The Particular–Universal Distinction: A Dogma of Metaphysics?

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Is the assumption of a fundamental distinction between particulars and universals another unsupported dogma of metaphysics? F. P. Ramsey famously rejected the particular–universal distinction but neglected to consider the many different conceptions of the distinction that have been advanced. As a contribution to the (inevitably) piecemeal investigation of this issue three interrelated conceptions of the particular–universal distinction are examined: (i) universals, by contrast to particulars, are unigrade; (ii) particulars are related to universals by an asymmetric tie of exemplification; (iii) universals are incomplete whereas particulars are complete. It is argued that these conceptions are wanting in several respects. Sometimes they fail to mark a significant division amongst entities. Sometimes they make substantial demands upon the shape of reality; once these demands are understood aright it is no longer obvious that the distinction merits our acceptance. The case is made via a discussion of the possibility of multigrade universals.

1. Introduction

1.1 An unsupported dogma?

'There are two basic kinds of entity with which metaphysics is concerned, the *X*s and *Y*s. So profound are the differences between the *X*s and the *Y*s that nothing can be an *X and* a *Y*. So fundamental is the distinction between *X*s and *Y*s that there is no (non-empty) possible world where *X*s and *Y*s fail to be the basic kinds of entity there are.' Presented with so bald a metaphysical statement we should rightly ask, why so? We should want to know what grounds there are for assuming the existence of so fundamental a dualism, deeper even than the dualism between mind and body. We should wonder whether we have been presented, as Quine once remarked of another distinction, with an unsupported dogma, a metaphysical article of faith.

If, however, the statement had begun 'There are two basic kinds of entity, the particulars and the universals' then we should likely have responded differently. The statement should likely have appeared obvious, part of the philosophers' ABC, the expression of a distinction that

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requires no collusion amongst our intellectual community to secure assent. Of course there are nominalists who deny that there are universals and realists who, unwilling to admit unknowable substrata, deny that there are particulars. But surely it is near enough obvious that *if* there are particulars and universals *then* they must belong to radically different kinds, and consequently the distinction between them must be necessary and exclusive.

Is this really so? Does it really follow straightaway from the admission of particulars and universals that the distinction between them is necessary and exclusive? A universal is traditionally conceived as a one-over-many; the universal *justice* as the one that unites the many different just acts but nothing else, the universal *white* as the one that unites the many different white things but nothing else. But once universals are admitted alongside particulars it takes only a little mental habituation to think of a particular as a one-over-many, as the one that unites many different universals. So far from illuminating a necessary and exclusive division, the traditional characterization of universals leaves us in the dark about whether there is a difference between particulars and universals.

Of course there are many other things metaphysicians say about particulars and universals that the crude slogan 'a universal is a one-over-many' does not capture; the suspicion is likely to linger that if only these more sophisticated pronouncements were heeded then the differences between particulars and universals would become evident enough. But where sophisticated pronouncements are called for, where there is little enough agreement about *which* pronouncements are the correct ones—for metaphysicians disagree about *how* to characterize particulars and universals—there a different suspicion should be aroused. We should be thrown on our guard, wary of what is said to be 'natural' or 'intuitive', 'simple' or 'obvious', wary lest dogmatic metaphysics take us in.

My purpose in this paper is to consider whether the assumption of a fundamental distinction between particulars and universals is an unsupported dogma of metaphysics. I will argue not only that the distinction is often affirmed in the absence of compelling grounds. I will also argue that the theory of universals is sometimes strengthened—rather than weakened—by the admission of a more flexible conception of the distinction.[1]

[1] Ramsey famously advanced scepticism about the particular–universal distinction in his 1925 *Mind* paper 'Universals'. He argued that the theory of universals was a 'great muddle', concluding that of all philosophers 'Wittgenstein alone has seen through this muddle and declared that about the forms of atomic propositions we can know nothing whatever' (1925, p. 30). 'Universals' remains the classic discussion of the particular–universal distinction. See Sahlin 1990, p. 192–202, Simons 1991 and MacBride 2005a, 2005b for more detailed, and contrasting, evaluations of Ramsey's arguments.

1.2 Three characterizations of the particular–universal distinction

The particular–universal distinction has been characterized in a bewildering variety of ways. Since different characterizations offer quite different grounds for assuming such a distinction to obtain a thoroughgoing investigation must proceed piecemeal. Nevertheless there are benefits to setting off in one rather than another direction. In this paper three interrelated characterizations of the particular–universal distinction will be examined:

(1) A characterization that appeals to the way in which particulars and universals are capable of being instantiated in facts with different *numbers* of constituents;

(2) Another that highlights the different ways in which particulars and universals enter into the *relational tie* of instantiation (exemplification); and

(3) A characterization that takes particulars to differ from universals because they are *complete* entities that enter into instantiation by saturating universals that are *incomplete* entities.

These three characterizations form a conceptual family. They appeal to the different ways particulars and universals lock together in *instantiation*. Moreover, drawing the particular–universal distinction in such terms avoids certain difficulties that confront alternative characterizations—to which frequent appeal is made—that focus upon the different relations entities bear to space and time.

Consider the latter kind of contrast (albeit roughly sketched): particulars are entities whose embodiment is restricted to a single location at any one time; universals are entities unrestricted in the number of distinct locations at which they may be simultaneously and wholly present. What is lacking in characterizations of this kind is that they cannot accommodate the possibility of particulars and universals that do not exist in space or time. This appears to be a possibility that our conceptual scheme can countenance and it would be unwise to rule out such entities from the start.[2] Why? Because there may be important work for particulars and universals that do not exist in space and time

[2] Russell reasoned in a similar way whilst fashioning one of his favoured accounts of the particular–universal distinction: 'And if predication is an ultimate relation, the best definition of particulars is that they are entities which can only be subjects of predicates or terms of relations, i.e. that they are (in the logical sense) substances. This definition is preferable to one introducing space or time, because space and time are accidental characteristics of the world with which we happen to be acquainted, and therefore are destitute of the necessary universality belonging to purely logical categories' (1911, p. 123).

in relation to the metaphysics and semantics of mathematics and mathematical science (to take just two important examples). And even if it turns out this work can be accomplished by other means and reality is uniformly concrete, the concepts of space and time may lack the relevant foundational character to ground the particular–universal distinction. After all space-time is itself constituted out of particulars and universals (space-time points and their spatio-temporal relations). Space-time may also fail to be physically fundamental, analysable instead in terms of more elementary particulars and universals.[3]

By contrast, characterizations of the particular–universal distinction that appeal to the different ways in which particulars and universals enter into instantiation avoid these shortcomings. For abstract and concrete entities enter alike into instantiation. Distinguishing between particulars and universals via their respective modes of instantiation raises the prospect of a univocal account of the particular–universal distinction that applies regardless of whether abstract entities are admitted alongside concrete ones, and regardless of whether the concepts of space and time enjoy the relevant foundational status.

Is there an account of this general kind that provides compelling grounds for assuming a division between particulars and universals that is (α) exclusive, serving to effect a division between all the particulars on the one hand and all the universals on the other, and (β) necessary, marking out a distinction so fundamental that it obtains at every possible world where there is any thing at all?

2. Numerical patterns of instantiation

2.1 Russell on universals

According to one familiar characterization, the distinction between particulars and universals arises from the different numerical patterns of instantiation in which they are respectively capable of figuring. Russell introduced this conception into the theory of universals in the second edition of *Principia Mathematica*.[4] He proposed that all atomic facts are of one or other of the forms:

(1) $R_1(x), R_2(x,y), R_3(x,y,z) \ldots$

[3] For a variety of different concerns about spatio-temporal characterizations of the particular–universal distinction see Ramsey 1925, p. 9, Ayer 1954, p. 3, Armstrong 1988, pp. 111–2, 1997, p. 109, Simons 1992, pp. 159–61, and MacBride 1998*a*, 2001.

[4] See Russell and Whitehead 1925, p. xix.

Then universals (R_1, R_2, R_3 …) may be characterized as entities that can only ever occur in facts with *n* constituents. By contrast, particulars (*x, y, z* …) may be characterized as entities that can occur in facts with any number of constituents. Some terminology is useful here. Let us call those entities that can only ever occur in instantiation with *n* other entities *unigrade* (where *n* may be finite or infinite). Unigrade entities have a definite *degree* or *adicity*; they are either monadic or dyadic or triadic … or *n*-adic. By contrast, entities that can enter into instantiation with differing numbers of other entities are not *n*-adic for any number. They may be called *multigrade* (following Leonard and Goodman 1940, p. 50). Then, according to this conception—hereby dubbed 'Russellian'—the particular–universal distinction arises from the fact that whereas universals are unigrade, particulars are multigrade.

