

That these laws do not preclude it from happening merely demonstrates their predictive limitations. Above all, these laws plausibly *do not*, as some scientists and philosophers seem to think, hold the key to the problem of the 'arrow' of time. I strongly suspect that the key to that problem lies, rather, in the asymmetry of causation. From our examination of the question of whether time travel into the past is possible, we have seen that the main obstacle to such time travel—and therewith to the backward causation that such time travel would inevitably involve—is its potential to give rise to causal loops. Events caught up in such loops would not be amenable to causal explanation, because genuine explanations cannot be circular. And while we cannot reasonably insist that every event whatever is amenable to causal explanation, it is, I think, unreasonable to suppose that large tracts of spatiotemporal reality might exist which are unamenable to causal explanation on account of the presence within them of widespread and systematic causal loops. If this reasoning is sound, then even if we are inclined to admit that backward causation and causal loops are in principle possible, we have grounds for supposing that these phenomena are necessarily extremely rare, thus enabling us at least to endorse some version of the *second* of the two causal accounts of the asymmetry of time described earlier—the account according to which the earlier-to-later direction of time may be identified with the direction of *most* causation.<sup>11</sup>

<sup>11</sup> For rather more advanced discussion of some of the topics covered in this chapter, see Steven F. Savitt (ed.), *Time's Arrow Today: Recent Physical and Philosophical Work on the Direction of Time* (Cambridge: Cambridge University Press, 1995).

#### PART VI: UNIVERSALS AND PARTICULARS

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# 19

## REALISM VERSUS NOMINALISM

### The distinction between universals and particulars

In this chapter I shall examine one of the most fundamental of all ontological distinctions: the distinction between *universals* and *particulars*. Although discussion of this distinction has a very long history, there continues to be controversy both about how the distinction should be drawn and about whether it has genuine application. That is to say, there is still disagreement as to what should be understood by the terms 'universal' and 'particular' and even some disagreement as to whether anything is usefully describable by either of these terms. However, it is widely assumed amongst modern metaphysicians, I think rightly, that if the distinction ought to be drawn at all then it ought to be drawn in such a way that the terms denote mutually exclusive and jointly exhaustive ontological categories—that is, in such a way that every entity whatever is either a universal or a particular, but not both. But even those philosophers who accept this assumption are divided over the question of whether both of these categories are actually occupied—some holding that both universals and particulars exist, others that only universals exist, and yet others that only particulars exist. Moreover, those who hold that both universals and particulars exist are further divided over the question of whether entities in one of these categories are reducible to entities in the other, and if so, which. Some philosophers hold that universals and particulars are mutually irreducible and thus that these two ontological categories are equally fundamental. Others hold that universals are somehow reducible to particulars or else, conversely, that particulars are somehow reducible to universals. But before we can more fully describe and attempt to evaluate some of these rival ontological doctrines, we need to consider how,

precisely, the distinction between the universal and the particular should be drawn.

### A spatiotemporal account of the distinction

An approach favoured by some philosophers is to attempt to draw this distinction in spatiotemporal terms. The idea here is, roughly speaking, that particulars are distinctive in being individuated by their spatiotemporal locations, so that no two particulars (or, at least, no two particulars of the same kind) can exist in exactly the same place at the same time and no single particular can exist in two wholly distinct places at the same time. (Two places are 'wholly distinct' just in case they share no common spatial part, that is, just in case they do not 'overlap' spatially.) A single universal, by contrast, is said by such philosophers to be capable of existing in two wholly distinct places at the same time and any number of universals are said to be capable of existing in exactly the same place at the same time.

Some illustrative examples of paradigm instances of the two categories will be helpful here. Consider, then, a paradigm particular such as a particular material object of a certain kind—for example, a particular chair made entirely of some uniformly blue plastic material. And suppose that this chair fully and exactly occupies a certain region of space at a certain time, so that the region of space in question has exactly the same shape and size as the chair. Then, it seems correct to say, this very chair cannot *also* fully and exactly occupy some other, quite distinct region of space at this same time. Furthermore, it would seem that it cannot be the case that another chair, exactly like this one, simultaneously occupies the very same region of space which this one occupies at the time in question. By way of contrast, consider a paradigm universal, such as the property of blueness that is possessed by the particular chair just mentioned. Then it will be said, by the philosophers in question, that although this blueness—like the chair itself—fully and exactly occupies the region of space which is occupied by the chair, the very same blueness may *also* at the same time occupy an entirely distinct region of space, such as the region of space occupied at that time by any other particular chair made of plastic material of exactly the same shade of blue. Furthermore, it will be said that many other universals may exist in the very same regions of space as are occupied by this blueness, such as the various other properties of any of these particular blue chairs.

