Two Problems for Resemblance Nominalism

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I. Nominalisms

Just as 'being' according to Aristotle, 'nominalism' can be said in many ways, being currently used to refer to a number of non equivalent theses, each denying the existence of entities of a certain sort. In a Quinean largely shared sense, nominalism is the thesis that abstract entities do not exist. In other senses, some of which also are broadly shared, nominalism is the thesis that universals do not exist; the thesis that neither universals nor tropes exist; the thesis that properties do not exist. These theses seem to be independent, at least to some degree: some ontologies incorporate all of them, some none, some just one and some more than one but not all. This makes the taxonomy of nominalisms very complex. Armstrong 1978 distinguishes six varieties of nominalism according to which neither universals nor tropes exist, called respectively 'ostrich nominalism', 'predicate nominalism', 'concept nominalism', 'mereological nominalism', 'class nominalism' and 'resemblance nominalism', which Armstrong criticizes but considers superior to any other version.

According to resemblance nominalism, properties depend on primitive resemblance relations among particulars, while there are neither universals nor tropes. Rodriguez-Pereyra 2002 contains a systematic formulation and defence of a version of resemblance nominalism according to which properties exist, conceived of as maximal classes of exactly resembling particulars. An exact resemblance is one that two particulars can bear to each other just in case there is some 'lowest determinate' property - for example, being of an absolutely precise nuance of red – that both have just in virtue of precisely resembling certain particulars (so that chromatic resemblance can only be chromatic indiscernibility). This is not the only possible variety of resemblance nominalism. Another variety of resemblance nominalism, that is sketched in Price 1953, treats properties as maximal classes of particulars closely resembling a small number of paradigms, where close resemblance in colour does not require chromatic indiscernibility (and so, there need to be no 'lowest determinate' property that resembling particulars share).

In this paper, I shall not consider the latter variety of resemblance nominalism, which Rodriguez-Pereyra convincingly criticizes[1], and which even Price does not seem to have either accepted or rejected. Instead, I shall raise a couple of objections against

[1] See Rodriguez-Pereyra 2002, pp 124-141

Rodriguez-Pereyra's version of resemblance nominalism. First, I shall argue that Rodriguez-Pereyra's solution to the so-called "imperfect community difficulty"[2] is untenable. Second, I shall argue that Rodriguez-Pereyra's idea that sparse properties are bound to be lowest determinates, while determinable properties of any degree are to be treated as (infinite) disjunctions of determinates, is liable to undermine the whole approach.

II. Resemblance, classes and imperfect communities

In Rodriguez-Pereyra's version, resemblance nominalism "says, roughly, that for a particular to have a property F is for it to resemble all the F-particulars"[3]. Since an F-particular is just something that has the property F, this idea of what it is for a particular to have the property F may sound plainly circular: having F merely amounts to resembling all the things that have F, which can hardly be seen as an explanation of what it is to have F. The circularity, however, vanishes if one formulates the general idea in some less rough way. One way is as follows. Whenever there are *n* things such that each of them resembles all of them and nothing else does, there must be exactly one sparse, lowest determinate, non-disjunctive property F that all and only those things share. And their sharing F is nothing over and above their resembling each other, so that having F simply amounts to resembling all those things. If one is not sceptical about classes, one can easily identify F with the class of those things resemblance to which amounts to having F (that is, with the class of things that have F).

This explains why there are a number of difficulties that resemblance nominalism shares with class nominalism. One has to do with coextensive properties.[4] If F and G are had exactly by the same things, having F and having G consist in resembling the same things, which entails that F and G cannot be different. But there seems to be no reason to treat properties like *having a heart* and *having kidneys* as the same property, despite the fact that all the organisms with a heart also have kidneys and vice versa. The coextension difficulty can be brought under control by embracing modal realism[5]. If what makes a particular have a property F is that it resembles all *possible* F-particulars, then F and G can be treated as different even in case they are coextensive in the actual world. And the usual rejoinder according to which this does not allow one to treat necessarily coextensive properties as different can be blocked

[2] Goodman 1966, pp. 162-64

[3] Rodriguez-Pereyra 2002, p. 25

[4] Leaving aside coextensive properties, both class nominalism and resemblance nominalism have been thought to be committed to an infinite regress and to be unable to give a correct account of relations (see Armstrong 1978, 1989).