The Russellian conception has won widespread adherence.[5] Nevertheless it is backed by a paucity of explicit argument. Russell himself neglected to provide any direct motivation for the view. This does not mean that this conception of the particular–universal distinction stands without need of justification. Different doubts about the Russellian conception may be distinguished. On the one hand, it may be doubted whether it is genuinely possible for the space of atomic facts to admit the variety of forms that (1) depicts. On the other hand, it may be accepted that there is such a variety of forms as (1) depicts but doubted whether (1) provides an exhaustive inventory of the types of facts there might be. To raise a doubt of the former kind is to question whether particulars are genuinely multigrade. To raise a doubt of the latter kind is to question whether universals are genuinely unigrade.[6]

Consider the possibility that the atomic facts necessarily exhibit the *same n*-adic form. For example, it may be that instantiation is inevitably an entirely two-fold or an entirely three-fold affair:

(2) $R_4(x), R_5(y), R_6(z) \ldots$

[5] Armstrong, for example, has influentially advanced the position over three decades. See his 1978b, pp. 82–3, 1989, p. 44 and 1997, p. 85.

[6] Whilst considering Russell's 1925 views, Ramsey raises the generic doubt that the facts may fail to exhibit the sequence of forms (1): 'This I admit may be found to be the case, but as no one can as yet be certain what sort of atomic propositions there are, it cannot be positively asserted' (Ramsey 1926, p. 72). It is unclear whether Ramsey entertained one or other of these specific doubts ((2)–(4)) or whether, for his purposes, he simply saw no point in distinguishing between them. There is some evidence to suggest that (2) may have been at the forefront of his mind. In 1924 Russell wrote that it could not be shown a priori but would require empirical investigation to determine that monism is false, i.e. that the possibility (2), where $x = y = z$, does not obtain (Russell 1924, pp. 338–9). I explore further the relationship between monism and Ramsey and Russell's views on universals in MacBride 2005a: pp. 97–104.

(3) $R_7(x,y)$, $R_8(y,z)$, $R_9(z,w)$ …

In such cases all the instantiated items will turn out to be unigrade (monadic in (2), dyadic in (3)); the unigrade–multigrade contrast will be unable to articulate an exclusive division between particulars and universals.[7] For the time being let us bracket the issue of whether particulars are genuinely multigrade. There is a further concern that needs to be raised.

The Russellian conception does not only assume that it is possible for relations of different degrees to exist. What is further assumed is that there could not be a multigrade universal (R_m) that occurs repeatedly in facts of the following different forms (or, more generally, a universal that is instantiated by different numbers of particulars on different occasions):

(4) $R_m(x)$, $R_m(x,y)$, $R_m(x,y,z)$ …

But if there are, or could be such universals, then clearly the distinction between unigrade and multigrade entities fails to mark a necessary and exclusive division between particulars and universals. So if the Russellian conception is to merit conviction some principled account is owed of whatever metaphysical mechanism it is that prevents multigrade universals from existing.

It is important to appreciate where the burden of proof lies in this debate. There is a general tendency amongst opponents of multigrade universals to assume that the Russellian doctrine of fixed degree must be the *default* position for universals. This view has become mainstream, fossilized in the textbook strata. This makes it appear as if the Russellian conception remains unsettled so long as it remains to be conclusively established that one or other example of a multigrade universal actually exists. But really matters are the other way around. For the Russellian does not merely maintain that there are no multigrade universals, but that there could be none. What's more, appearances sug-

[7] Armstrong (1978b, pp. 82–3 and 1997, pp. 86–7) argues against the possibility of (3) on the grounds that the rejection of monadic universals stands in tension with the doctrine that there can be no bare particulars. Were particulars to lack monadic properties, he argues, 'it would be hard to deny the metaphysical possibility, at least, of a particular that lacked non-relational properties *and* had no external relations at all to any other particulars'. But this begs the question. If it really is a necessary truth that particulars cannot be bare then there can be no possibility of entirely denuding particulars of their external relations, just as from Armstrong's point of view there can be no possibility of entirely removing their monadic properties. Armstrong's reasoning is underwritten by the additional modal thesis that distinct particulars are logically independent, capable of existing in isolation from one another. Since the thesis that (at least) some particulars are unigrade constitutes a denial of this modal thesis, further argument is needed before (3) can be dismissed.

gest that there are indefinitely many multigrade universals. We should not rest content until the Russellian has provided in principle assurance that such appearances inevitably deceive us.

2.2 Multigrade predicates

What are the appearances that suggest there are so many multigrade universals? Consider how, in general, universals are given to us. There are a great variety of theoretical roles that universals have been posited to perform—causal, nomological, semantical, mathematical etc.—and there are a corresponding variety of reasons to suppose that they exist. So it cannot be assumed without further ado that there is some especially privileged route whereby we may come to appreciate the existence of universals. However it is an important fact—one that should not be lost sight of—that universals are given to us (in one guise) as the entities to which we are ontologically committed by our use of predicates. This need not mean that all the predicates we use are ontologically committed to universals (consider, for example, the predicate 'is not instantiated by itself' bearing in mind the paradox Russell discovered). Nor need it mean that where such commitment is undertaken there is a 1–1 correspondence between predicates and universals (consider the predicate 'is infected with hepatitis' bearing in mind that there are three varieties of hepatitis). Nonetheless it is because universals underwrite the semantic employment of predicates—providing an ontological ground for their application to diverse particulars—that we have (one) good reason to suppose that many universals exist.

It is significant therefore that there is a wide class of predicate—predicates that are employed not only in ordinary usage but also in a wide variety of theoretical contexts—that appear to be ontologically committed to the existence of multigrade universals. Call a predicate *F distributive* iff '$F(a \wedge b \wedge \ldots \wedge n)$' is equivalent to '$F(a) \wedge F(b) \wedge \ldots \wedge F(n)$' where '*a*', '*b*', …, '*n*' are singular ('Russell', 'Whitehead') or plural terms ('the authors of *Principia Mathematica*'). Otherwise call *F collective*. Consider, for example, the predicate '… ran away'. It is distributive because 'Iain and Donald ran away' is equivalent to the conjunction of 'Iain ran away' and 'Donald ran away'. By contrast '… carried the boat' is collective (on one reading). The carrying of a boat *may* be an action performed by a single individual. But it may also involve—and frequently enough demand—collective and co-operative activity with others. So 'Iain and Donald carried the boat' is not equivalent to the conjunction of 'Iain carried the boat' and 'Donald carried the boat' (neither Iain nor Donald could have performed the act in iso-

lation). Now it is a feature of predicates in general, and collective predicates in particular, that they are capable of combining with lists of singular and/or plural terms to form sentences, lists that may vary in length (consider, for example, 'Iain carried the boat', 'Iain and Donald carried the boat', 'Iain, Donald and Fraser carried the boat' etc). Since collective predicates fail (by definition) to be distributive it follows that the sentences in which they occur also fail to be equivalent to sentences in which they occur with a list of singular or plural terms of fixed length. This reflects the fact that different numbers of individuals may on different occasions perform the collective actions, or enter into the collective states, that collective predicates enable us to describe. This also suggests that the action or state types denoted by collective predicates are possessed by different numbers of individuals on different occasions. Let it be granted that there is no immediate inference from the fact that a true sentence contains a predicate to the existence of an underlying universal that provides the ontological ground of the predicate's application. Predicates and universals do not correspond 1–1. Nevertheless, it appears that the states of affairs that correspond to, or make true, sentences containing collective predicates have multigrade universals as constituents.[8]

Note that there is no commitment here to the idea that the predicates that appear to embody a commitment to multigrade universals are 'syntactically' multigrade (changing the number of their argument places from sentence to sentence). There may indeed be such predicates but for present purposes we may remain agnostic about their possibility. For it may be that the lists of singular and/or plural expressions with which collective predicates are concatenated are best treated as syntactically unitary (albeit complex) terms. In that case, collective predicates turn out to be syntactically monadic with a single argument place to be completed by a list or other plural term. But it does not follow that the universals that underlie the application of collective predicates are metaphysically unigrade. The appearance remains that these universals are instantiated on different occasions by the different numbers of entities

[8] It may also be argued that distributive predicates appear committed to multigrade universals. For distributive predicates also occur in sentences with lists of varying lengths. One might discount this appearance on the grounds that sentences in which distributive predicates occur in this way ('$F(a \wedge b \wedge \ldots \wedge n)$') are necessarily equivalent to sentences in which they do not so occur ('$F(a) \wedge F(b) \wedge \ldots \wedge F(n)$'). But the presence of these equivalencies does nothing to establish that it is the former rather than the latter style of occurrence of distributive predicates that is ontologically revealing. Indeed, exploiting equivalences of this kind it may be argued that *all* universals are multigrade. However, for the purpose of undermining the Russellian contention that all universals are unigrade we need merely consider the weaker thesis that *some* universals are multigrade (namely, those that underwrite the application of collective predicates).

picked out by the different names and descriptions that form lists of varying lengths and in turn combine with collective predicates to yield true sentences.