There is a technical difficulty with the foregoing proposal, however, which emerges from our discussion in the previous chapter of the possibility of time travel. If time travel into the past is possible, then it should be possible, in principle, for a particular blue chair to be 'sent back in time' to a time and place at which it formerly existed. Of course, it plausibly cannot be sent back to *exactly* the same place as the place it occupied at some earlier time, because then it would 'collide' with its earlier self. But it could perhaps be sent back to another nearby place which was not then occupied by any other material object. In that case, however, one and the same particular chair would exist in two wholly distinct places at the same time—which, according to the foregoing proposal, is something that only a universal can do. One solution, it would seem, is to modify the proposal in line with the doctrine of temporal parts (see Chapter 3) and say only that a particular cannot be *wholly present* in two different places at the same time—implying by this that if a particular is in two wholly distinct places at the same time, then this can only be in virtue of the fact that one part of the particular is in one of those places while another part of it is in the other. (Conveniently, this caters not only for the possibility of time travel just mentioned, but also for the case of 'scattered' objects, which have different *spatial* parts—rather than different *temporal* parts—in two or more wholly distinct places at the same time: an example being, perhaps, a temporarily dismantled watch. Indeed, of course, even ordinary, *unscattered* particulars, such as a fully assembled watch, have different spatial parts in two or more wholly distinct places at the same time.) By way of contrast, it may now be said that what is distinctive of a universal is that it can indeed be wholly present in two different places at the same time.<sup>1</sup>

But even with this amendment, the foregoing way of trying to distinguish between universals and particulars is open to serious objection, especially if one considers that there can be entities belonging to either of these categories which do not exist in space or time at all. Some philosophers, for instance, believe in the existence of particular 'Cartesian egos', or immaterial souls, which exist in time but not in space. And many philosophers believe in the existence of *abstract* particulars, such as particular mathematical objects (numbers and sets, for example) and particular propositions, which they conceive of as existing neither in space nor in time. (I shall say more about the distinction between 'abstract' and

<sup>1</sup> See further D. M. Armstrong, *Universals: An Opinionated Introduction* (Boulder, Colo.: Westview Press, 1989), 98–9.

'concrete' entities in the next chapter.) Furthermore, many philosophers who believe in the existence of universals—such as the property of blueness—consider that all universals are themselves abstract entities and consequently do not exist in space or time. And even if one believes that the properties of material particulars, such as the blueness of a blue chair, exist in space and time, one can hardly suppose that this is true of the properties of abstract particulars—if there are such particulars—such as a particular number's property of being a prime or a particular proposition's property of being true (assuming truth to be a property of propositions). Accordingly, one cannot consistently adhere to a spatiotemporal account of the distinction between universals and particulars, of the sort outlined earlier, unless one holds that everything that there is *or could be* necessarily exists in space and time—in other words, unless one holds that only *concrete*, not abstract, entities can exist. Notice that it is not enough merely to hold that only concrete entities *do* exist, for once one admits that it is so much as *possible* for there to be either universals or particulars which do not exist in space or time, one cannot regard a spatiotemporal criterion of the distinction between universals and particulars as being adequate. But, surely, it cannot be right to insist upon an account of this distinction which imposes such a strong constraint on what is held to be metaphysically possible. To insist upon such a criterion would be to raise an insuperable barrier to discussion and argument between oneself and a large number of other philosophers whose metaphysical views cannot be dismissed out of hand. I conclude that we are obliged to seek some alternative and metaphysically more neutral way of drawing the distinction between universals and particulars, if this is a distinction that we wish to endorse.

### Instantiation and an alternative account

One such alternative is to define the distinction between universal and particular in terms of the relationship of *instantiation* in which one entity may stand to another.<sup>2</sup> Every particular, it may be said, instantiates—is an instance of—some universal. For example, a particular chair is an instance of the kind *chair* or (if one prefers this way of putting it) instantiates the property of *being a chair*. Universals may themselves be instances of other,

'higher-order' universals. For example, we might plausibly say that the property of blueness is an instance of the second-order property of *being a colour property*. After all, just as it is true of a particular chair that it is *a chair*, so it is true of blueness that it is *a colour property*. Accordingly, if we may take the predicates 'is a chair' and 'is a colour property' to denote certain properties—universals—then it would seem that the first of these predicates denotes a 'first-order' property (a property which may be possessed only by particulars) while the second denotes a 'second-order' property (a property which may be possessed only by a first-order property). Suppose we accept all this. Then, it seems, we can define the distinction between universal and particular in the following way. A *particular* is an entity which, although it can instantiate (be an instance of) another entity, cannot itself be instantiated by any other entity (cannot have instances). By contrast, a *universal* is an entity which can not only instantiate (be an instance of) another entity, but can also be instantiated by another entity (can have instances).