[5] Rodriguez-Pereyra, 2002, p. 99

by claiming that every apparent example of necessarily coextensive properties "is in fact just a case of semantically different predicates applying in virtue of one and the same property or relation"[6].

The coextension difficulty challenges the idea that whenever *n* particulars are such that each of them resembles all of them and nothing else does, there is at most one (sparse, lowest determinate) property that they share. What is known as "the imperfect community difficulty" challenges the idea that, whenever there are *n* such particulars, there is at least one property that they share. The difficulty was first named and described by Nelson Goodman in *The Structure of Appearance*. For the sake of simplicity, suppose that there are three things *a*, *b* and *c* such that *a* is red and hot but not soft, *b* is red and soft but not hot and *c* is soft and hot but not red. Since *a* and *b* share the property of being red, *a* and *c* share the property of being hot and *b* and *c* share the property of being soft, surely *a*, *b* and *c* are such that each of them resembles all of them. Now, suppose that nothing else resembles both *a*, *b* and *c* (only *a*, *b* and *c* do). In such a case, either there is a sparse, lowest determinate property that *a*, *b* and *c* share or resemblance nominalism is false. But the only property that *a*, *b* and *c* seem to share is the disjunctive property of being either red, hot or soft – which is abundant, non-sparse. Therefore, resemblance nominalism is false: sometimes *n* things are such that each of them resembles all of them and nothing else does, but there is no sparse, lowest determinate property that all and only those things share.

Rodriguez-Pereyra 2002 attempts to avoid the difficulty by making the relation between resemblance and having a property more complicated. According to this refined version of resemblance nominalism, in order for some things to be the only things that share a sparse, lowest determinate property it is no longer sufficient that each of them resembles all of them and nothing else does, it is also required that each couple of them resembles all couples of them and that each couple of couples of them resembles all couples of couples of them, and so on. According to Rodriguez-Pereyra, there is a sense in which, even if *a*, *b* and *c* are such that each of them resembles all of them, their couples do not. This sense, however, is not immediately transparent. For there is an obvious sense in which all the couples of *a*, *b* and *c* are such that each of them does resemble all of them. First, they all are couples. Second, they are resembling couples, given that the elements of each of them resemble the elements of all of them. Third, no other couple can be such that its elements resembles the elements of all of them, since the elements of all of them are just *a*, *b* and *c*, and by hypothesis nothing else except *a*, *b* and *c* resembles all of *a*, *b* and *c*. So, to conclude with, the couples of *a*, *b* and *c* are such that each of them resembles all of them and

[6] Rodriguez-Pereyra, 2002, p.100

nothing else does. But, nonetheless, there seems to be no property that *a*, *b* and *c* share.

What Rodriguez-Pereyra has in mind is that, in order for *a*, *b* and *c* to share any property, all the couples of *a*, *b* and *c* (and their couples and the couples of their couples and so on) must not merely resemble but instead resemble in a specific way. And two couples resemble in this specific way if and only if the elements of one couple resemble each other in the same way as the elements of the other couple resemble each other. This is not the case, for example, with the couples $<a, b>$ and $<b, c>$, since the elements of the first couple resemble each other inasmuch as they are both red, while the elements of the second couple resemble each other inasmuch as they are both soft.

Less roughly, the account runs as follows. If a particular is red, say that it is red^0. And say that a couple $<x, y>$ is red^n ($n \geq 1$) just in case both *x* and *y* are red^{n-1} – so that a couple of red particulars is red^1, a couple of couples of red particulars is red^2, and so on, along all the orders of an ascending hierarchy. The same can be repeated for any sparse property of x different from *being red* (it can easily be seen, then, that every n*th*-order couple inherits its properties of n*th* order from the properties of n-1*th* order of its elements). Consider now a set α^0 of particulars, and the set α^1 of all their ordered couples, and the set α^2 of all the ordered couples of those ordered couples, and so on. The elements of α^0 share a sparse property just in case they resemble in the required way, and they resemble in the required way if and only if, for any two of them, there is a property of 0 order that they share and, for any two elements of α^1, there is a property of 1*st* order that they share, and so on. In symbols,