Collective predicates abound in both natural language and theoretical contexts. In addition to predicates that are used to describe collective actions, there are many others. The following list is not intended to be exhaustive or exclusive but to provide some indication of the extent and depth of collective predicate employment:

action examples ('… carried the boat', '… surrounded the castle')

causal examples ('… caused the bridge to collapse', '… brought about the avalanche')

chemical examples ('… form a stable molecule')

physical examples ('… have mass *X*', 'form a rigid body')

biological examples ('… make up a cat')

geometrical examples ('… are collinear', '… make a circle')

mathematical examples ('… form a class')

logical examples ('… are consistent', '… entail the conclusion')

Prima facie the employment of these predicates in true sentences embodies a commitment to the existence of multigrade universals.[9] Note not only the wide and varied subject matters of these predicates, but also the character of the universals that appear to be involved. Many appear to mark real resemblances amongst their instances, bound up with the causal workings of the world. It is because (e.g.) different collections form circles that they resemble one another. It is because (e.g.) certain molecules form stable combinations from their constituent atoms that these molecules persist over time and remain resistant to a range of external forces. Other universals—(e.g.) consistency and entailment—appear to perform an indispensable role in reasoning and calculation. What reason is there to doubt—irrespective of their varied subject matters—that collective predicates ever denote multigrade universals?

[9] For discussion of a variety of different candidate multigrade predicates, functors and corresponding relations and functions see Leonard and Goodman 1940, pp. 50–3, Chandler 1971, Morton 1975, Grandy 1976, Geach 1979, p. 65, Lewis 1983, p. 349, Mortensen 1987, pp. 109–19, Bigelow and Pargetter 1990, pp. 41–2, Mundy 1990, Taylor and Hazen 1992, pp. 388–92 and Hochberg 2001, pp. 105–7.

2.3 The argument from instantial intrinsics

There is a woeful lack of articulate and principled motivation behind the Russellian dismissal of multigrade universals. But Armstrong—one of the few contemporary Russellians who has perceived even the need to explicitly address the issue of whether such universals exist—does propose the following argument.[10] If R_m is genuinely multigrade then it must really be the same *identical* universal in the facts $R_m(x)$, $R_m(x,y)$, $R_m(x,y,z)$ …. Suppose that it is. Then by the Indiscernibility of Identicals it follows that R_m has the same properties in each of its instantiations. But R_m has different properties in different instantiations: it is dyadic in one instantiation, triadic in another, and so on. Therefore R_m cannot be the same identical universal in each of the facts $R_m(x)$, $R_m(x,y)$, $R_m(x,y,z)$ …. Consequently R_m cannot be genuinely multigrade.

What powers Armstrong's argument against multigrade universals is the extra-logical assumption that universals that differ in their adicity 'differ in their essential natures' (1997, p. 85). If each universal x is essentially n-adic (for some n) then x can occur only in facts with n many constituents. It follows that a universal that is essentially n-adic cannot be identical with a universal that occurs in a fact with k many constituents (where $k \neq n$). So if R_m is essentially n-adic (for some n) then it also follows that R_m cannot be the same identical universal in facts with different numbers of constituents ($R_m(x)$, $R_m(x,y)$, $R_m(x,y,z)$ …).

There is a gap in Armstrong's argument. No reason has been given to accept the assumption that universals in general, or R_m in particular, have their adicities essentially. Indeed the argument is question begging in (at least) two respects. First, the thesis that there are multigrade universals is just the view that some universals lack an essential adicity. According to this view, multigrade universals are n-adic *relative to* some instantiations and k-adic *relative to* others (where $k \neq n$). So the argument simply presupposes what it is intended to prove. Moreover, because no logical incompatibility is generated by a universal possessing different adicities relative to different instantiations, the Indiscernibility of Identicals imposes no evident barrier to the existence of multigrade universals so conceived. Second, the argument (implicitly) assumes—in order to draw the contrast with universals—that particulars that occur in facts with different numbers of constituents do not differ in their 'essential natures' and so are capable of occurring as the same *identical* particular—for example, x—in each of the facts $R_m(x)$,

[10] See Armstrong 1978, p. 94, 1989, p. 40, 1997, p. 85, and Tooley 1987, p. 83. See MacBride 1998b for further discussion of this argument.

$R_m(x,y)$, $R_m(x,y,z)$ … But no reason has been given for supposing that particulars differ from universals in this essential respect. For all that has been established it remains open that the same argument may be used to show that particulars are unigrade too.

In response the Russellian may maintain that adicity is not a relative but rather an *intrinsic* feature of universals. The resulting argument may then be dubbed the argument from 'instantial intrinsics' (by analogy with the argument from 'temporary intrinsics' according to which a changing body cannot be strictly identical over time because such an object has different intrinsic properties at different times).[11] Since R_m cannot be intrinsically dyadic and intrinsically triadic it follows that there cannot be the same *identical* universal present in the facts $R_m(x,y)$ and $R_m(x,y,z)$; these facts must therefore contain numerically different universals as constituents. Finally, the Russellian may reflect, adicity is not an intrinsic feature of particulars. So the same argument may not be used to show (absurdly) that particulars are incapable of figuring in different facts with different numbers of constituents.

The argument from instantial intrinsics fares no better than its predecessor. The thesis that that there are multigrade universals is also (in part) the view that adicity is a relative feature of universals. So the argument from instantial intrinsics begs the question no less than its predecessor. To move beyond this question begging state the Russellian must therefore provide some justification for assuming that adicity is a non-relational feature of universals. But it is entirely unclear just what considerations might be adduced in favour of this assumption. And since the Russellian conception enjoys no default status it will not do to simply declare that it is 'natural' to make this assumption.

2.4 Does the multigrade supervene upon the unigrade?

At any rate the Russellian conviction that there can be no genuine multigrade universals also arises from another source, an interacting body of assumptions concerning definability and existence.[12] First, it is assumed that there exists a sufficient supply of particulars and unigrade universals that conform to the Russellian conception to define or analyse or provide a subvenient base for any apparent multigrade universals. Second, the further assumption comes into play that definable or supervenient entities are no ontological addition to reality; they are nothing over and above the entities that define them or upon which

[11] See Lewis 1986, pp. 202–4.

[12] See, for example, Mellor 1995, p. 207 and Armstrong 1997, p. 85.

they supervene. The conclusion then appears inevitable that multigrade universals must lack the reality of the Russellian materials from which they are defined, analysed, constructed.

But there is nothing inevitable about this way of thinking. The first assumption upon which the Russellian relies is open to question. He assumes that there will invariably exist sufficient unigrade resources to reduce or serve as the supervenience base for multigrade universals. But why must the underlying foundation of all things conform to this conception? How would you contradict yourself, or, in what way would your position conflict with the empirical facts, if you denied it? If we can imagine a world in which the Axiom of Reducibility is not valid, can we not also imagine a world in which multigrade universals fail to supervene?[13]

The Russellian conviction that there are no multigrade universals is no doubt partly sustained by the fact that there are examples of putative multigrade universals that are definable or supervenient. For example, it is plausible to suppose that multigrade geometrical properties like *forming a circle* supervene upon the underlying unigrade spatial relations amongst the points that forms a circle, relations that place them equidistant from the centre of the circle. In the same spirit it may be suggested that multigrade physical properties like *forming a rigid body* supervene upon the unigrade spatial relations that obtain between the points that make up a body, relations that remain constant over time. In this way, the Russellian may argue, multigrade universals may in general be shown to be supervenient or even (in the above cases) definable. But it will not do to simply deal with individual cases, cases that may fail to be representative. If there is to be any confidence in the *universal* applicability of the Russellian conception the appearance of multigrade universals will have to be accounted for *systematically* in a manner that avoids commitment to such universals.[14]

[13] Cf. Wittgenstein 1922, 6.1233. Consider also the preceding remark: 'Propositions like Russell's "axiom of reducibility" are not logical propositions, and this explains our feeling that, even if they were true, their truth could only be the result of a fortunate accident' (Wittgenstein 1922: 6.1232).

