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**Tropes with a Kantian Flavor. A Solution to Russell’s Regress.**

**Abstract:** This paper discusses one of the major problems for resemblance nominalism, posed by Bertrand Russell in 1911-12, and often referred to as Russell’s regress. It is the problem that resemblance must either be a universal, thus refuting a thorough nominalism, or must itself resemble other resemblances to count as a resemblance, which ultimately leads to an infinite regress of resemblances. I am going to discuss two solutions that have been proposed to this problem. I will then attempt to show in how far these are unsatisfactory, and propose my own solution which treats resemblance as a subject-relative phenomenon. My aim is to show that, on my account, there is no infinite regress and therefore no problem.

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1 **Basic notions**

The problem discussed in this paper, Russell’s regress (henceforth: RR), concerns a certain form of nominalism about universals. Nominalism, in this context, is a position which states that there actually are no universals; the entirety of nature consists only of particulars. A universal is roughly something that can exist in more than one place at the same time; a particular, in contrast, is something that never occupies more than one region of space at any given time. The idea of entities existing in more than one place at the same time may seem counter-intuitive at first glance, but it is actually pretty commonsensical upon closer inspection. For example, two billiard balls may be said to have the exact same color, e.g. a certain shade of red. So this particular shade of red can be found on both billiard balls simultaneously, and thus exists in two places at once. But the question arises what we actually mean by ‘the exact same’ in this very instance. Do we really mean that the particular color exists twice? To clarify this problem, we need to look at different ways of understanding ‘sameness’ or identity.
D.M. Armstrong, who claims to follow the eighteenth-century English philosopher Bishop Joseph Butler, differentiates between two understandings of identity: the loose and popular one and the strict one:

Suppose that you are in a zoo and that you see the backside of an elephant in an enclosure. But suppose that you are behind the enclosure and another spectator is at the front and is seeing the front of the elephant. We can properly say that you two are seeing the same elephant. At the same time, though, we would agree that each of you can only see different parts of that one elephant. So in this case talk of seeing the (very) same thing only amounts to talk of seeing different parts of the very same thing. I am inclined to think that when ‘the same’ or ‘the very same’ is used in a loose and popular sense, it always involves applying ‘the same’ to different parts of the same thing, where that last phrase ‘the same thing’ has the sense of strict identity. You and the other spectator see different parts of exactly the same, strictly the same, animal. (Armstrong 1989: 4)

So according to Armstrong, two entities $a$ and $b$ are called ‘identical’ in the loose and popular sense if they are different parts of a common whole. Strict identity on the other hand is something quite different. If there is exactly one thing, for which there are two ways of looking at or which has two different names, ‘$a$’ and ‘$b$’, then ‘$a$’ and ‘$b$’ refer to the same thing in the strict sense or the two ways of looking at concern strictly the same thing respectively (the whole elephant in Armstrong’s example). So the difference, in Armstrong’s terms, is that in the one case two parts of the same thing are identified (the loose and popular sense) whereas in the other case there is more than one perspective on, or more than one name for, one and the same thing (the strict sense).

Using the introduced terminology, we can now define a realist about universals as someone who believes that two entities existing in different regions of space at the same time can be strictly identical: “If, for instance, two different things have the same mass, then this must be taken strictly. One and the same thing, the mass, is a constituent of the two things.” (Armstrong 1989: 4) The multiple differently localized appearances of one and the same entity are called its instances.

Nominalists, on the other hand, believe that two entities existing in different regions of space at one time can never be identical in the strict sense, but only in the loose and popular one. But this in turn means that there must always be a common whole of which the two respective entities are parts. What could that common whole be? A typical suggestion is that the two ‘identical’ entities may be part of one and the same resemblance class. A resemblance class is a class $C$ which satisfies (at least) the criterion that for all $x \in C$ there
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is a \( x \neq y \in C \) such that \( Rxy \), where \( R \) is the relation of resemblance. Formally, resemblance is a similarity relation, satisfying the following two conditions:

\[
\forall x, y (Rxy \leftrightarrow Ryx) \quad \text{(symmetry)} \quad (1)
\]
\[
\forall x Rx x \quad \text{(reflexivity)} \quad (2)
\]

Since it seems reasonable to suggest that resemblance comes in degrees\(^1\), there might be (at least some) cases in which the resemblance of a given class of entities is so strong that it satisfies a further condition:

\[
\forall x, y, z (Rxy \land Ryz \rightarrow Rxz) \quad \text{(transitivity)} \quad (3)
\]

In those cases, resemblance becomes an equivalence relation (cf. Bacon 1995: 13).