D) $(n)\ (x)\ (y)\ (x \in \alpha^n \wedge y \in \alpha^n) \rightarrow f(x) \cap f(y) \neq \emptyset$,

where $f(x) \cap f(y)$ are the properties of n*th* order that both *x* and *y* have.[7] If α^0 satisfies D), its elements share a sparse property P^0. If, in addition, α^0 is a proper subset of no set that satisfies D), then α^0 can be treated as the extension of P^0, and having P^0 consists in resembling all the α^0-particulars.

If resemblance nominalism is anything, it is the idea that having a property is resembling certain things. The idea must be implemented by specifying what things something must resemble in order to have a property. But the specification cannot be given in terms of what properties these things must have: however plainly true, the mere idea that having a property consists in resembling all the things that have that property could hardly be named a 'resemblance theory' of having a property – just as the idea that having a size consists in being as big as anything that has the same size can hardly be named a 'resemblance theory' of having a size (I am not suggesting that

[7] The same can be repeated, mutatis mutandis for polyadic properties. In such a case, particulars are *n*-tuples of individuals, couples of *1st* order are couples of n-tuples and so on.

the idea is a truism: it is far from banal that having a property *consists in* - and not merely entails or presupposes – resembling something; but we do not have a resemblance theory of having a property unless we say what it is that something must resemble in order to have a property. And this cannot be specified in terms of properties, on pain of circularity). If one says that having a property consists in being one of *n* things such that each of them resembles all of them and nothing else does, the explanation is just in terms of quantification and resemblance, and not in terms of what properties those *n* things have. But the explanation faces the imperfect community difficulty, so a new explanation must be offered that is immune to the difficulty. Again, the new explanation should avoid specifying what things something must resemble in order to have a property in terms of what properties those things have. But it is not clear that Rodriguez-Pereyra's refined explanation avoids doing so.

According to the new explanation, the particulars *a*, *b* and *c* mentioned above do not share any property even if each of them resembles all of them because their couples – for example <*a*, *b*> and <*b*, *c*> - fail to resemble in the required way. And they fail to do so inasmuch as there is no sparse property that both the elements of one couple and those of the other share, which is the condition in terms of which the required kind of resemblance between couples of particulars is defined. But then, as one can easily see, the required resemblance of *all* the couples of *a*, *b* and *c* (and the couples of those couples and so on) is defined in terms of the existence of some property that all of *a*, *b* and *c* share. At this point, however, one can easily feel perplexed. Since we see that *n* things can be such that each of them resembles all of them even if there is no property that they share, we must find another way of stating in terms of resemblance when it is that *n* things share a property. But, if the idea is that in order to share a property, *n* things must be such that (their couples are related in such a way that) there is a property that each of these things shares, this may seem to be more a roundabout statement of the mere platitude that n things share a property just in case they do than a way of implementing resemblance nominalism.

One can invite us not to confuse the order of justification with the order of ontological dependence. If one says that *n* things are such that they resemble in a certain way if and only if there is a property that they share, the order of justification goes from right to left, but the order of ontological dependence follows the reverse route: it is in virtue of a certain resemblance between <*a*, *b*>, <*b*, *c*> and <*a*, *c*> that there is a property that *a*, *b* and *c* share, but it is in virtue of the existence of a property that *a*, *b* and *c* share that we are justified in saying that <*a*, *b*>, <*b*, *c*> and <*a*, *c*> resemble in that way. The justification is given by quantifying over properties, but everything we say in terms of properties is made true by nothing other than particulars and resemblance.