There may appear to be a technical difficulty with this proposal too. Some philosophers want to maintain that there can be properties—that is, universals—which lack any instances, not just contingently but *necessarily*. Contingently uninstantiated universals pose no problem for the proposal, for the proposal was only that any universal *can* have instances, unlike any particular. It could allow, therefore, for the existence, say, of colour properties which no object, as a matter of contingent fact, has ever possessed—just so long as some object *could* possess them. But if a philosopher wants to say that there exists, for example, such a universal as the property of *being both round and square*, then he must concede that there are universals which *necessarily* lack instances (because, obviously, no object can be both round and square). Hence, such a philosopher could not endorse the proposal now under consideration. Perhaps, however, he could say instead that a universal is something which either can have instances itself, or else is somehow entirely 'composed by' or 'constructed out of' entities which can have instances. This would allow him to acknowledge that the property of being both round and square is a universal, on the grounds that it is a 'conjunctive' property whose conjuncts (the property of being round and the property of being square) are both universals according to the modified criterion (because *they* can both have instances). Of course, this solution will not work for 'simple' universals which necessarily lack instances, though it is hard to see why anyone should think that such properties exist. On the face of it, the foregoing modification gets around the difficulty,

<sup>2</sup> This is the view I favour myself: see my *The Possibility of Metaphysics: Substance, Identity, and Time* (Oxford: Clarendon Press, 1998), 155.

although it might seem to exchange that difficulty for another one. This is because there are some philosophers who maintain that particulars are reducible to combinations (or 'bundles') of universals. The problem is that such a combination of universals would appear to be something which is, as I put it a moment ago, entirely 'composed by' or 'constructed out of' entities which can have instances—so that, according to the modified proposal, it will qualify as a *universal*, rather than as a particular. However, perhaps this problem could be circumvented by distinguishing two different ways in which something can be entirely composed by or constructed out of entities which can have instances—one way which is exemplified in the case of the property of being both round and square, and a different way in which particulars are supposedly 'composed by' or 'constructed out of' universals—and by then insisting that only the first of these ways is to be invoked for the purposes of the modified proposal. Alternatively, perhaps it could be urged, quite plausibly, that the philosophers who maintain that particulars are 'reducible' to combinations of universals are simply committed, whether they like it or not, to saying that everything that can exist really *is* some sort of universal, including so-called 'particulars'. Either way, it seems to me that something like the original proposal, or some modification of it, whereby the distinction between universals and particulars is defined in terms of the notion of instantiation, is probably defensible. (Notice that, according to that original proposal, the distinction between universals and particulars is certainly mutually exclusive, but will only be exhaustive on the assumption that every entity whatever can instantiate some other entity. If there are entities which *cannot* instantiate any other entity, then they will qualify neither as universals nor as particulars according to the proposed definition. Whether, and if so how, we should modify the proposal to accommodate such entities, if they exist, are questions that I shall not pursue here.)

### Nominalists versus realists

Having decided, at least for present purposes, how best to define the distinction between universals and particulars, let us now consider some rival doctrines concerning the existence of and relations between entities putatively belonging to these two ontological categories. Some philosophers—who are usually, though somewhat misleadingly, described as 'nominalists'—believe that only particulars exist. Others believe that,

whether or not particulars exist, universals certainly do exist—and these are usually described (again, somewhat misleadingly) as 'realists'. Nominalists believe what they do for various reasons, not only purely metaphysical reasons but also ones which are partly epistemological or semantic in character. Some hold, for instance, that it is ontologically extravagant to posit the existence of universals in addition to that of particulars, or that universals are metaphysically repugnant in some way. Some maintain that universals, if they existed, would have such a nature that we could have no knowledge of them, so that nothing that we do know can give us reason to believe in their existence. Some consider that universals are mistakenly invoked by realists to explain semantic features of language which can be quite adequately explained in other ways. On the opposing side of the debate, some realists contend that these semantic features—more specifically, the meanings of predicative expressions and of certain kinds of general term—can indeed only be explained by invoking universals. Some believe that universals must be invoked to explain our psychological capacity to recognize, classify, and group together various particulars. And some urge that universals must be invoked to explain the ontological status of laws of nature, which they conceive to involve relationships between universals.<sup>3</sup> There is not space in this chapter to consider all of these aspects of the debate between nominalists and realists, however, so I shall focus principally on the semantic considerations. (Some of the other considerations will be aired in the next chapter.)

### Predicates and properties

As far as semantic considerations are concerned, the key idea from the realist point of view is that a *predicate* typically denotes a *property*, the latter being conceived as a universal (although it may and indeed should be conceded by the realist that not every meaningful predicate denotes a property). Thus, to use previous examples, the predicate 'is a chair' supposedly denotes the property of *being a chair* and the predicate 'is blue' supposedly denotes the property of *being blue*, or *blueness*. Indeed, the latter term, 'blueness', is not a predicate at all, but a noun or name—and as

<sup>3</sup> See, especially, D. M. Armstrong, *What is a Law of Nature?* (Cambridge: Cambridge University Press, 1983), pt. 2. For a more general survey of the debate between realism and nominalism, see D. M. Armstrong, *Nominalism and Realism: Universals and Scientific Realism, Volume 1* (Cambridge: Cambridge University Press, 1978).

which they are replaced by corresponding predicates. Take, for instance, the sentence 'Blueness is a cooler colour property than redness', or the sentence 'Blueness is more similar to greenness than it is to redness'. It is far from evident how these sentences could be paraphrased by logically equivalent sentences employing no general colour terms but, instead, only the specific colour predicates 'is blue', 'is red', and 'is green', together perhaps with the non-specific colour predicate 'is coloured'.<sup>6</sup>