It is worth noting that some philosophers not specifically concerned with the question of realism about universals have also argued that there is a use of the word ‘identity’ according to which it should be construed in terms of similarity. Douven and Decock (2010), for example, argue that many of the paradoxes of identity, such as the well known paradox of the ship of Theseus, can be resolved in this way.

For our present discussion, however, it will be convenient to take *tropes*\(^2\) instead of everyday life objects as the basis for resemblance relations — since trope nominalism avoids some of the problems of classical resemblance nominalism (cf. Schurz 1995: 100). Tropes are what has been called ‘abstract particulars’ (Campbell 1990: 2). In classical resemblance nominalism, concrete entities such as trees, cars, houses, and the like are taken to be the basis of resemblance relations. Thus, properties are classes of resembling objects and are themselves not real in a sense. Trope theory on the other hand takes the *particular* properties of objects (that which the realist calls the ‘property instances’) to be something very real. The particular color of a particular chair or the particular size of a particular table — these are particular properties, i.e., tropes of the respective objects.

So it is pretty obvious why tropes are called abstract *particulars*. But in what sense are they ‘abstract’? Pawel Rojek (2008: 361) takes tropes to be

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1 For formal models of similarity encompassing this idea see e.g. Douven/Decock (2011); Tverski (1977); Zadeh (1971).

2 The introduction of the term ‘trope’ into the debate can be traced back to the philosopher D.C. Williams (1953: 7).
abstract in the following sense: A constituent of a concrete entity is abstract if it cannot be physically separated from the concrete entity, but only be torn off in thought. So an abstract particular is a particular constituent of a particular concrete entity where the former can be torn off of the latter only in thought. A bundle of tropes occupying the same space for some time interval (a bundle of concurring tropes; Bacon 1989: 141) constitutes what we may call an individual object. A class of resembling tropes constitutes a general property; so the class of all red-tropes, for example, constitutes the general property of ‘redness’ or of ‘being red’; and a red-trope concurring with a hardness-trope, a certain shape-trope etc. might constitute a red chair, for instance. This will be our basis for the discussion of RR.

2 The problem

In a passage of his 1911-12 paper On the Relations of Universals and Particul-ars, Bertrand Russell writes the following:

We may take a standard particular case of colour-likeness, and say that anything else is to be called a colour-likeness if it is exactly like our standard case. It is obvious, however, that such a process leads to an endless regress: we explain the likeness of two terms as consisting in the likeness which their likeness bears to the likeness of two other terms, and such a regress is plainly vicious. Likeness at least, therefore, must be admitted as a universal, and, having admitted one universal, we have no longer any reason to reject others. (Russell 1911-12: 9)

This is exactly the problem that we are concerned with in this paper – RR. What Russell calls “likeness” is what we have called resemblance above. The problem can be restated as follows: Assume that two tropes $a$ and $b$ resemble one another. Then this resemblance, of course, has to be taken as a particular relational trope that holds between them. Call this trope $r_{a,b}$. Then, for every further trope $r_{c,d}$, which holds between two tropes $c$ and $d$, there must be yet another trope $r_{(a,b),(c,d)}$, which holds between $r_{a,b}$ and $r_{c,d}$, for the two to be called ‘resemblances’. Recall that in Section 1 we identified the general property of ‘being an $F$’ with the class of all particular resembling $F$-nesses. So for $r_{a,b}$ and $r_{c,d}$ to count as resemblances, they must be members of the class of resemblances, $R$, and therefore they must resemble one another. But this is not the end. For the higher order resemblances ($r_{(a,b),(c,d)}$ and so forth), there must yet be further higher order resemblances for them to count as resemblances. And there must also be resemblances between the lower and
the higher order resemblances, yielding an infinite regress of resemblances in all directions.