This reply simply misses the point. The point is that one cannot define a certain kind of resemblance in terms of having a property and then using this very kind of resemblance as a necessary condition for having a property. The reason why one cannot is not that doing so amounts to saying something false, but that it gives no information. All that is said is that having a property consists in resembling something, but the only answer that is given to the question "resembling what?" is "resembling whatever has that property", which of course is completely uninformative. The same circularity also affects Rodriguez-Pereyra's solution of the so-called "companion difficulty", which is that some properties can have extensions that are one a proper subclass of the other. The reason is that Rodriguez Pereyra's solution of the companion difficulty is built on his solution of the imperfect community difficulty and inherits its problems.[8]

III. Determinates, plurality and perception

According to Rodriguez-Pereyra's version of resemblance nominalism, primitive relations of exact resemblance establish lowest determinates, that are sparse and can be reconstructed in terms of resemblance classes while determinables are to be treated as (infinite) disjunctions of determinates, and so as abundant. This idea yields a number of difficulties.

Contrary to determinables of any degree, lowest determinate properties might well be instantiated by just one actual entity. It might well turn out, for example, that only a certain leaf (or a certain tip of a certain leaf) and nothing else is actually that exact nuance of green; and it might turn out that only a certain actual spoon (or the handle of a certain spoon) and nothing else is actually that exact temperature (after all, temperatures and colors are as many as real numbers and so innumerable, which means that between two lowest determinates, however proximate they might be, there are an infinite number of intermediate lowest determinates)[9]. In such a case, no two things in the actual world would share any property. Since nothing outside the actual world is empirically accessible to us, for any sparse, lowest determinate property, there would be just one empirically detectable thing that has it.

By multiplying particulars, it might be suggested, perdurantist theories of persistence reduce this possibility to a minimum. Take a fork and a knife gradually warming from 20° to 30° during the same or different intervals. If perdurantism holds, this process requires that, for any lowest determinate temperature between 20° and 30°, there are a temporal slice of a fork and a temporal slice of a knife having exactly that temperature. It may be so, indeed, but it need not be, depending on whether perduring things have instantaneous slices or not, which on its turn seems to depend on whether time is discrete or continuous. For, if time is continuous, any unit of time can be divided into smaller units, which seems to entail that any temporal slice of a persistent thing can be divided into shorter temporal slices. If a gradual process of warming is continuous, no successive temporal slices of a warming thing can be of the same temperature. So, every temporal slice of a warming thing is a sum of shorter temporal slices that are not of the same temperature. So nothing has a lowest determinate temperature unless it does not change its temperature during some interval (the argument can be replied, *mutatis mutandis*, for colour and in fact for any determinable).

The moral to be drawn is roughly as follows. If nothing has invariably a lowest determinate property during some interval and time is continuous, nothing at all has a

[8] See Rodriguez-Pereyra 2002, Ch. 10
[9] Campbell 1990 makes exactly the same point (see p. 13).

lowest determinate property. If time is continuous, however, and some things have invariably some lowest determinate properties during some interval, there are still doubts that two different things actually share the same lowest determinate (and even more doubts that, for *any* lowest determinate property, at least two actual things share it). So, perdurantism is of no help in proving that lowest determinate properties are ordinarily instantiated by more than one actual thing, unless time is discrete. The possibility that a huge number of sparse properties fail to be true of more than one actual particular may not sound too disturbing, especially if one is ontologically committed to *possibilia*. If sparse properties could be predicated of just one actual thing, however, properties would certainly be divorced from actual generality.

Even if lowest determinates were normally instantiated by more than one actual thing, moreover, those things might easily be too fine-grained to be perceived, discerned and referred to in any way, even with the help of the most precise instruments of measurement (this would be the case if lowest determinates could only be instantiated by temporally flat entities). And even if we could perceive things that have lowest determinate colours or temperatures, we could not perceive their lowest determinate colours and temperatures (so, *a fortiori*, we could not perceive that two or more things have the same lowest determinate colour or temperature, even if there are any such things). We could not perceive the colour of a ball or the temperature of a fork (nor could we perceive *that* a ball is a certain colour or *that* a fork is a certain temperature), for the power of resolution of our senses – and even of our best instruments of measurement – is certainly insufficient to perceive lowest determinates.

