argues that trope-theory can provide the only suitable actors for the role of causal relata (and causal mechanisms), and that this, if accepted, means that causation supplies the proponent of tropes with one of her best arguments for preferring trope theory over rival views. In very short summary, the argument for this conclusion runs as follows: (1) To solve the preemption problem causation must involve a singularist component – a mechanism – that exist between cause and (direct) effect, and which is

some counterparts of the constituents in question surely can constitute a counterpart of the concrete particular (for a critical discussion of this option, cf. Maurin 2011).

21 Also, if what turns what are many into one (in general, i.e., not just in the context of a trope theory) must be such that it must relate what it specifically does relate, there is reason to believe that it must be a trope (an abstract particular), in which case the regress problem can be turned into an argument for the existence of tropes (cf. e.g., Maurin 2011).
best understood in terms of qualitative persistence (cf. also Wilson 2009). (2) To make sense of property persistence it is not merely to make sense of a situation in which e.g., a green apple does not change color. For, the greenness at \( t_1 \) could have been replaced by another property of the same type during the period between \( t_1 \) and \( t_2 \), which means that, although a case of property \textit{type} persistence, this is nevertheless not a case of property persistence period and, hence, it is not a case of the type of persistence we need to be able to account for causation and causal processes. (3) The distinction between property type persistence and property persistence (period) can be explained if properties are tropes but not if they are universals nor, for that matter, if they are states of affairs (which Ehring tries to demonstrate with the help of a number of thought experiments). Therefore, causation, and especially property persistence, provides us with a strong reason for thinking that tropes exist.

5.2 Tropes and Issues in the Philosophy of Mind

That tropes can play an important role for the (dis)solution of various well-known problems in the philosophy of mind has been forcefully argued by a comparatively large number of trope proponents (cf. Gozzano and Orilia 2008 for a compilation of some recent texts on the subject). Not surprisingly, those who think that tropes serve as causal relata in causation generally also believe that tropes play that role in mental physical causal transactions. But even among those who do not think that tropes are suitable as causal relata, there are many who believe that tropes nevertheless play an important role in mental-physical causal transactions. For, it is argued, only if we have recourse to tropes can we explain how specifically mental causes can be \textit{of relevance} to the production of specifically physical effects in a physically closed and non-over-determined universe. More precisely, if properties in the sense of tropes are distinguished from properties in the sense of similarity-classes of tropes, we can identify the causally relevant mental properties (meaning: tropes) with physical ones, yet we can distinguish “the mental” (meaning: the similarity class of mentally similar tropes) from “the physical” (meaning: the similarity class of physically similar tropes). Hence, if \( A \) causes \( B \) in virtue of its mental property, then \( A \) causes \( B \) in virtue of (trope) \( t \), which is mental (because it belongs to a similarity class of mentally similar tropes) but which is also physical (because it belongs to a similarity class of physically similar tropes). Slightly different versions of this suggestion have been put forth by e.g., Robb 1997, Martin and Heil 1999, Heil and Robb 2003 (for a hybrid version cf. Nanay 2009). But the suggestion has also been criticized. According to Noordhof (1998, 223) the suggestion fails because it does not respect the “bulge in the carpet constraint” in that the question which was initially ambiguously asked about properties can now be unambiguously asked about tropes: Is it in virtue of being mental or in virtue of being physical that the trope is causally relevant to the effect? Gibb 2004 has complained that the suggestion fails because one cannot after all combine a trope monism with a type dualism. One argument for this conclusion is that if it is true, as Robb 2001 claims in a response to Noordhof, that the suggestion does not violate the bulge in the carpet constraint because properties (i.e., tropes) do not have aspects which means that it does not make sense to ask if it is in virtue of being mental or physical that the trope was causally relevant, then, \textit{because} the tropes do not have aspects, their (simple and primitive) nature cannot be such that they belong to two distinct and different similarity classes (for more reasons against the trope-theoretical suggestion cf. MacDonald and MacDonald 2006).