## Resemblance classes and resemblance nominalism

Another and more positive way in which the nominalist may respond to the realist's challenge is to try to offer an alternative and nominalistically acceptable account of the meaning of general terms like 'blueness' and their corresponding predicates, according to which these expressions do, after all, denote entities of some sort, but entities that are all uncontroversially *particulars*. For example, accepting that *sets* or *classes* are *particulars*, the nominalist may contend that 'blueness', say, denotes a certain set or class of particulars. Which set or class, though? The obvious thing to say is that 'blueness' (and, likewise, the corresponding predicate, 'is blue') denotes the class of all *blue* particulars. (For present purposes, we may treat the terms 'set' and 'class' as synonymous.) But what determines whether a given particular belongs to this class? The nominalist can hardly say, on pain of uninformative circularity, that a particular belongs to the class of blue particulars if and only if the particular in question *is blue*. Nor can he say, on pain of conceding victory to the realist, that a particular belongs to the class of blue particulars if and only if the particular in question *pos-* sesses the property of being blue, or *blueness*. But perhaps he can say, without circularity, that a particular belongs to the class of blue particulars if and only if the particular in question belongs to a certain *resemblance class* of particulars—a class which can consequently be identified with the class of blue particulars. Nominalists who adopt this line of thought are, unsurprisingly, called 'resemblance nominalists'.

There are various ways in which one might attempt to specify, non-circularly, a resemblance class of particulars which can be identified with

<sup>6</sup> See further Frank Jackson, 'Statements about Universals', *Mind* 86 (1977), 427–9, reprinted in Mellor and Oliver (eds.), *Properties*.

such, one might naturally suppose, an expression which refers to some really existing entity: plausibly, the very same entity as is supposedly denoted by the predicate 'is blue'. After all, instead of saying 'This chair is blue', we can say 'Blueness characterizes this chair': these two sentences appear to be logically equivalent.<sup>4</sup> However, what one should make of this logical equivalence, accepting that it obtains, is a matter for some debate.<sup>5</sup> The realist may say that, since 'Blueness characterizes this chair' clearly makes reference to—and therefore implies the existence of—a universal (namely, *blueness*), it follows that the logically equivalent sentence 'This chair is blue' likewise implies the existence of that same universal, which it can apparently do only in virtue of the fact that the predicate, 'is blue', denotes that universal. The nominalist, on the other hand, may urge that the sentence 'This chair is blue' makes reference to—and hence implies the existence of—only *one* entity, which is a particular, namely, *this chair*. Then he may draw on the putative fact that 'Blueness characterizes this chair' is logically equivalent to 'This chair is blue' to argue that the former sentence likewise implies the existence of only one entity, which is a particular. To this, however, the realist may reply that the nominalist now owes us an account of the meaning of the predicate 'is blue', given that it is not to be taken to denote a certain universal, namely, *blueness*.

There are various things that a nominalist may say in response to this challenge. One is to urge that the realist's challenge is based on a mistaken view of meaning, which sees words and phrases as having meaning only in virtue of their denoting or signifying *entities* of certain kinds—a view which might be correct as far as some names and noun phrases are concerned (those that are used to refer to particulars), but which does not apply to predicative expressions, nor to general terms (like 'blueness') whose use can apparently be replaced by the use of corresponding predicates (like 'is blue'). Here the realist may contend that the use of such a general term *cannot*, in fact, always be replaced by the use of a corresponding predicate. He concedes that it can be so replaced, of course, in a sentence such as 'Blueness characterizes this chair', which he accepts is logically equivalent to 'This chair is blue'. But for other sentences involving such general terms it is not so easy to find logically equivalent sentences in

<sup>4</sup> See further F. P. Ramsey, 'Universals', *Mind* 34 (1925), 401–17, reprinted in his *The Foundations of Mathematics and Other Logical Essays* (London: Kegan Paul, 1931) and in D. H. Mellor and Alex Oliver (eds.), *Properties* (Oxford: Oxford University Press, 1997).

<sup>5</sup> See further W. V. Quine, 'On What There Is', *Review of Metaphysics* 2 (1948), 21–38, reprinted in his *From a Logical Point of View*, 2nd edn. (Cambridge, Mass.: Harvard University Press, 1961) and in Mellor and Oliver (eds.), *Properties*.