If we are unable to perceive lowest determinate colours, it is not clear how we could perceive determinables, provided determinables are (infinite) disjunctions of determinates. How can one perceive either John or Jack, if she perceives neither John nor Jack? And how can a colour-blind people perceive red or green if she perceives neither red nor green? Perhaps, it might be suggested, one can be able to perceive *that* something is red or green while being unable both to perceive *that* something is red and to perceive *that* something is green (in the same way, one can know that something is red or green while knowing neither that it is red nor that it is green). However plausible this may sound, it is far from obvious, especially if one can neither perceive that something is red nor perceive that something is green. To perceive that something is somehow ambiguous between the green and the red, indeed, is not to perceive that something is unambiguously green or unambiguously red, especially if one is invariably unable both to perceive that something is unambiguously green and to perceive that something is unambiguously red. And nobody of course has ever perceived that something is of any lowest determinate nuance of red, of green or of any other colour (temperature, mass, etc.).

If we are able to perceive that something has a determinable colour (for example, being red) while failing to perceive that it has a lowest determinate colour, this is probably not by perceiving that it has disjunctively an infinite number of lowest determinate properties. In this kind of perception, the unperceivables might be given somehow collectively rather than disjunctively. When we perceive an extended place, we do not perceive an infinite disjunction of geometrical invisible points, but rather a bi-dimensional metrical space whose parts – down to its smallest indivisible parts (geometrical points, if any) – can only be individuated relative to each other. And the extended space itself can only be individuated relative to other places not enclosed in it, but belonging to one and the same larger space. The same may occur, *mutatis mutandis*, when we perceive a determinable colour.

Given the imperfect power of resolution of our senses and even of our best instruments of measurement, the idea that we cannot perceive that something is P unless P is a lowest determinate or a disjunction of lowest determinates raises problems for our very possibility to perceive that something is P. But resemblance nominalism would have difficulties in explaining how it is that we can perceive that P even if our senses had a perfectly adequate power of resolution. If having a lowest determinate colour consists in resembling all things that are that colour, perceiving that something is that colour amounts to perceiving that it resembles all those things (and that the class of those things satisfies certain conditions of maximality, and that any couple of things of that class resembles any other, and so on[10]). But nobody can perceive that something resembles all the things that are a particular colour unless she perceives all those things, which is very difficult in case they are all actual and it is impossible in case some of them are mere *possibilia*.

Rodriguez-Pereyra, who discusses this in connection with his own version of resemblance nominalism, presents the difficulty as a reformulation of an objection moved by Mulligan et al. against both concept nominalism and universalism about properties[11]. His defence is as follows.

> "In those cases of perception we report by saying that we see the scarletness of the table what we see is that the table is scarlet. And what makes a particular scarlet involves its resembling all other scarlet particulars and more than that [...]. But the objection is a *non sequitur*. For, in general, to perceive that something is gold or water one need not and typically does not, perceive that the thing has atomic number 79 or that its molecular composition is H_2O."[12]

This defence is not irresistible. For sure, being water consists in being H_2O just as, according to resemblance nominalism, being scarlet consists in resembling all scarlet particulars; and nobody can perceive that something is H_2O, just as nobody can perceive that something resembles all the scarlet particulars. But there is an important difference. If one perceives that something is water, the content of perception is causally connected to the molecular composition of what one is perceiving while, if one perceives that something is scarlet, the content of perception does not causally depend in any way on whether what is perceived is the only scarlet thing in the universe or is one of many. So the point against resemblance nominalism might be put as follows. If we can sometimes perceive that *x* is P but never perceive that *x* is R, it can still be the case that being P consists in being R, provided our perception that *x* is P is

[10] See Rodriguez-Pereyra 2002, chs. 9-12.

[11] Mulligan *et al*. 1984, p. 306. In this context, the point of the authors is aimed to argue for the existence of tropes.

[12] Rodriguez-Pereyra 2002, pp. 93-4

invariably caused by *x*'s being R. But our perception that *x* is scarlet does not seem to be caused in any way by *x*'s resembling all the scarlet particulars, while our perception that *x* is water is necessarily caused by *x*'s being H_2O.