5.3 Tropes and Perception

Another important reason for thinking that tropes exist, it has been proposed, is the role tropes play in perception. That what we perceive are the qualities of the things rather than the things themselves seems plausible (Williams, 1997[1953], 123; Campbell 1997[1981], 130) and this view, if accepted, means that some of the most notorious problems for so-called direct realism about perception disappear (cf. Mulligan et al. 1984, 300, criticized in Rodriguez-Pereyra 2002, 93-94). That the qualities we perceive are tropes rather than universals or instantiations of universals (states of affairs) is, according to e.g., Lowe, a matter that can be determined with reference to our experience. Lowe argues (1998, 205, cf. also Lowe 2008, Mulligan et al. 1984 and Mulligan 1999):

\[W\]hen I see the leaf change in colour – perhaps as it turned brown by a flame – I seem to see something cease to exist in the location of the leaf, namely its greenness. But it could not be the
universal greenness which ceases to exist. My opponent must say that really what I see is not something ceasing to exist, but merely the leaf’s ceasing to instantiate greenness, or greenness ceasing to be ‘wholly present’ just here. I can only say that the suggestion strikes me as being quite false to the phenomenology of perception. The objects of perception seem, one and all, to be particulars – and, indeed, a causal theory of perception (which I myself favour) would appear to require this, since particulars alone seem capable of entering into causal relations.

According to some proponents of tropes, moreover, perception is a reason to think that tropes exist even if you are a representationalist about perception. For, according to Nanay 2012, then you have the resources necessary to deal with at least two important objections often put to the representationalist view; that it means rejecting that all perception is of something particular, and that it cannot adequately account for the phenomenon of demonstrative thought.

5.4 Tropes and Semantics

That language furnishes the trope theorist with solid reasons for thinking that there are tropes has been indicated by a number of trope theorists and it has also been forcefully argued, especially by Moltmann in a number of papers (cf. also Mertz 1996, 3-6). Taking Mulligan et al. 1984 as her point of departure, Moltmann argues that natural language contains a number of phenomena whose semantic treatment is best spelled out in terms of an ontology that includes tropes.

Nominalizations, first, may seem to point in the opposite direction. For, in the classical discussion of properties, the nominalization of predicates such as is wise into nouns fit to refer, has been taken to count in favor of universal realism. A sub-class of nominalizations – such as John’s wisdom – can, however, be taken to speak in favor of the existence of tropes. This is the sort of nominalizations which, as Moltmann puts it, “introduce ‘new’ objects, but only partially characterize them” (2007, 363). That these sorts of nominalizations refer to tropes rather than to states of affairs, she argues, can be seen once we consider the vast range of adjectival modifiers they allow for, modifiers only tropes and not states of affairs can be the recipients of (cf. esp. Moltmann, 2009, 62-63; cf. also Moltmann 2003).

Bare demonstratives, next, especially as they occur in so-called identificational sentences, provide another reason for thinking that tropes exist (Moltmann 2011). In combination with the preposition like – as in Turquoise looks like that – they straightforwardly refer to tropes. But even in cases where they arguably do not refer to tropes, tropes nevertheless contribute to the semantics of sentences in which they figure. In particular, tropes contribute to the meaning of so-called identificational sentences like ‘This is Mary’ or ‘That is a beautiful woman’. These are no ordinary identity statements. What makes them stand out is the exceptional neutrality of the demonstratives in subject position. According to Moltmann, these sentences are best understood in such a way that the bare demonstratives that figure in them do not refer to individuals (like Mary), but rather to perceptual features (tropes) in the situation at hand (a view that depends on taking tropes as the objects of perception, cf. 5.3 above). Identificational sentences, she claims, involve precisely the identification of a bearer of a trope via the denotation (if not reference) of a (perceptual) trope.

Comparatives – like John is happier than Mary – finally, are according to the received view, such that they refer to abstract objects that form a total ordering (so-called degrees). According to Moltmann 2009, a better way to understand these sorts of sentences is with reference to tropes. John is happier than Mary should hence be understood as John’s happiness exceeds Mary’s happiness. This view is according to Moltmann preferable to the standard view, because tropes are easier to live with than “abstract, rarely explicit entities such as degrees or sets of degrees” (ibid, 64).

5.5 Tropes in Science
Discussions of what use can be made of tropes in science can be found scattered in the literature. Examples include Harré’s 2009 discussion of the role of tropes in chemistry and Nanay’s 2010 attempt to use tropes to improve on Ernst Mayr’s “population thinking” in biology. Most discussions have however been focused on the relationship between tropes and physics (cf. e.g., Kuhlmann et al., 2002). Most influential in this respect is Campbell’s field-theory of tropes (defended in his 1990: chapter 6; cf. also Von Wachter 2000) and Simons’ 1994 “nuclear” theory of tropes and the scientific use he tentatively makes of it (cf. also Morganti 2009 and Wayne 2008).