the class of blue particulars. One way would be to select some blue particular as a *paradigm*—for instance, a particular sapphire—and specify the class in question as being the class of all particulars which resemble the paradigm (or better, perhaps, the class of all particulars which resemble the paradigm at least as much as they resemble the paradigms for other resemblance classes). But there are obvious objections to this sort of strategy. One is that we need to be told, non-circularly, on what basis the relevant paradigm is to be selected—and it is not clear how this can be done. Another is that there appears to be no guarantee that the method will result in the same resemblance class being specified no matter which paradigm happens to be selected, which seems unsatisfactory. More fundamentally still, however, it may be objected that resemblance between particulars is always resemblance *in some respect*—for instance, in respect of size, or shape, or colour—and that unless the respect in which particulars in the relevant resemblance class are meant to resemble the paradigm is appropriately specified, an appropriate resemblance class will not be specified by the proposed method. Thus, in the case under consideration, it must be specified that the relevant resemblance class—the class which is to be identified with the class of blue particulars—is the class of all particulars which resemble the paradigm *in respect of its colour*. For, clearly, it would be inappropriate, for example, to include in the resemblance class some particular which resembles the paradigm in respect of its size or shape, but which is green or red in colour rather than blue. However, such talk of ‘respects’ in which particulars resemble paradigms seems to involve nothing less than reference to *universals* and thus effectively concedes victory to the realist. For instance, to say that some particular resembles the paradigm ‘in respect of its colour’ involves, surely, a quite blatant reference to *the colour* of the paradigm, which is a *property*—a universal.

Another way in which one might attempt to specify, non-circularly, a resemblance class of particulars which could be identified with the class of blue particulars is this. One might suggest that the resemblance class in question is a maximal class of particulars which are such that *any two of them resemble each other*. What is meant by calling such a resemblance class ‘maximal’ is simply that it is not a subclass of any larger such resemblance class; and maximality is required because *every* blue particular must evidently be included in the class of blue particulars. This suggestion has the advantage of doing away with ‘paradigms’ altogether. However, there is another apparent defect in the notion of a ‘resemblance class’ that is being invoked here. This can be brought out by reflecting on the fact that, for

example, any *red* particular resembles an *orange* particular—because, as the realist would put it, their colours are similar. (It is true, of course, that a red particular does not resemble an orange particular *exactly*—but, then, two red particulars may not resemble each other exactly either, for one may be scarlet while the other is crimson.) One implication of this fact is that, in a universe containing only red and orange particulars, the class of all these particulars will qualify as a maximal resemblance class in the sense now being understood, even though there is no colour property that the realist would say is possessed by all of these particulars. Another is that, in such a universe, neither the class of red particulars nor the class of orange particulars will qualify as a maximal resemblance class (because each is a subclass of a larger resemblance class), even though the realist would say that there is a colour property which is possessed by all and only the particulars belonging to the first class and another colour property which is possessed by all and only the particulars belonging to the second class. These implications, however, clearly undermine the nominalist’s suggestion that his maximal resemblance classes are suitable substitutes for the realist’s universals. What the nominalist needs, it would seem, is a definition of ‘resemblance class’ which both takes into account the fact that resemblance is always a matter of *degree* and is sensitive to the fact that no red particular resembles, at least in respect of its colour, any orange particular more than it resembles another red particular.

## Some problems for resemblance nominalism

In the light of these desiderata, the nominalist might suggest that the sort of resemblance class with which we could more plausibly identify the class of blue particulars is a maximal class of particulars which are such that *any two of them resemble each other at least as much as either of that pair resembles any particular which is not a member of the class*. However, this suggestion still falls foul of the fact that resemblance between particulars is always resemblance ‘in some respect’, which gives rise to the following problem. Suppose, to make things simple, that the universe contains just five objects,  $O_1$  to  $O_5$ , and suppose that each of them has a size (large or small), a shape (round or square), and a colour (blue or red). More specifically, suppose that these objects have the following characteristics:  $O_1$  is large, round, and blue;  $O_2$  is small, square, and red;  $O_3$  is large, square, and



TABLE 19.1

	$O_1$	$O_2$	$O_3$	$O_4$	$O_5$
size	large	small	large	small	small
shape	round	square	square	round	round
colour	blue	red	blue	red	blue

blue;  $O_4$  is small, round, and red; and  $O_5$  is small, round, and blue. This information is set out more perspicuously in Table 19.1. Now, we know which class is the class of blue particulars in this universe: it is the class whose members are  $O_1$ ,  $O_3$ , and  $O_5$ . But the question is this: is this class a resemblance class in the sense just defined? Well,  $O_1$  resembles  $O_3$  in being large and blue,  $O_1$  resembles  $O_5$  in being round and blue, and  $O_3$  resembles  $O_5$  just in being blue. This means that  $O_1$  and  $O_3$  do indeed resemble each other at least as much as either of them resembles anything not belonging to the class in question: for the things which do not belong to the class are  $O_2$  and  $O_4$ —and whereas  $O_1$  resembles  $O_3$  in both size and colour,  $O_1$  resembles  $O_2$  in no way at all and  $O_4$  only in shape, while  $O_3$  resembles  $O_2$  only in shape and  $O_4$  in no way at all. Similarly,  $O_1$  and  $O_5$  resemble each other at least as much as either of them resembles anything not belonging to the class in question. However,  $O_3$  and  $O_5$  do *not* resemble each other at least as much as either of them resembles anything not belonging to that class: for whereas  $O_3$  and  $O_5$  resemble each other only in colour,  $O_4$  and  $O_5$  resemble each other in both size and shape and thus *more* than  $O_3$  resembles  $O_5$ . So the answer to our question is 'No'.