We could, of course, take resemblance to be a universal, thus stopping the regress before it even begins. But this would completely destroy the program of nominalism, because, as Russell says, “having admitted one universal, we have no longer any reason to reject others.”

3 Two formerly suggested solutions and why they are unsatisfactory

A seemingly simple solution to the problem is found in the writings of Keith Campbell. Campbell claims that “the regress is not vicious. It proceeds in a direction of greater and greater formality and less and less substance.” (Campbell 1990: 35) But, as was clearly pointed out by Chris Daly (1994: 256), this could be said about any given regress, and hence does not suffice as a criterion for virtuousness.

Furthermore, Campbell explicitly assumes that resemblances do not have an “added distinguishing character” (Daly 1994: 257), which means that they only differ because their relata differ from one another. But then there is no reason to suppose that higher order resemblances have an added distinguishing character either, which puts into question the very notion of the regress becoming ‘more formal’; how can a given resemblance of higher order be more formal than one of lower order, when they all have resemblances as their relata from the second order on? In any case, this does not seem like a very compelling solution, and therefore we cannot accept that the regress is virtuous — at least at this stage.

Another suggested solution makes use of the idea that similarity is an internal relation. In Armstrong’s words,

[a] relation is internal [...] when given certain terms with certain natures, the relation must hold between the terms. It holds ‘in every possible world’ that contains these terms and where these terms have these natures.[...] Given the numbers 4 and 2 as terms, then it follows, given the nature of 4 and 2, that they stand in the relation of greater and less. ‘4 is greater than 2’ therefore expresses an internal relation holding between these numbers. (Armstrong 1989: 43)
Applied to trope theory this means that, given their existence, two tropes $a$ and $b$ necessitate their particular resemblance $r_{a,b}$. Even more so, the resemblance $r_{a,b}$ supervenes on $a$ and $b$, and as Armstrong claims, this could be taken to imply the reducibility of $r_{a,b}$ to $a$ and $b$: “The relation supervenes on the natures, and if it supervenes, I suggest, it is not distinct from what it supervenes upon.” (Armstrong 1989: 56.) So there actually is no such thing as an extra entity $r_{a,b}$.

But what exactly does that mean now? Could it mean that $r_{a,b}$ is strictly identical with $a$ and $b$? Gerhard Schurz (1995: 102) argues that if the particular resemblance ($r_{a,b}$, in our terminology) is nothing over and above its relata ($a$ and $b$), we should understand this as a statement of strict identity. But this in turn would mean that $r_{a,b} = a$ and $r_{a,b} = b$ implying that $a = b$, which is false ex hypothesi (recall that tropes were supposed to never be strictly identical). Therefore, it seems, we cannot take $r_{a,b}$ to be ‘nothing over and above’ $a$ and $b$ in the sense that yields strict identity.

But maybe we have to understand the suggestion differently? Gonzalo Rodriguez-Pereyra, for example, reformulates the problem in terms of truth-making. What makes it true that $a$ and $b$ resemble one another? His answer is the following:

[...] $a$ and $b$ are the sole truthmakers of ‘$a$ and $b$ resemble each other’. There is no need to postulate extra entities to account for facts of resemblance: the resembling entities suffice to account for them. And so no regress of resemblances arises, since there are only resembling particulars and no resemblances at all. (Rodriguez-Pereyra 2002: 115)

On the face of it, this seems like a reasonable stance towards the problem. But upon closer inspection we realize that on this account it becomes entirely mysterious what we even mean by saying that ‘$a$ and $b$ resemble each other’. If there is no such thing as resemblance at all, then the very notion of ‘resemblance’ becomes entirely mysterious and, in the end, a vacuous and meaningless term. So maybe we need a better theory about what makes state-

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3 I take it that we can understand the “nature” of an entity in terms of the totality of its tropes. Tropes themselves cannot have natures; they are aspects of a thing or ways a thing is. So a proper subset of the totality of an entity’s tropes – maybe those considered as essential – is its nature.