According to Campbell, the world is constituted by a rather limited number of field tropes, which, according to our (currently) best science ought to be identified with the fields of gravitation, electromagnetism, and the weak and strong nuclear forces (plus a space-time field). Standardly, these forces are understood as exerted by bodies that are not themselves fields. Not so on Campbell’s view. Instead, matter is thought of as spread out and as present in various strengths across a region without any sharp boundaries to its location. What parts of the mass field we choose to focus on will be to a certain degree arbitrary. A zone in which several fields all sharply increase their intensity will likely be taken as one single entity or particle but given the overall framework, individuals of this kind are to be viewed as “well-founded appearances” (1990: 151).

Campbell’s views have been criticized, among others by Schneider 2006. According to Schneider, the field ontology proposed by Campbell (and Von Wachter) fails because the notion of a field with which they seem to be working, is not mathematically rigorous.22 Morganti 2009 who, just like Campbell, wants to identify the tropes with actual entities described by quantum physics, finds several problems with the identifications actually made by Campbell, and proposes instead that we follow Simons and identify the basic constituents of reality with the fundamental particles, where the basic particles are understood as bundles of tropes. By taking the basic properties described by the Standard Model as fundamental tropes, is the suggestion, the constitution of particles out of more elementary constituents can be readily reconstructed (possibly by using the formal sheaf-theoretical framework proposed by Mormann 1995, or the algebraic framework suggested by Fuhrmann 1991).

5.6 Tropes and Issues in Moral Philosophy

Relatively little has so far been written on the topic of tropes in relation to issues in moral philosophy and value theory. Two things have however been argued. First, that tropes (and not, as is more commonly supposed, objects or persons or states of affairs) are the bearers of final value. Second, that moral non-naturalists (who hold that moral facts are fundamentally autonomous from natural, or scientific, facts) must regard properties as tropes in order to be able to account for the supervenience of the moral on the natural. That tropes are the bearers of (final) value has been argued by a number or trope theorists. To say that what we value are the particular properties of things, they have pointed out, is prima facie intuitive (cf. Williams 1997[1953], 123). Also, whereas concrete particulars can be the simultaneous subjects of conflicting evaluations, this is not true of tropes, which would seem to make tropes especially suited for the job as value-bearers (Campbell 1997[1981], 130-131). Although seemingly attractive, the view that tropes are the bearers of (final) value has received surprisingly little attention in the (non-trope theoretical) value-theoretical community. Two exceptions to this rule are Rabinowicz et al. 2003 and Olson 2003. According to Rabinowicz et al., first, though tropes can be the bearers of final value, they cannot be the only such bearers, mainly because different pro-attitudes are fitting with respect to different kinds of valuable objects. But, Olson responds, this conclusion follows only if we assume that, to what we direct our evaluative

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22 Schneider agrees that couching your ontology in terms of (mathematical) bundles and cross-sections (i.e. fields) is productive. The only problem, from the perspective of trope theory, is that the best way to achieve all of that while staying mathematically adequate is in terms of an ontology that does not include anything that can in any obvious sense be categorized as tropes (cf. esp., her 2006, 11).
attitude is indicative of where value is localized. But final value, Olson argues, should be understood strictly as the value which something has for its own sake, which means that if e.g., a person is valuable because of her courage, then she is not valuable for her own sake but is valuable, rather, for the sake of one of her properties (i.e., her tropes), which means that although the evaluative attitude may well be directed at a person or a thing, the person or thing is nevertheless valued because of, or for the sake of, the tropes which characterize it.

Non-naturalists, next, are often charged with not being able to explain what appears to be a necessary dependence of moral facts on natural facts. Normally, this dependence is explained in terms of supervenience, but in order for such an account to be compatible with the basic tenets of moral non-naturalism, it has been argued, this supervenience must, in turn, be explainable in purely non-naturalistic terms (for an overview of this discussion cf. Ridge 2003). According to Shafer-Landau 2003 (as interpreted by Ridge 2007) this problem is solved if moral and physical properties in the sense of kinds, are distinguished from moral and physical properties in the sense of tokens, or tropes. For then we can say, in analogy with what has been suggested in the mental-physical case (cf. 5.2 above), that although (necessarily) every moral trope is constituted by some concatenation of natural tropes, it does not follow from this that every moral type is identical to a natural type. This suggestion has been criticized by Ridge (2007). According to Ridge, the proposal fails because the analogy with the mental-physical case breaks down. From what he says, however, it seems as if Ridge thinks that tropes should be understood as of a certain nature because of their membership in this or that similarity class, which would appear to contradict at least the standard view of tropes.

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