Another problem may be discerned by considering the universe that is depicted if we delete  $O_1$  from Table 19.1. to give Table 19.2. Consider the class of *red* particulars in this reduced universe. It is the class whose members are  $O_2$  and  $O_4$ . Now, this class clearly is a resemblance class in the sense

TABLE 19.2

	$O_2$	$O_3$	$O_4$	$O_5$
size	small	large	small	small
shape	square	square	round	round
colour	red	blue	red	blue

just defined, because  $O_2$  and  $O_4$ , which resemble each other in both size and colour, evidently resemble each other at least as much as either of them resembles anything not belonging to the class in question. However, the class of red particulars in this universe is not a *maximal* resemblance class, because it is a subset of a larger such class, namely, the class whose members are  $O_2$ ,  $O_4$ , and  $O_5$ , the class of small particulars. For  $O_2$  and  $O_4$ , as we have already noted, resemble each other in both size and colour,  $O_4$  and  $O_5$  resemble each other in both size and shape, and  $O_2$  and  $O_5$  resemble each other in size: whereas  $O_2$  resembles  $O_3$  only in shape,  $O_3$  resembles  $O_4$  in no way at all, and  $O_3$  resembles  $O_5$  only in colour. This problem (sometimes referred to as the problem of 'companionship') arises partly because, in this universe, every red particular is a small particular, even though not every small particular is a red particular.<sup>7</sup>

Yet another problem which is even worse, in some ways, than either so far mentioned is one which is manifested if we consider the universe that is represented by deleting both  $O_1$  and  $O_4$  from Table 19.1, as in Table 19.3. Clearly, the class whose members are the particulars  $O_2$ ,  $O_3$ , and  $O_5$  constitutes a resemblance class, in the sense defined earlier; that is, it is a class of particulars which are such that any two of them resemble each other at least as much as either of that pair resembles any particular which is not a member of the class (there are, of course, no particulars which are not members of the class in this case). And it is obviously 'maximal', in the sense that it is not a subclass of any larger such resemblance class. Indeed, any two members of the class do clearly resemble one another, for  $O_2$  and  $O_3$  resemble each other in shape,  $O_3$  and  $O_5$  resemble each other in colour, and  $O_2$  and  $O_5$  resemble each other in size. However, there is no size, shape, or colour which is common to *all* the particulars of this class and consequently the class cannot be regarded as one that is denoted by any of the

TABLE 19.3

	$O_2$	$O_3$	$O_5$
size	small	large	small
shape	square	square	round
colour	red	blue	blue

<sup>7</sup> The problem was named by Nelson Goodman: see his *The Structure of Appearance*, 3rd edn. (Dordrecht: D. Reidel, 1977), II.6-17.

predicates or general terms used to describe particulars in the universe in question. But the whole point of the nominalist's appeal to maximal resemblance classes of particulars was to propose them as being the entities denoted by predicates or general terms, in place of the universals which, according to the realist, such predicates and general terms denote. What the present problem (sometimes referred to as the problem of 'imperfect community') indicates is that maximal resemblance classes as currently defined are entirely unsuited to this proposed role.<sup>8</sup> (I should remark, incidentally, that even if, as was briefly entertained earlier, a 'resemblance class' is defined more simply as a class of particulars any two of which resemble each other—without stipulating that they resemble each other at least as much as either of them resembles anything which is not a member of the class—the problem of imperfect community evidently still arises, as does the problem of companionship. But it is worth seeing that these problems also arise for the more complex definition with which we just have been working.)

## The bundle theory

What we have been looking at, in effect, are various attempts to reduce universals to, or eliminate them in favour of, particulars, by substituting certain classes of particulars for the realist's universals—classes themselves being particulars, albeit abstract ones. From what we have seen of them, these attempts look unpromising. However, even less promising, I think, are attempts to reduce particulars to, or eliminate them in favour of, universals, by substituting 'bundles' of universals for particulars.<sup>9</sup> If such 'bundles' are understood to be sets or classes and the latter are still conceived as being particulars, albeit abstract ones, then the strategy is self-evidently doomed to failure as it stands—though perhaps the talk of 'bundles' can be reconstrued in a non-particularist fashion. Another and more serious difficulty is that the strategy appears to commit its adherents

<sup>8</sup> This problem was also named by Nelson Goodman: see *The Structure of Appearance*, 117–19. For further discussion and an attempted solution, see Gonzalo Rodríguez-Pereyra, 'Resemblance Nominalism and the Imperfect Community', *Philosophy and Phenomenological Research* 59 (1999), 965–82.