4 Note that if we took the ordered pairs $<a, b>$ and $<b, a>$ to be the truthmakers instead, this would contradict the claim that $r_{a,b}$ is nothing over and above $a$ and $b$; if a pair is really nothing over and above its elements, then it becomes unintelligible what a pair is at all.
mens of the form ‘a and b resemble each other’ true, and therefore a genuine solution to the problem of RR.

4 Could resemblance be subject-relative?

Consider the following scenario: Two subjects, $S_1$ and $S_2$, are looking at a tennis ball, a light green apple, and a lemon. $S_1$ considers the color of the lemon and the tennis ball to be quite alike and the apple to be quite different in color. $S_2$, on the other hand, takes the apple and the tennis ball to be quite alike and the lemon to be different in color. Who of the two is right, and who is wrong? Situations like this one are common in our everyday lives, and most of us, from a certain age on, do not suppose that either subject has to be wrong; the lemon and the tennis ball are more alike in color for $S_1$, and the apple and the tennis ball are more alike in color for $S_2$. So this suggests that, when it comes to colors, resemblance is a somewhat subject-relative matter.

But this phenomenon is not restricted to color-resemblances. Consider the following example from the psychology of perception. In 1977, a series of experiments was conducted to investigate the hypothesis that subjects would utilize the similarity (resemblance) in pitch-chroma to recognize melodies transposed by an octave.5 The researchers summarize their findings as follows: “Only a few subjects showed evidence of perceiving pitch similarities. Our results do not support the hypothesis that all subjects perceive a common pitch-chroma at octave multiples.” (Thurlow and Erchul 1977: 177 — italics omitted)

Intuitively we may think that in the aforementioned study, the subjects who did judge the octave multiples to sound similar actually ‘got it right’, and the others were simply mistaken, because the study dealt with octave multiples and there is an objective connection between those. But what actually is the basis to judge that octave multiples are objectively connected? Do we not, in the end, rely on further perceptions and judgments of resemblance (e.g. by comparing spectrograms) in justifying claims of this sort?6

So here is a seemingly radical suggestion (which may not be so radical after all): why not take resemblance in general to be a subject-relative phenomenon? Why not say that, when two entities $a$ and $b$ resemble one another, they always

5 Where an octave is a property of sound frequencies, and a frequency $f_2$ is defined to be an octave above another frequency $f_1$ when $f_2 = 2f_1$ (Thurlow and Erchul 1977: 177).

6 Further examples of inter-subjective differences in similarity judgments are provided, for instance, in Douven/Decock (2010: 63).
resemble one another for some subject \( S \) and that there is no ‘resemblance in itself’? Note that this does not mean that resemblance is ‘not real’ or ‘all in the head’. It simply means that resemblance is a different relation from what we may intuitively think it is; that it depends, in its very existence, on the existence of perceiving subjects.

We would then have to take the predicate of resemblance as a (covertly) three place predicate, \( Rxyz \), instead of the two place predicate introduced in Section 1, where the former two variables range over objects of thought and perception, and the latter is restricted to perceiving subjects, meaning that ‘\( x \) and \( y \) resemble each other for \( z \)’. The suggestion to modify the predicate of resemblance (or similarity) is not new at all. Medin and Goldstone, for instance, require at minimum that “similarity statements of the form ‘\( A \) is similar to \( B \)’ are really shorthand for ‘\( A \) is similar to \( B \) in respects \( C \) according to comparison process \( D \), relative to some standard \( E \) mapped onto judgments by some function \( F \) for some purpose \( G \).’ ” (Medin and Goldstone 1995: 106.) On their account, resemblance (similarity) has to be construed as a relation with even more than three arguments. Note that the introduction of respects may be omitted by us, since we have chosen tropes as the ontological basis. We may concede that some or all of the further requirements are correct. But it seems that they all depend on internal states of one or multiple subjects, and we can hence subsume them under subject-relativity.