[14] Mellor offers the following example: 'a multigrade relation **O*** is defined by a simple relation **O**: e.g. two groups of people *fight with** each other *iff* everyone in each group **fights with** someone in the other' (1995, p. 207). This example relies upon their being an underlying unigrade relation (***x* fights with *y***) from which to define a multigrade relation between groups (I assume that the notion of 'group' must be intended by Mellor not to introduce a novel kind of entity but rather to act as a grammatically singular device for plurally referring to several individuals at once). But how can we have any assurance that sufficient relations exist to deal with every other case in this manner? In fact, the strategy obviously fails for certain cases and so can hardly suffice as a general mechanism for analysing away multigrade universals. For example, suppose that one group of

One cannot say with any definiteness—since no Russellian has explicitly addressed the issue—but it seems plausible that the conviction that there are no multigrade universals is also bound up with a form of physicalism. According to the physicalism in question, the fundamental relations identified by physics are unigrade spatial relations.[15] If this physicalist contention is granted then it appears that all other relations—whether multigrade or otherwise—must be reducible to unigrade spatial relations. But it does not follow that there could be no multigrade universals. Physicalism is only a doctrine about what particulars and universals there are (those recognised by physics). It settles that there are no physical universals (and so no universals) that are multigrade. But it does not follow that the notion of a 'multigrade universal' is a contradiction in terms, that it is somehow built into what it is to be a universal that no universal is multigrade. Such physicalism only establishes that there is nothing in the physical world that simultaneously merits the titles 'universal' and 'multigrade'.

Of course, physicalism of the envisaged kind is not to be taken for granted. It is unclear (at best) how any such physicalism can account for logic and mathematics, and many plausible examples of multigrade universals belong to logic and mathematics (recall the examples of consistency, entailment and set-theoretic formation). Indeed the present day conviction that no such universals exist may—to speak speculatively—feed upon a widespread but implicit psychologism about logic and mathematics. But since the burden of proof lies with the Russellian to demonstrate that there could be no multigrade universals—rather than with his opponent to show that there are multigrade universals—there is no need to pursue the issue of universals in logic and mathematics here.

Let us turn to the second assumption upon which the Russellian relies in dismissing multigrade universals, the assumption that definable or supervenient entities are no ontological addition to reality. It is open to a familiar line of objection. Demonstrating that multigrade

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propositions (*p*, *q* and *r*) entails another (*s*, *t* and *v*). It does not follow that every proposition in each group entails some proposition in the other. Armstrong considers the relation *is surrounded by*, a relation that apparently takes different numbers of terms in different instantiations (1997, p. 85). A particular is surrounded when there are other particulars spatially distributed around it. The relation *is surrounded by* will supervene, Armstrong declares, upon the unigrade spatial relations that obtain between the particulars involved. But Armstrong provides no argument that the strategy applied here may be generalized, that there will be sufficient unigrade materials to be found in the subvenient base to explain other multigrade relations away.

[15] See Armstrong 1978b, p. 90.

universals are reducible to or supervenient upon unigrade universals does not show they do not exist. It merely shows that the existence of multigrade universals consists in, or is dependent upon, the existence of other items that are unigrade (neither reduction nor supervenience amount to elimination). And if multigrade universals exist—reducible, supervenient or otherwise—then the Russellian conception is flouted by counterexample.

Strangely Armstrong admits that reduction or supervenience need not imply non-existence and endeavours to remove the suspicion that supervening properties are 'unreal' (1997, p. 46). Yet Armstrong fails to recognize the consequence of this admission. He does not recognize that multigrade universals—supervenient and therefore real on his view—thereby provide a counterexample to the Russellian conception to which he subscribes. It is true that Armstrong draws a distinction between definable or supervenient universals—he calls these 'second-class' properties and relations—and genuine 'first-class' universals that are neither definable nor supervenient. This enables him to accept the existence of second-class multigrade relations but still deny that there are ever first-class multigrade universals that belong to the subvenient base (Armstrong 1997, pp. 43–6, 85). However, it is utterly unclear what the principled motivation for this view might be. Moreover the admission that multigrade universals exist—even if the universals in question are 'second-class'—conflicts with Armstrong's earlier argument that there could be no identical universal in states of affairs with different numbers of constituents. Armstrong may say that there is one rule for first-class universals, another rule for second-class properties and relations. But this is *ad hoc* too. One is left wondering whether there is any coherent basis to the denial that there could be any multigrade universals.

2.5 Is singular causation multigrade?

The fact that particular examples of putative multigrade universals may be discredited fails to establish the general case that there are no such universals. Nevertheless particular examples may be used to serve a different purpose, highlighting some of the difficulties that confront any attempt to demonstrate in a systematic way that multigrade universals are metaphysically superfluous. With this purpose in mind let us consider an (arguably multigrade) external relation—singular causation.

What are the grounds for supposing singular causation to be a multigrade universal? Causes hardly ever bring about an effect (whether by determining its occurrence or raising its probability) in isolation. This is usually only achieved along with the co-operation of other events. It

is together that they collectively bring about their effect (or effects). Since different numbers of events may co-operate together on different occasions to bring about effects singular causation appears to be multigrade. It appears to relate different numbers of contributory causes to their joint effects.

The following example captures something of the intuitive appeal of these claims. A man is killed by a swarm of bees. The sting of each bee contributes to bringing about the poor man's death. But there is no single sting that causes his death; they do so collectively. Since on a different occasion a different number of bees may contribute to another death the causal relation between the bee stings and the death appears multigrade. One might think of this example as a case of a special kind of causation, *collective causation* to be contrasted with genuinely singular causation. But (*a*) even if collective causation is *sui generis* its multigrade appearance already poses a challenge to the Russellian who is committed to explaining such appearances away. More importantly, (*b*) it is far from evident that the example does involve a special kind of causation. In the buzzing confusion of the swarm's activity the multiplicity of events that cause the unfortunate death is made especially salient to us. But this does not mean that such a multiplicity is absent in less dramatic cases; it may be for pragmatic purposes only that single events are picked out and labelled 'the cause' within particular conversational contexts.

What can the Russellian say about singular causation? For illustrative purposes I will examine two general strategies that the Russellian may adopt to explain away apparent occurrences of multigrade universals (these strategies need not be conceived exclusively). The first strategy posits compound objects as the subject or, more generally, the relata of multigrade universals.[16] Multigrade universals are then treated as relations of fixed degree on the compound objects posited. The second strategy was already implicit in the suggestion that multigrade universals are definable or supervenient. This strategy does not reveal hitherto unrecognized objects but treats expressions that appear to denote mul-

[16] The use of this kind of strategy goes back (at least) to Bolzano (1851, sect. 3). Bolzano uses a causal example to illustrate his idea, treating the subject of 'The sun, the earth and the moon act upon one another' as 'a whole whose members act upon one another'. A similar idea may be found at work in Frege. Considering the sentence 'Siemens and Halske have built the first major telegraph network' Frege wrote: 'Here we don't have a telescoped form of two sentences, but "Siemens and Halske" designates a compound object about which a statement is being made, and the word "and" is used to help form the sign for this object' (Frege 1914, pp. 227–8). However, there is no evidence that Bolzano or Frege employed this strategy to obviate multigrade predicates or properties. Their concern was rather to subsume plural terms ('The sun, the earth and the moon', 'Siemens and Halske') that superficially refer to several objects at once, under the aegis of singular

tigrade relations as incomplete symbols, symbols that are contextually defined in terms of expressions that denote only relations of fixed degree amongst familiar objects. It is because contexts that appear to be committed to multigrade universals may be paraphrased away in terms of contexts that appear committed only to unigrade universals that, it may be argued, multigrade universals are dispensable.

2.5.1 The compound object strategy

When the compound object strategy is applied to the causal case, a new cause is invented. This is the strategy Armstrong adopts. He posits a compound object—an aggregate of the different contributory causes—that brings about an effect, an effect that may also be compound. This renders the causal relation safely unigrade. It turns out to be a dyadic relation between aggregates.[17] Alternative versions of this strategy substitute sets or complex events for aggregates. For the sake of example I will focus upon a version of strategy that employs aggregates, but many of the points made carry over *mutatis mutandis* to the use of sets and events to explain away the appearance of multigrade universals.