<sup>9</sup> For discussion, see James Van Cleve, 'Three Versions of the Bundle Theory', *Philosophical Studies* 47 (1985), 95–107, reprinted in Stephen Laurence and Cynthia Macdonald (eds.), *Contemporary Readings in the Foundations of Metaphysics* (Oxford: Blackwell, 1998) and in Steven D. Hales (ed.), *Metaphysics: Contemporary Readings* (Belmont, Calif.: Wadsworth, 1999).

to an implausibly strong version of the principle of the identity of indiscernibles. For it seems at least logically possible that there should be two distinct particulars which exemplify all and only the same universals, such as two exactly similar material spheres in an otherwise empty universe: and yet, if any 'particular' is to be identified with the 'bundle' of universals which it would ordinarily be said to exemplify, then it appears that these spheres must in fact be identical with each other, making them one sphere rather than two.<sup>10</sup> So it would seem that reductionism or eliminativism of either variety has little chance of success and we should endorse some form of non-reductive pluralism, according both to universals and particulars an equally fundamental ontological status. However, such a conclusion would be premature at this stage of our discussion, because we have so far not taken into account an important species of particularism, or nominalism, which escapes the difficulties which we observed earlier when discussing resemblance nominalism. There we were assuming that the 'nominalist' is someone who regards properties as being *universals* and accordingly as *entia non grata* and candidates for reduction or elimination. But an alternative position is to regard properties themselves as *particulars* of a special sort, currently often called 'tropes'.<sup>11</sup>

## Trope theory

The trope theorist holds that the blueness of a particular blue chair is something that really exists just as much as the chair itself does, but that it is not something that can be identified with the blueness of any other blue chair, even if the two chairs resemble each other exactly in respect of the colour that each of them has. In short, on this view, each blue chair possesses its own distinct property of blueness, which is a particular, just as the chair itself is a particular. So what, according to such a theorist, does the predicate 'is blue' or the general term 'blueness' denote? They cannot, of course, be taken to denote any one particular blueness, such as the blueness of this chair or the blueness of that chair. But what they could plausibly be taken to denote is a resemblance class of tropes, that is, a class of tropes any

<sup>10</sup> See Max Black, 'The Identity of Indiscernibles', *Mind* 61 (1952), 152–64, reprinted in his *Problems of Analysis: Philosophical Essays* (London: Routledge and Kegan Paul, 1954). For further discussion, see Dean W. Zimmerman, 'Distinct Indiscernibles and the Bundle Theory', *Mind* 106 (1997), 305–9.

<sup>11</sup> See Keith Campbell, *Abstract Particulars* (Oxford: Blackwell, 1990).



two of which resemble each other at least as much as either of that pair resembles any trope which is not a member of the class. Because tropes are conceived to be properties, this variety of resemblance nominalism does not seem to run into the difficulties (such as those of companionship and imperfect community) which beset the varieties of resemblance nominalism discussed earlier, which regarded a member of a resemblance class as a particular which a *multiplicity* of different predicates might be taken to describe—such as ‘is blue’, ‘is round’, ‘is large’, and so on. Any blue trope is, clearly, properly describable by the predicate ‘is blue’—but not, it would seem, by a shape predicate, such as ‘is round’, nor by a size predicate, such as ‘is large’. Rather, if we are in the presence of a particular material object, such as a cushion, which is blue, round, and large, this will be because that object simultaneously possesses a blueness trope, a roundness trope, and a largeness trope. Indeed, what the trope theorist will say is that the cushion just is a certain ‘bundle’ of tropes, which includes a blueness trope, a roundness trope, and a largeness trope. Thus, the trope theorist not only has a way of reducing universals to, or eliminating them in favour of, resemblance classes of particulars (such classes themselves being particulars), s/he also has a way of reducing particulars which possess properties—such as chairs and cushions—to ‘bundles’ of particulars, namely, to ‘bundles’ of the particular properties or tropes which these particulars ‘possess’. ‘Possession’ of such a property by a particular now becomes identified with the inclusion of that property in the ‘bundle’ of properties which allegedly constitutes the particular in question.

## The problem of resemblance

The reason, then, why a resemblance nominalism founded on tropes seems to escape the difficulties besetting a resemblance nominalism founded on ‘concrete’ particulars—entities like chairs and cushions—is that whereas in the latter case the particulars appealed to may resemble each other in one ‘respect’ but not in another, in the former case the particulars appealed to resemble each other *unqualifiedly* or *simpliciter*, even if such resemblance is still a matter of degree. A red trope may resemble another red trope to a very high degree (indeed, to the highest possible degree if they resemble each other exactly) and resemble an orange trope to a much lesser degree: but it is not necessary to say in what ‘respect’ these tropes resemble one another, for there is no other dimension of comparison than

that of colour in which any two colour tropes may be said to resemble one another.