IV. Determinates, determinables and resemblance

According to Rodriguez-Pereyra's version of resemblance nominalism, properties depend on resemblances that are precise – they are resemblances that two particulars can bear to each other just in case there is some 'lowest determinate' property that both have just in virtue of precisely resembling the same particulars, so that chromatic resemblance, for example, can only be chromatic indiscernibility. Resemblance admits of degrees only inasmuch as two resembling particulars can bear to each other a variable number of precise resemblance relations (they can be indistinguishable in colour, temperature, mass, dimensions etc). The idea is that precise resemblances between particulars establish lowest determinates, of which highest determinables are (often infinite) disjunctions. Let me say why I do not believe that determinables can be treated as disjunctions of determinates.

The distinction between determinable and determinate was firstly introduced by Johnson 1921 to qualify the relation between properties like being scarlet and being red. The distinction is relative, inasmuch as a property can be both a determinable with respect to one property and a determinate with respect to another (this is the case of being red, that is a determinable with respect to being scarlet but a determinate with respect to being coloured). The following four theses are generally assumed.

1) For any determinate property P, there is exactly one property Q such that (i) Q is a determinable with respect to P and (ii) there is no property R that is a determinable with respect both to P and to Q. Every determinate, in other words, determines exactly one *highest determinable*.

2) Every determinable Q is such that there are a number of properties P1, P2, ...,Pn that are determinates with respect to Q and are determinables with respect to no property. For any determinable, in other words, there are a number of *lowest determinates*.

3) Lowest determinates under the same determinable are incompatible with each other, just as determinables of the same degree under the same highest determinable.

4) Nothing can have a determinable property without having some of its lowest determinates. So, given 3, nothing can have a determinable property without having at least and at most one of its lowest determinates.

Given that nothing can have a lowest determinate without having its highest determinable, 4) might suggest that highest determinables are (exclusive) disjunctions of their lowest determinates and, more generally, that determinables of degree *n* are disjunctions of determinates of degree *n*-1. Having a determinable property, thus, amounts to having *exactly* one of its lowest determinates.

Rodriguez-Pereyra, who endorses this account of determinables, believes that it gives us a straightforward solution to a well-known problem, that of explaining in virtue of what the distinction between determinable and determinate is not the same as the distinction between genus and species[13]. It is a widely shared idea that a species can be defined by *genus* and *differentia specifica*, where the *genus* and the *differentia* are logically independent (for example, 'animal' and 'rational') while a determinate cannot be defined by a conjunction of independent predicates (since "blue" for example, entails "coloured")[14]. The idea is disputable, since in some of Aristotle's examples (for instance, "walking animal"), the *differentia* entails the *genus*[15]; and Sanford 1970 has argued that the idea has additional logical difficulties[16].

Be that as it may, there is an important aspect of the distinction between determinate and determinable that is left unexplained by the idea of a determinable as an exclusive disjunction of determinates. As Johnson 1921 emphasizes, differences between determinates under the same determinable are quantitatively comparable. For example, blue is more different from yellow than yellow is different from orange. In short, determinables have a metric. They are orderings of determinates along one or more dimensions (in case of multi-dimensional determinables like colour). Besides being necessarily incompatible, different determinates under the same determinable necessarily stay at some distance, rather like points on a line. This fact grounds Johnson's idea of "adjectival betwenness"[17], a relation that for example orange bears to yellow and red. Since distances between determinates under the same determinable are essential to them, one determinate can be individuated in terms of its distance from other determinates under the same determinable (just as four pounds can be individuated as the weight that is greater than three pounds by as much as three pounds is greater than two pounds). Starting from two lowest determinates P and Q whatsoever under the same highest determinable, one can reach any other lowest determinate R under the same determinable, in terms of the proportion between its distance from P (or Q) and the distance between P and Q (perhaps, taking into account irrational numbers, what one can guarantee is at most that *a great number* of determinates under the same determinable can be reached in that way).

In a line there is more than a disjunction of points (a listing, so to say, of mutually excluding points). There is an overall order in which the points are given collectively rather than disjunctively. The identity of each particular point is its position in the overall order. How can the order emerge from the disjunction?

Rodriguez-Pereyra says:

> "There is indeed a notion of resemblance on which carmine and vermilion particulars, other things being equal, resemble each other more closely than any of them resembles any French blue particular. Such resemblances may be used to account for determinables. But this is not the resemblance with which I am concerned [...]".