How effective is this strategy? A number of concerns may be identified. Suppose C is an aggregate made up of the events $c_1, c_2, \ldots, c_n$ that bring about an effect E. First notice that C is a highly unattractive candidate for a term of the causal relation. It may lack many, if not all, of the causally relevant features of its parts that are critical to bringing E about (for example, the shape and size of c_1 may be critical to bringing E about even though C lacks these features). Of course, C has parts that have those features. But, this suggests that it is the parts rather than the whole that are the primary terms of the causal relation and that C has only a secondary causal role derived from the fact that $c_1, c_2, \ldots, c_n$ are (collectively) efficacious. It is also true that we might learn to live with

logic. This was to be achieved by treating plural terms as singular devices for referring to single (albeit complex) objects (see Oliver and Smiley 2001, pp. 292–6 for an account of the use of this strategy for singularist purposes). But whilst neither Bolzano nor Frege purposively intended to obviate multigrade predicates or properties, their insistence on singular logic and the corresponding denial of (irreducibly) plural terms had the effect of doing so. There can be little doubt that the conviction that there are no genuine multigrade predicates or properties has been sustained (in part) by the widespread adherence of philosophers to the singular logic inherited from Bolzano and Frege. Unfortunately, for reasons of space, I cannot develop this claim further here.

[17] See his 1997, p. 205. Armstrong also suggests a related use of this strategy in application to the sentence (*i*) 'Tom, Dick and Harry lifted a girder'. He writes: 'On the natural interpretation of (*i*) the phrase "Tom, Dick and Harry" refers to a single entity, the team which Tom, Dick and Harry made up for the purpose of lifting the girder' (1978a, p. 32).

the consequence that the primary causal relata lack causally relevant characteristics, always reminding ourselves that it is their parts that have the right properties. But why learn to live with something when you don't have to? Why not just let causation be what it appears to be—a multigrade universal?

This kind of the concern about the use of the compound object strategy—that the compound objects posited are unattractive candidates for the relations in question—arises in other cases too. The most obvious cases occur when we ascend from the level of singular causation to the laws (if any) under which singular causal instances fall. Laws may be more or less complex, requiring the presence of different numbers of universals to necessitate the presence of others. Consequently the relation of nomic necessitation appears multigrade, relating different numbers of universals in different nomic facts. The compound object strategy may be used to avoid this appearance, treating nomic necessitation as a relation between aggregates or sets of universals. But then one may question whether it is these objects—sets or sums—rather than the universals themselves that nomically necessitate the presence of other universals (or their sets or sums).[18]

The same concern may be applied to other kinds of examples that are neither causal nor nomic. Consider entailment. The entailment relation appears to be multigrade because different numbers of propositions entail different conclusions. To avoid this appearance entailment is often conceived as a relation between a *set* of premisses and a conclusion (thereby rendering the relation dyadic). But it is because of the propositions, because of what *they* mean, that the conclusion is entailed. This suggests that it is the propositions themselves—rather than the set—that are the proper relata of the entailment relation. The set, by contrast, does not *mean* anything at all; it does not have truth

[18] In his 1983, pp 140–2 Armstrong offers a different strategy for explaining away the appearance that nomic necessitation relates different numbers of items on different occasions. Suppose $F_1, \ldots, F_n$ necessitate G whereas $K_1, \ldots, K_{n+1}$ necessitate H. He considers two possibilities: (*a*) introducing a plethora of nomic necessitation relations of different degrees (in this case, an n-place relation between the *F*s and G and a distinct necessitation $n + 1$ place relation that relates the *K*s to H); (*b*) introducing a single universal Φ that subsumes the many different items $F_1, \ldots, F_n$ that (apparently) nomically necessitate G and another universal Ψ that subsumes the many different $K_1, \ldots, K_{n+1}$ that (apparently) necessitate H, and treating Φ and Ψ as the single universals that are really responsible for necessitating G and H respectively. Armstrong lights in favour of the latter view because it preserves the dyadic status of the nomic necessitation relation. This is essential, Armstrong maintains, because laws license inferences. Given a law we can infer from the fact that one kind of state of affairs exists that a further state of affairs obtains or will obtain. But since inference is dyadic in structure, the relations that provide an 'ontological ground' for these inferences must be dyadic too. Here Armstrong neglects to consider two alternative possibilities that undermine his argument: (*c*) inference is multigrade (see above) and (*d*) nomic necessitation is multigrade too.

conditions, it cannot be satisfied, it's just an object, albeit one that has propositions as members. The Russellian may attempt to avoid this difficulty whilst evading commitment to a multigrade entailment relation by breaking each deduction down into a proof tree, where each branch of the tree only incurs commitment to unigrade relations (e.g. *modus ponens*). However, this assumes that entailment and deduction are not only extensionally equivalent but that the former is reducible to the latter. But soundness and completeness results for first-order logic fail to establish such a reduction. Furthermore higher-order logics are incomplete, so the proposed unigrade analysis of entailment in terms of deduction also fails in full generality.

Consider supervenience. Suppose types of mental state (for example) supervene upon types of brain state. On the face of it, supervenience is a relation that obtains between a mental state type and types of brain states upon which the mental type supervenes. Since the number of brain types upon which a mental type supervenes may vary from type to type the relation appears to be multigrade. Now we *can* make supervenience unigrade by brute force, stipulating that the relation obtains between a type of mental state and the set (or sum) of types of brain states. But why should we choose to interpose an intervening entity (possibly abstract if it is a set) between the mind and the brain because of a rigid metaphysical principle, a conception of the particular–universal distinction?

Returning to the case of singular causation there is a second difficulty. The compound object strategy threatens to conflict with other assumptions that may (plausibly) be made about the ontological standing of the causal relation and the items that are deemed to be related by it. For example, Armstrong advocates the view that causation is a fundamental relation, a relation that does not supervene upon the presence of other kinds of relations. Along with many other contemporary metaphysicians, he also takes for granted that mereological aggregates are supervenient entities ('an ontological free lunch').[19] But when aggregates are press-ganged to perform the role of causal relata, this combination of views is cast into doubt. If *C* really is an ontological free lunch, an entity that is nothing over and above its parts, then the truths — including the causal truths — about *C* should be supervenient upon the truths concerning c_1, c_2, …, c_n. Otherwise *C* will be seen to make a distinctive contribution that fails to be grounded in the contribution made by its parts. But since c_1, c_2,… ,c_n do not (*ex hypothesi*) enter into the causal relation, it follows that the causal relation itself

[19] See Armstrong 1997, pp. 12–3, 120, 88–9.

must be supervenient. So there is a dilemma. Either aggregates cannot be supervenient or causation must be. Again, the difficulty identified is a general one. It arises whenever the compound object strategy is applied in contexts where (*a*) the putatively multigrade relation in question is deemed not to supervene but (*b*) the compound objects invented are intended to supervene.[20]

The dilemma, of course, is not a fatal one. Armstrong himself endeavours to combine supervenience about mereological aggregates with non-supervenience about causation so the dilemma spells trouble for the combination of views he proposes. But enough philosophers have maintained one of these positions in the absence of the other to free us from the suspicion that the case for another combination of views that avoids the dilemma could not be argued. The point is rather that we do not wish to be forced to choose between these positions because of *this* dilemma. And the dilemma may be defused by simply rejecting the assumption that forces aggregates into the role of causal relata in the first place, the assumption that the causal relation must be unigrade.

There is a third difficulty that merits attention. Even if the compound object strategy succeeds in rendering the causal relation safely unigrade it does not follow that the strategy provides the basis for reducing or eliminating multigrade universals in general. This is reflected in the fact that this particular application of the strategy to the causal case appears to presuppose the existence of (at least) one multigrade universal, the constitution relation. The constitution relation is employed to manufacture compound objects (causal relata) but the relation appears to be multigrade because the different compounds

[20] For example, take another species of external relation, the relation of *totality*, that Armstrong holds to belong to the non-supervenient base of universals (see his 1989, pp. 92–4, 1997, pp. 88, 197–201). Following Russell, Armstrong holds that in addition to atomic facts there must be general facts too. Going beyond Russell Armstrong argues that these facts admit of analysis. Take the fact that such-and-such things are all the *F*s. This fact consists in the obtaining of a universal *T* that relates the totality of *F*-things to the property of *being F*. But to what does the phrase 'the totality of *F*-things' refer? If it is the *F*s themselves then *T* is multigrade. This is because different numbers of things might have been *F*. (Furthermore, different numbers of other items may figure in the *T* relation to other sorts of properties (*being G*, *being H*)). So to avoid the threat of variable adicity, the totality of *F*-things must be a single entity. Armstrong chooses the aggregate of *F*s for this role. This ensures the result that *T* is unigrade (in fact, dyadic). The obvious worry now applies. If the aggregate is a supervenient entity then the truths about it—including the totality truths—must be supervenient. But this runs counter to Armstrong and Russell's claim that general facts cannot be supervenient and belong to the non-supervenient base. Another familiar difficulty also arises here. It is arguable that really what figures in the *totality* relation are the things that are totalled by the relation (relative to a given property *F*). For it is *they* (the *F*s) rather than the aggregate of *F*s that are *F*. But if it is the different things rather than their aggregate that figure in the *totality* relation, the relation will be multigrade.