So there are clear cut reasons for considering resemblance a subject-relative phenomenon. In a way the idea that resemblance depends on a subject in its very existence may seem radical, but when we take a closer look, it is just perfectly nominalistic thinking with a somewhat Kantian flavor: Things are what they are. They can be analyzed by us into their abstract constituents (tropes) which come in bundles and occur to us as homogenous wholes (concurrency). Yet, they appear to us in a way which automatically makes us group them together, forces us to associate one with the other. This latter relation between us and the entities we encounter in the world around us is resemblance.

7 Their considerations are at least in part motivated by the arguments in Goodman’s famous paper *Seven Strictures on Similarity* (Goodman 1972: 437 ff.).
5 How subject-relativity puts a stop to the regress

Let us return to the problem of RR. The problem was that, according to resemblance nominalism, two particular resemblances could only count as ‘resemblances’ if they resembled one another, which lead to an infinite regress. Now consider the idea that ‘two resemblances resemble one another’ simply means something like ‘when we reflect on two acts of association, we associate those acts with one another’. So far so good. But now, if we read the argument from RR in this way, it would imply an infinite chain of associations. This, in turn, would imply that there are infinitely complex minds, and, in a naturalist ontology, infinitely complex brains.

If the former is not implausible enough, the latter surely is. So at this point, things look even worse. But first of all, we may ask ourselves the following question: When do we ever associate one act of association with another one? We surely do so in philosophical debates, such as the one presented in this paper. In everyday life, we hardly ever do. Hence, the first thing to notice here is that the regress seems to be dispositional or potential. We are in principle capable of associating associations with one another, and we might even be disposed to do so under certain circumstances. This, in itself, does not solve the problem yet, even though it removes the need for infinite complexity in most circumstances. But more importantly, it points to a second, crucial question: Would this not imply that, when subjected to the appropriate conditions, our brain or our mind could still become infinitely complex?

It is hence crucial to realize that the regress – construed in the manner outlined above – can never actually be executed to infinity. This is trivially given by the fact that humans are finite beings and simply do not have the capabilities to continue any cognitive process on to infinity. Furthermore, it is worth noticing that at some point the argument of RR typically continues with a phrase like ‘and so forth’ or ‘this goes on to infinity’. If we understand resemblance in the way I have outlined above, then the same thing must actually happen in the regress itself. At some point in time, some subject might reflect on her associative processes being alike, and then execute one or two iterations. But there is always a step when this sort of process is stopped and replaced by an inductive generalization of the form ‘and so on, for every further association’. The point is that there never actually occurs an infinite regress, only a (dispositional) finite one. And one may wonder what is so bad about that.
This is my argument then: Resemblance, it seems, can be construed as a three place relation, involving some subject $S$ for whom two particular entities $a$ and $b$ resemble. If this is the case, then we have to understand resemblance as an act of association. But if resemblance is an act of association, then there can never actually be an infinite regress, because (a) humans are finite beings and are thus unable to associate to infinity, and (b) in reality, the regress – if it even occurs – is always replaced at some very low order of iteration by an inductive generalization.

Consider this as a stronger argument for the virtuousness of the regress. What harm does it do that, under certain circumstances, we are disposed to associate some of our involuntary cognitive processes with one another? Nonetheless, this approach preserves the idea that resemblance is supervenient on and necessitated by its relata. The fact that two resembling entities ‘force’ us to associate them with one another can be construed in terms of possible worlds as follows: Let $\Gamma$ and $\Gamma'$ be sets of subjects and $\psi(w)$ the set of all individuals existing in a world $w$ (cf. Kripke 1971). Then whenever there are two entities $a$ and $b$ in our world $w$, such that $\exists \Gamma \subseteq \psi(w) \forall S \in \Gamma : RabS$, then in every possible world $w'$ such that $a, b \in \psi(w')$ and $\exists \Gamma' \subseteq \psi(w') \forall S' \in \Gamma' : S'$ has the same cognitive and perceptive capabilities and limitations as the $S \in \Gamma$, it holds that $RabS'$. So whenever $a$ and $b$ exist and there is a certain set of subjects $\Gamma$ with certain perceptive and cognitive capabilities, $a$ and $b$ necessarily resemble each other.