However, although trope nominalism has this advantage over a resemblance nominalism founded on ‘concrete’ particulars, both forms of resemblance nominalism face apparent difficulties arising from the fact that resemblance itself, being a relation in which many different pairs of entities can stand to one another, would seem to be a universal. The realist’s universals that we have so far been considering are all *properties*—such as blueness and roundness—which single particulars are said to exemplify. But other universals are *relations* which are exemplified by, for example, (ordered) pairs or triples of particulars which stand to one another in those relations—such as, perhaps, the relation of *being taller than* in which Mount Everest stands to Mont Blanc or the spatial relation of *betweenness* in which Leeds stands to London and Edinburgh. And, on the face of it, *resemblance* is just such a universal: a relation which is exemplified by pairs of particulars which resemble one another (either *simpliciter* or in some ‘respect’). It seems, then, that to be consistent, a resemblance nominalist must regard resemblance itself as being reducible to, or eliminable in favour of, a certain class of pairs of particulars—just as, for example, the realist’s property of blueness is supposedly reducible to, or eliminable in favour of, a certain class of particulars (namely, the class of blue particulars). The class in question will, of course, be the class of pairs of *resembling* particulars. But, as with the class of blue particulars, it would be circular and uninformative for the nominalist merely to specify the class in question in that way. He must try to specify it non-circularly as being a certain maximal *resemblance class* of pairs of particulars. But then the problem seems to be that talk of ‘resemblance’ is obviously unavoidable for the resemblance nominalist, being the basis of his entire strategy for doing away with the realist’s universals: so that if that strategy has to be applied by the nominalist to the relation of resemblance itself, it will involve him in either a vicious circle or else a vicious infinite regress.<sup>12</sup>

One possible way out of this difficulty for the nominalist is for him simply to deny that resemblance should be regarded, even by the realist, as an ordinary relation—that is, as a relational *universal*—on a par with such a spatial relation as betweenness. Very arguably, the realist should regard resemblance as a so-called ‘internal’ relation, on the ground that facts

<sup>12</sup> See Bertrand Russell, *The Problems of Philosophy* (London: Williams and Norgate, 1912), ch. 9, reprinted in Mellor and Oliver (eds.), *Properties*.

facts about the properties—conceived as *universals*—which those particulars exemplify (their colours and shapes and so forth). But since such a resemblance nominalist wants to substitute *resemblance classes* of concrete particulars for such universals, he is committed to regarding facts about resemblance between such particulars as being *more*, not *less*, fundamental than facts about the 'properties' which those particulars putatively possess. The trope theorist is not in this uncomfortable situation because, while he too may and plausibly should regard resemblance as being an internal relation, he regards it as being primarily a relation between *tropes*—and consequently he can say that facts about resemblance are entirely founded on and determined by the intrinsic characters of tropes, thereby avoiding the need to postulate the existence of any relational tropes of *resemblance* in order to generate his resemblance classes of tropes. This is not to say that trope nominalism may not be subject to other difficulties—difficulties concerning, for instance, the individuation of tropes and how 'bundles' of them can be understood to constitute concrete particulars—but it does seem safe to conclude that, if one aspires to defend some form of resemblance nominalism in order to avoid having to accept the existence of universals, then trope nominalism is probably the most promising option.

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about resemblance between entities are entirely founded on and determined by facts about the properties of the entities in question.<sup>13</sup> Indeed, the relation of *being taller than*, unlike that of betweenness, is clearly an internal relation in this sense, because whether or not one object is taller than another is determined entirely by the *heights* of the two objects. But similarly, it may be said, the realist should acknowledge that whether or not two concrete particulars, such as two chairs, resemble each other in respect of their colour is determined entirely by the *colours* of the two particulars. Certainly, he should acknowledge that if two chairs possess exactly *the same* colour (exemplify the same colour universal), then that is sufficient to determine that they resemble each other exactly in respect of their colour. And maybe he should also say that a degree of partial resemblance between two concrete particulars in respect of their colour is likewise determined by a partial identity of the colours of those particulars. For instance, perhaps he should account for the partial resemblance in colour between a reddish-orange cushion and a yellowish-orange cushion in terms of each of these cushions having a colour which is partly the same (orange) and partly different (red in the one case and yellow in the other). But if the realist should acknowledge that facts about resemblance between concrete particulars are entirely founded on and determined by facts about the properties of the particulars in question, then not even the realist should regard resemblance as an ordinary relation—that is, as being one of his universals. And that being so, the nominalist is not called upon to apply his strategy for reducing or eliminating universals to resemblance itself. (Here it is worth emphasizing that the realist should not, in any case, regard every meaningful predicate as denoting a universal, for a reason remarked upon in Chapter 6. For to do so leads inevitably to a logical contradiction via a version of Russell's paradox. Simply consider the meaningful predicate 'is non-self-exemplifying' and then ask whether the property that it putatively denotes exemplifies itself or not.<sup>14</sup> Hence, the mere fact that the predicate 'resembles' is meaningful does not commit the realist to regard it as denoting a universal.)

Unfortunately, this sort of consideration is not ultimately of much help to a resemblance nominalism founded on concrete particulars, because, in the case of such particulars, the realist is now envisaged as explaining facts about their resemblance as being entirely founded on and determined by

<sup>13</sup> See further, Campbell, *Abstract Particulars*, 37 ff.

<sup>14</sup> See further, Michael J. Loux, *Metaphysics: A Contemporary Introduction* (London: Routledge, 1998), 34 ff.