(aggregates) are made up of different number of constituents (parts). But the compound object strategy cannot be employed to remove the appearance of multigrade relations that arise in this way without generating an infinite regress. Suppose the compound object strategy was applied to the constitution relation. This would involve introducing a new kind of compound object—call them 'aggregates*'—and conceiving the constitution relation as a dyadic relation between aggregates* and aggregates. But this would leave intact another apparently multigrade relation, namely the relation—call it 'constitution*'—that obtained between aggregates* and the different numbers of constituents that make up different aggregates*. To remove the appearance that the constitution* relation is multigrade a further novel compound object—call them 'aggregates**'—will have to be introduced. But then the relation that obtains between aggregates** and their constituents—call it the 'constitution**' relation—will appear to be multigrade too. So a further kind of whole, aggregates *** will have to be posited. And so on.

This regress indicates that the compound object strategy cannot be applied generally. Of course the regress can be avoided by admitting a multigrade relation of constitution (as I would recommend). And once one such universal is admitted it is difficult to see either what insuperable obstacle can remain to the admission of further multigrade universals or what necessity there can be for adopting complicated theories to dispense with them.

2.5.2 The incomplete symbol strategy

The Russellian may choose to avoid the infinite regress in a different way, by employing the incomplete symbol strategy to explain away the appearance of multigrade universals. Does this strategy fare any better in the case at hand? Applied to the constitution case that eluded the compound object strategy, the incomplete symbol strategy contextually defines the multigrade notion of constitution in terms of a (i) dyadic notion of part-hood between parts and aggregates and (ii) quantification over such parts. For example, '*C* is made up of c_1 and c_2' is defined as 'c_1 is a part of *C* and c_2 is a part of *C* and no part of c_1 is a part of c_2 and there is no part of *C* whose parts are not parts of c_1 or c_2'. '*C* is made up of c_1 and c_2 and c_3' is rendered as 'c_1 is a part of *C* and c_2 is a part of *C* and c_3 is a part of *C* and no part of c_1 is a part of c_2 and no part of c_2 is a part of c_3 and no part of c_3 is a part of c_1, and there is no part of *C* whose parts are not parts of c_1 or c_2 or c_3', and so on. In this way the appear-

ance of a multigrade universal may be thought to disappear in favour of a unigrade relation and ever increasing logical complexity.

But if this strategy can be applied to the constitution relation it may as well be applied to singular causation directly. This time the trick will be to define the multigrade notion of causation in terms of a dyadic causal relation and quantification over events. The relation we need is not far to seek. It is simply the relation that obtains between two events x and y when x—in the presence of other events of a suitable kind—necessitates or raises the probability of y. Call this *partial-causation*. It is partial because there is no suggestion that a cause x (of this kind) is capable of necessitating or raising the probability of its effect y in isolation from other co-operating events; x need not be a *total cause* of y. Employing the relation of partial causation contexts of the form 'c_1, c_2,…, c_n cause E' may then be defined as 'c_1 is a partial cause of E and c_2 is a partial cause of E and … c_n is a partial cause of E and there is no partial cause of E that is not identical to c_1 or c_2 or … c_n'.

This analysis is not entirely free from difficulties. It rules out the possibility of causal overdetermination. Suppose there are two or more collections of events (c_1,…, c_{k-1} and c_k, …, c_n) that each cause, and so overdetermine, the same effect (E). Now apply the proposed analysis to 'c_1, …, c_{k-1} cause E'. This becomes 'c_1 is a partial cause of E and c_2 is a partial cause of E and … c_{k-1} is a partial cause of E and there is no partial cause of E that is not identical to c_1 or c_2 or … c_{k-1}'. But the final exclusionary clause of this analysis ('there is no partial cause of E that is not identical to c_1 or c_2 or … c_{k-1}') fails because there are other partial causes of E, namely the collection of partial causes c_k, …, c_n that together with c_1, …, c_{k-1} overdetermine E. To allow for the possibility of overdetermination the partial causal analysis of collective causation will need to be relativized in some way to different 'occurrences' to which the different collections of partial causes respectively contribute.

But even if the possibility of overdetermination can be accommodated in this way it still remains to be shown that it is partial (unigrade) causation rather than collective (multigrade) causation that is metaphysically fundamental. These two different ways of talking about the causal facts are intended to be equivalent but mere equivalence does not establish priority one way or another. The Russellian may appeal at this point to ordinary usage. Our ordinary notion of cause is (plausibly) that of partial causation. We are often willing to single out an individual event (e.g. the striking of the match) and say that it caused the effect (the explosion). But this consideration cannot be decisive. Even though we are willing to say that a particular event was responsible we

are perfectly aware that other events must have taken place in order to bring about the effect; our singling out of a particular event as salient is, as we have already reflected, plausibly governed by pragmatic factors. Moreover, the notion of collective causation is not alien to us. Not only do we talk about bringing about shared goals together, we frequently strive collectively to do so. The notion of a partial cause may also be defined in collective terms: *x* is a partial cause of *y* just in case *x* is one of the events that collectively brings *y* about. So even if the notion of partial causation is familiar from ordinary language it does not follow that partial rather than collective causation is metaphysically basic. The Russellian has not even ruled out the possibility that there is a multiplicity of causal relations, both collective *and* partial, or that different causal relations are basic in different circumstances.

It also remains to be established by the Russellian that the unigrade notion of part–whole is more fundamental than the multigrade notion of constitution. Let it be granted that, for example, (i) '*C* is made up of c_1 and c_2' is equivalent to (ii) 'c_1 is a part of *C* and c_2 is a part of *C* and no part of c_1 is a part of c_2 and there is no part of *C* whose parts are not parts of c_1 or c_2'. But it is does not follow that (ii) is metaphysically prior to (i). Indeed nothing has been done to rule out the possibility that (i) is metaphysically prior to (ii): that c_1 and c_2 are parts of *C because* they collectively constitute it (the same point arises with respect to set-theoretic formation and membership).

It is incumbent upon the Russellian to provide a principled motivation for the dismissal of multigrade universals. The possibility of unigrade analyses that treat expressions apparently denoting multigrade universals as incomplete symbols suggests a way in which the Russellian may motivate his claims. It is because, the Russellian may insist, contexts that appear to be committed to multigrade universals are equivalent to contexts that appear committed only to unigrade universals that multigrade universals are dispensable. But the Russellian is very far from having established such a general claim. First, no reason has been supplied for supposing that *every* context that features expressions apparently denoting multigrade universals may be paraphrased in this way.[21] The most he has shown is that certain causal or constitution

[21] The most promising kind of strategy for achieving this result turns on systematically uncovering implicit quantification over events and sets. See, for example, Schein 1993. However, in addition to the significant ontological questions that may be raised concerning the character of the events involved and the plausibility of uncovering hidden commitments of this kind Oliver and Smiley show that contradiction results when these analyses are universally applied (2001, pp. 298–305). Consider, for example, an analysis that systematically uncovers implicit quantification over events. According to this analysis, contexts of the surface form '(The *F*s) *G*' go over into the depth

claims that appear to incorporate a commitment to multigrade universals are necessarily equivalent to sentences that lack overt commitment to such universals. Second, the Russellian has not shown (*i*) it is the surface forms of sentences that lack overt commitment to multigrade universals rather than sentences that appear to call out for their existence that invariably reveal the true nature of things, nor ruled out (*ii*) the possibility that both ranges of sentences reveal that there are two kinds of universals: unigrade and multigrade. It seems more likely that the viability of unigrade or multigrade analyses will have to be established case by case. In advance of such an investigation there is no reason to expect that relations will invariably turn out to be unigrade (or multigrade).