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[13] See Rodriguez-Pereyra 2002, p. 49

[14] The idea goes back to Searle 1959; see also Searle 1967

[15] See Topics, IV. 6.

[16] See also Sanford 2011, pp. 11-13

[17] See Johnson 1921, pp. 181-182. Here I shall say nothing about adjectival betwenness.

If such resemblances may be used to account for determinables, it is not easy to see how determinables can be treated as exclusive disjunctions of determinates. Some pages later, however, Rodriguez-Pereyra adds that this notion of resemblance “is the basis of the resemblance between properties” (Rodriguez-Pereyra 2002). If I understand correctly, what Rodriguez-Pereyra means is that, if one says that carmine and vermilion particulars, *ceteris paribus*, resemble each other more closely than any of them resembles any French blue particular, one is speaking of the determinate properties of being carmine, being vermilion and being French blue, and not of any carmine, vermilion and French blue particulars. What one is saying is that the first and the second determinates resemble more closely than (either?) the first or the second resembles the third. When you have a disjunction of determinates, you also have more or less close resemblances between those determinates. In short, you have a determinable.

I have three objections to this. First, I do not see how the (relatively close) resemblance between a scarlet and a vermilion particular should primarily be seen as a (relatively close) resemblance between their properties and only derivatively as a (relatively close) resemblance between the particulars themselves. It is the particulars that primarily resemble! What bizarre variety of nominalism is this, according to which close resemblances between particulars supervene on close resemblances between properties? Second, no determinate can be given regardless of its position in the overall metric of its highest determinable: weighing two pounds is weighing twice one pound. It is hopeless to begin by giving determinates in isolation and then make the global map of the determinable territory simply emerge from them (in the same way, it is hopeless to give points in isolation and then make an extended place emerge from them). Third, according to resemblance nominalism, lowest determinates are maximal classes of resembling particulars. In what sense, if any, can two maximal, mutually exclusive classes resemble each other more closely than any of them resembles a third? I see none, unless what one means is that the particulars belonging to the first class resemble those belonging to the second class more closely than those belonging to either class resemble those belonging to the third.

I conclude that treating properties as maximal classes of *exactly* resembling particulars does not seem to be very promising. Treating properties as maximal classes of particulars *closely* resembling a small number of paradigms, however, does not seem to offer many advantages[18]. If resemblance nominalism has any hope, it is only by devising some other way to construe properties in terms of primitive, more or less close resemblance relations among particulars.

References

Armstrong, D. M. (1978), *Universals and Scientific Realism. i: Nominalism and Realism*, Cambridge: Cambridge University Press

[18] See Price 1953, pp.21-22, where this kind of resemblance nominalism is sketched.See also Rodriguez-Pereyra 2002, pp. 124-141, where “aristocratic” resemblance nominalism is convincingly criticized.

Armstrong, D. M. (1989), *Universals: an Opinionated Introduction*, Boulder, Colo.: Westview Press

Campbell, K. (1990), *Abstract Particulars*, Oxford: Blackwell

Goodman, N. (1966), *The Structure of Appearance*, 2nd ed., Indianapolis: The Bobbs Merrill Company, Inc

Johnson, W. E. (1921), *Logic*, Part I, Cambridge: Cambridge University Press

Mulligan, K., Simons, P., and Smith, B. (1984), 'Truth Makers', *Philosophy and Phenomenological Research*, 44: 278-321

Price, H.H. (1953), *Thinking and Experience*, London: Hutchinson's University Library

Rodriguez-Pereyra, G. (2002), *Resemblance Nominalism. A Solution to the Problem of Universals*, Oxford: Oxford University Press

Sanford, D. (1970), 'Disjunctive Predicates', *American Philosophical Quarterly*, 65: 356-358

Sanford, D. (2011), 'Determinates vs. Determinables', *Stanford Encyclopedia of Philosophy*

Searle, J. (1959), 'On Determinates and Resemblance, II', *Proceedings of the Aristotelian Society*, (Suppl. Vol.) XXXIII: 141-158

Searle, J. (1967), 'Determinables and Determinates', in P. Edwards (ed.) *The Encyclopedia of Philosophy*, 2nd ed., Detroit: MacMillan