In this modified sense, two resembling entities still do necessitate their resemblance and resemblance does supervene on its relata, albeit on its three relata. Nonetheless, we are still in a position to say what it means for $a$ and $b$ to resemble, avoiding Armstrong’s reductionism and allowing for the resemblance to be something over and above $a$ and $b$. The truthmakers for a statement of the form ‘$a$ and $b$ resemble one another’ are $a$ and $b$ together with their action on the $S \in \Gamma$. So in a way, Armstrong’s and Rodriguez-Pereyra’s claims are preserved here, because w.r.t. the part of resemblance that is fully in the outside world, there is nothing over and above the resembling entities. Hence, this approach nicely combines aspects of the two aforementioned suggestions for a solution to RR, and enriches them with a Kantian flavor, to provide us with what I take to be a more comprehensive and compelling solution.

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8 Note that the improper set inclusion $\subseteq$ is only used to acknowledge rather odd worlds in which all individuals are perceiving subjects and in which there are entities which resemble for all of them. For more regular worlds, the inclusion would certainly be proper.
For an adequate, use-apt reduction of the two place predicate to the three place one, however, we would also have to specify normal conditions under which two entities are associated by a given set of subjects $\Gamma$, because otherwise everything could be made to resemble everything (e.g. with the use of certain drugs). $\Gamma$ could then be construed as our *epistemic community*.9

### 6 Concluding remarks

In Section 4 I have argued that certain entities ‘force’ us to associate them with one another. So the question remains: in virtue of what do they do so? Of course we cannot say that we associate them because they resemble each other, since that is basically our explanandum now.

One might propose that it would be a miracle that we associate certain entities with one another if they were not, in some sense, already similar to each other.10 But this, in my opinion, is just begging the question. If we want an account of why we structure the world as we do, that is, in terms of alike and differing entities, we cannot simply presuppose that resemblances ‘lie out there’, waiting to be discovered by us. All we should say is that certain entities act on us11 in a way that makes us associate them with one another and that we managed to survive being equipped with this feature.12 This is what I have called the ‘Kantian flavor’ of my approach. To avoid the stipulation of a naïve realism, we must, at least to some degree, take into consideration the role of the subject, and for some purposes remain on the level of appearances.

Finally, it seems important to recapture that the suggested solution to RR is, in fact, *not* strictly anti-realist w.r.t. resemblance. In Section 4, it was already argued that considering resemblance as a three place relation does not

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9 For the idea of relativizing predicates to an epistemic community see also van Fraassen (1980: 18).

10 This alludes, of course, to a version of Putnam’s famous No-Miracles Argument for scientific realism (Putnam 1975: 73).

11 A question that does remain open, however, is how to exactly construe the ‘acting on’ in this context. It is obviously a causal term, thus demanding a nominalism-compatible theory of causality; but the specifics of that will have to be determined in later works.

12 Let no one argue that the correlation between our survival and our being equipped with this feature must clearly imply its truth-conduciveness. In the case of religion, e.g., it can be made plausible that supposedly false beliefs do nonetheless promote survival (cf. Wilson 2002). If modern science has taught us anything, then it is that our senses and innate intuitions do not always tell us the correct story about what the world is like.
make it a mere product of the mind. At first glance, it may seem though, that I have proposed an epistemic solution to a metaphysical problem. But this is not entirely true either. Since subjects are part of this world and so are the entities which resemble for them, a metaphysics of what resemblance is is provided by specifying it as a three-place relation, involving the aforementioned entities. Consider the example of the two subjects ($S_1$ and $S_2$), the apple, the lemon, and the tennis ball again. Even though the lemon and the ball can only be said to have a stronger resemblance for $S_1$, and the apple and the ball for $S_2$, they still do have these resemblances. It is only that resemblance metaphysically depends on more than we may have initially thought. It also depends on the perceiving subject. In turn, the presented metaphysics may be considered as rather revisionary, and it must be conceded that there is a certain epistemological touch to it. It reserves a definite role for perceiving, cognizing subjects as firm parts of a complete ontology.

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