2.6 Varigrade universals

The foregoing discussion of multigrade universals invites the following response. Let it be granted that there are universals that are 'multigrade' in the sense defined: they enter into instantiation on different occasions with different numbers of individuals. But there remains a clear sense in which universals that are multigrade may still retain a fixed degree. For whilst the number of individuals that instantiate them may vary from one fact to the next, multigrade universals may nevertheless apply in a uniform way to the individuals they relate.

Take the causal relation. It applies differentially to its relata, grouping them into causes on the one hand and effects on the other. In this sense causation appears dyadic: it relates one group of individuals (causes) to another group (effects). By contrast, geometrical properties such as *forming a circle* impose no groupings or distinctions amongst the individuals they relate; forming a circle is something points do *together* without distinction; there is no privileged or distinguished point or points that make up the circumference of a circle. There is consequently a clear sense in which *form a circle* is monadic, relating but one group of individuals. From this point of view each universal has a fixed number

form 'there is a *G* event in which all and only the *F*s play a part'. This analysis appears to show that apparently multigrade universals (*G*) are really monadic features of events. But, as Oliver and Smiley demonstrate, this analysis runs into paradox when it is generalized. Consider a predication of the events which do not play a part in themselves: '(The events which do not play a part in themselves) *G*'. Under the proposed analysis this becomes: 'There is a *G* event in which all and only the events which do not play a part in themselves play a part'. Russell's paradox shows that there can be no such event.

of argument places: *form a circle* has one argument place, causation has two argument places, and so on.[22] But even though the number of places is fixed, different numbers of individuals may occupy each place. In this way the enlightened Russellian abandons the tacit assumption accepted until now that there is a 1–1 correlation between the argument positions of a relation and the terms it relates.

Once this assumption is abandoned the preceding discussion may be accused of the following error. It confuses the number of argument places in a universal with the number of individuals that occupy its argument places. But these are different things. And because they are different the latter may vary whilst the former remains the same. So even multigrade universals may retain a fixed degree. The Russellian distinction between entities that are definitely *n*-adic and entities that are not *n*-adic for any number of *argument places* remains in force, unchallenged by the foregoing discussion.

There is every reason to welcome this enlightened response from the Russellian. He is finally admitting—after a lengthy period of denial—that there are multigrade universals. And he is doubtless right to distinguish between the different ways in which universals apply to the terms that instantiate them. However, it does not follow from the fact that some universals have a fixed degree (in the sense of having a fixed number of argument positions) that all universals have a fixed degree. Since 'multigrade' is already taken let us introduce the expression 'varigrade' to denote a universal that varies its number of argument positions. If there are or could be varigrade universals then the Russellian will still have failed to establish that universals are definitely *n*-adic.

Are there examples of varigrade universals? Ironically, it was Russell himself who proposed that there is at least one varigrade universal: the multiple relation of belief that played a central role in his theory of judgement.[23] This relation is quite unlike causation or entailment in the following respect. Neither causation nor entailment applies differentially to the causes or premisses that they relate to an effect or a conclusion. *As one* the causes of an event give rise to their effect, it is

[22] A corresponding point 'in the formal mode' may be made in connection with the adicity of predicates. Leonard and Goodman draw attention to this fact when they reflect: '"To murder" and "to annoy" are multigrade, inasmuch as one person may murder or annoy another, or several persons may cooperate together in these actions; but not wholly symmetrical, inasmuch as interchanging terms designating the murdered man and one of the accomplices will not generally result in a proposition equivalent to the original' (1940, p. 53). See also Morton 1975, pp. 309–10 and Hazen and Taylor 1992, p. 376.

[23] See Russell 1910, pp. 153–6. Quine also entertains the corresponding linguistic doctrine that *de re* belief and *de re* necessity are expressed by multigrade predicates (1977).

together — without distinction — that premisses entail a conclusion. It is for this reason that the many causes of an effect can be treated as occupying a single argument position of the relation that connects them to their effect, and the many premisses that entail a conclusion may be conceived as falling within a single undiscriminating position. By contrast, the multiple relation of belief applies differentially to different numbers of objects, properties and relations. For example, Iago may believe that Roderigo loves Desdemona whilst not believing that Desdemona loves Roderigo. It follows that the objects, properties and relations the belief relation relates cannot fall within a single undiscriminating position. Rather to account for the differential application of the belief relation, the related items must be slotted into different argument positions of the relation. Then since the number of objects, properties and relations related by belief varies — Iago may simply believe that Roderigo is a fool — it follows that the number of argument positions in the belief relation must vary too. The multiple relation of belief, it appears, is a varigrade universal. Instantiation provides another example. Since there are relations of different degrees that apply differentially to their terms it follows that instantiation must be capable of differentially relating different relations to different numbers of terms.

The Russellian may dismiss varigrade relations of this kind. He may characterize them as 'merely formal' or 'merely intentional', not genuine constituents of the material world, suspicious of the idea that such idiosyncratic universals should come into view only when we consider the relationship between thought and the world, or between relations proper and their terms. But just because the multiple relation of belief is an intentional relation, and instantiation a formal relation, it does not follow that they do not exist. And there is nothing (suspiciously) deep or mysterious or surprising in the fact that varigrade relations should emerge at the interface of thought and reality or between (non-formal) relations and their terms. Suppose the material world consists of individuals falling under asymmetric relations of different degrees k, …, n. In order for a thinking subject S to believe truly of such-and-such objects that they fall under a k-adic universal, S will have to be differentially related to $k + 1$ items (k objects + the universal S believes they fall under). But for S to believe truly that such-and-such objects fall under a $k + 1$-adic universal, S will have to be differentially related to $k + 2$ items. And so on. Therefore it is entirely to be expected that (at least) some intentional relations are varigrade. Such relations enable the

thinking subject to represent *de re* different numbers of objects falling under universals of different degrees.

However, it is not really to the point whether instantiation or the multiple relation of belief are credible examples of varigrade universals. Let us not forget where the burden of proof lies in this debate. The enlightened Russellian admits multigrade universals but denies the existence of varigrade universals *in principle*. It does not suffice to establish this position to simply point out—even if it is correct to do so—that certain examples of varigrade universals fail to be credible. We are still owed an argument for the claim that such universals *could not* exist.

That there is such an argument may appear to go without saying.[24] If there are varigrade universals then—unlike other multigrade relations—they differentially apply amongst the different numbers of relata they relate on different occasions. Sequences may be employed to model relations of this kind. Because sequences vary in length they are capable of modelling the variable numbers of items a varigrade universal relates. And because sequences embody an order amongst their constituents they are also capable of encoding the manner in which a varigrade relation differentially applies to its terms. The enlightened Russellian may suggest, however, that sequences do not merely provide models of varigrade universals. In fact, universals that appear to be varigrade are really monadic properties of *sequences*. In this way, the compound object strategy—critically employing sequences instead of aggregates or sets to capture the facts of differential application—may be used as a device to systematically explain away candidate varigrade universals. Or so the enlightened Russellian may claim.

It is doubtful, however, whether sequences are really anything more than the models of varigrade relations. If sequences are conceived as set-theoretic constructions then it is clear that there are many different ways in which sets may model the differential application of relations. Of course we are familiar with the Wiener–Kuratowski procedure that construes the ordered pair $<x, y>$ as the unordered set $\{\{x\}, \{x, y\}\}$. But there are also indefinitely many other set-theoretic explications that construe ordered pairs differently. So if the enlightened Russellian insists on treating what appear to be varigrade universals as monadic properties of sequences, he must indicate which sets these sequences

[24] Although Quine is not engaged with the dialectic of the above argument, he offers a corresponding suggestion with respect to multigrade predicates. Quine appeals to 'what I thought went without saying … that the adoption of a multigrade predicate involves no logical anomaly or any infinite lexicon. It can be viewed as a one-place predicate whose arguments are sequences' (1977, p. 144).

really are. Since it is unclear what, if any, argument could ever be given for preferring one set-theoretic reduction of sequences over another it is correspondingly doubtful whether sequences (conceived as set-theoretic objects) provide anything more than a model of varigrade relations.[25]

To avoid this concern the enlightened Russellian may deny that sequences are any kind of set-theoretic construction, conceiving them instead as a *sui generis* kind of (ordered) object. But now other kinds of difficulties arise. To begin with, it is doubtful whether the appeal to sequences allows us to systematically explain away every candidate varigrade universal. The enlightened Russellian may be criticized for presupposing that at least one varigrade relation exists, the relation of constitution that obtains between the constituents of a sequence and the sequence itself. This relation is (plausibly) varigrade because (i) it relates different numbers of constituents to sequences of different lengths and (ii) it differentially applies to the constituents to produce sequences that order objects in different ways. Moreover, the constitution relation for sequences cannot—on pain of infinite regress—itself be treated as a monadic feature of sequences* that comprise sequences and their constituents. This is because the same issue will arise with regard to the constitution relation for sequences* (and so on). One might expect to find a way out here that appeals to a unigrade analysis of the constitution relation (another application of the incomplete symbol strategy). However, it is far from clear how such an analysis might run. An analysis that employs the unigrade part–whole relation is incapable of capturing the fact that sequences are built up from their parts in an order. This problem might be got around by brute force by introducing an infinite array of ordinal part–whole relations (expressed by the predicates '… is the first part of …', '… is the second part of …' '… is the *n*-th part of …'). But even if such an extensionally adequate analysis could be found still further argument will be required to show that these ordinal relations are metaphysically basic.

There is another difficulty. The enlightened Russellian dismisses varigrade relations in favour of monadic properties of sequences. But what—other than prejudice—speaks in favour of treating relations as properties of sequences conceived as *sui generis* objects rather than tolerating the presence of varigrade relations? Relations that differentially apply to different numbers of objects on different occasions may appear mysterious. A theory that admits them may run against the grain of

[25] Cf. Benacerraf 1965.

more usual ways of thinking about relations. But the idea that relations are monadic properties of sequences appears no less mysterious. First, there appears to be a significant metaphysical contrast to be drawn between the merely monadic features of a sequence (for example, *being abstract*) and those features of a sequence that correspond to what—prior to the theoretical identification of relations with monadic features of sequences—would have been described as a symmetric or asymmetric relation amongst the constituents of a sequence. Since the enlightened Russellian treats varigrade relations as monadic properties of sequences it appears he has no means for drawing this distinction, a distinction that appears to be both real and important. This leaves it a mystery just how the distinction between mere properties and genuine relations may legitimately be drawn. Second, the enlightened Russellian invokes sequences conceived as primitively ordered objects. It is because they are primitively ordered that sequences are capable of serving as the objectual correlates of varigrade relations. But why are objects of this kind any less mysterious than varigrade relations themselves? S*ui generis* objects that have their own primitive order appear no more transparent to the understanding than relations that are allowed to vary in their number of argument positions.

It remains the case that sets and sequences may be used to model the panoply of multigrade and varigrade relations. A varigrade relation may be modelled by a set of sequences of sets of individuals, where these sequences may differ in length. An n-place multigrade relation (that is not varigrade) may be modelled by a set of n-tuples of sets of different numbers of individuals. This gives us a way of sharpening the challenge to the Russellian. With what right does he declare that the world could not admit of a relational complexity that demands this kind of modelling, or an even greater complexity that demands even more sophisticated modelling?

The Russellian owes us articulate and compelling grounds for dismissing the possibility of multigrade and varigrade universals. In fact the Russellian motivations are so unclear and fragmented that they lend a spurious credibility to the position. For it then becomes almost inevitable that any attack upon them is itself likely to appear *ad hominem* and fragmentary. But until the Russellian—enlightened or otherwise—supplies the missing motivation for his view and lays the basis of his theory open to public scrutiny, there is no reason to suppose that the appearance of multigrade or varigrade universals systematically deceives us or that such universals could not exist. Until the Russellian shows otherwise it is difficult to avoid the suspicion that the

conviction that universals come only with a fixed degree results from an illicit projection. The projection is from the shape of the predicates employed in familiar formal languages—that admit only predicates that combine with a fixed number of names—to the shape of reality itself.

2.7 Higher-order universals

The admission of multigrade and varigrade universals undermines Russell's proposal that universals can only occur in instantiation with *n* other entities. However, the admission of multigrade and varigrade universals does not of itself cast doubt upon the existence of unigrade universals. Hence it does nothing to undermine the following distinction between the classes of particulars and universals. Whereas the class of universals admits of a three-fold division—into unigrade, multigrade and varigrade—the class of particulars admits of no corresponding division. Does not this difference amongst classes provide sufficient grounds for affirming a particular–universal distinction?[26]

The fact that the *classes* of particulars and universals are different does not show there is a necessary and exclusive distinction that obtains amongst the particulars and universals themselves. Nevertheless, it appears that the three-fold division between unigrade, multigrade and varigrade may be used to retrieve the particular–universal distinction. First, the *n*-adic universals may be identified as the constituents of facts that can only occur in instantiation with *n*-other constituents. Second, particulars may be identified as the constituents that can occur in instantiation with unigrade universals. Third, multigrade and varigrade universals may be identified as constituents that are neither particulars nor unigrade universals.

This method of distinguishing between particulars and universals presupposes that the constituents of facts are capable of occurring in an interlocking pattern of combinations that reveal their categorial differences. But what are the compelling grounds for attributing so convenient a shape to the space of possible facts? The method assumes that particulars and unigrade universals of different degrees are capable of combining freely. But why assume this is invariably so? We have already

[26] See Hochberg 2004, p. 204 who employs the three-fold distinction between monadic, *n*-adic and multigrade to provide the basis for a distinction between particulars and universals. Hochberg is responding here to the point that universals admit of widely varied natures; not only are there unigrade and multigrade universals, there are also neutral and biased relations, and universals that exhibit themselves (MacBride 2004a, p. 193). But rather than providing grounds for affirming the particular–universal distinction this diversity poses a challenge to anyone who wishes to provide compelling grounds for the distinction, the challenge of providing a unifying account of what these universals have in common that respects their differences.

entertained the possibility that (at least) some particulars fail to be multigrade (see (2) and (3) above), and there are other (apparent) possibilities that collectively threaten to throw a spanner in the combinatorial works. What, other than dogma, entitles us to rule out these possibilities without further ado?

There is a related difficulty that arises for the Russellian independently of whether multigrade or varigrade universals are introduced. Suppose that there really are, as Russell claimed, atomic facts of one or other of the forms:

(1) $R_1(x), R_2(x,y), R_3(x,y,z)$ ….

If we restrict our attention to (1) then it appears that straightforward counting enables us to distinguish the unigrade universals R_1, R_2, R_3 from the multigrade particulars x, y, z. But now consider the possibility that there is a further layer of facts to reality, facts of one or other of the following forms.

(5) $S_1(R_1), S_2(R_1, R_2), S_3(R_1, R_2, R_3), \ldots$

If facts of these different forms could obtain then the universals R_1, R_2, R_3 … vary in their adicity just as strongly as the particulars x, y, z …. For example, R_1 occurs not only in a fact of two constituents ($R_1(x)$) but also in facts of three constituents, four constituents, and so on ($S_2(R_1, R_2)$, $S_3(R_1, R_2, R_3)$, …). Consequently the constituents that appeared unigrade from a restricted perspective (1) are revealed to be multigrade when we remove our blinkers and take heed of the wider view (5).

It follows that the Russellian conception cannot draw a categorial distinction between R_1, R_2, R_3 … and x, y, z …. By the lights of the Russellian conception of the particular–universal distinction, R_1, R_2, R_3 … and x, y, z … are all multigrade, all particulars. This is a difficulty that arises for the Russellian who countenances not only the metaphysical possibility of properties (R_1, R_2, R_3, …) but also properties of properties and relations amongst properties (S_1, S_2, S_3,…). Consider, for instance, the situation that arises from admitting the higher-order monadic property of *being a colour* and the higher-order relation of *being brighter than* that obtains between colour universals.[27]

What this shows is that the Russellian conception cannot provide an absolute distinction between particulars and unigrade universals but

[27] For theories that posit a variety of monadic and polyadic higher-order universals see Armstrong 1978, pp. 133–62, 1983, pp. 85–99, 113–5, 141–2, 1997, pp. 223–30, 246–7, Tooley 1987, Bigelow and Pargetter 1990, pp. 38–92, Newman 1992, pp. 100–27, Mellor 1995, pp. 208–9, and Lowe 1998, pp. 140.

only a relative distinction between entities that occupy different layers or orders ((1), (5)).[28] This leaves it open that the Russellian conception may be interpreted relative to a hierarchy of facts. But since the distinction between unigrade and multigrade does not itself generate this hierarchy some independent principle will have to be supplied to impose it. Without such a principle in place there can be no guarantee that the Russellian conception corresponds to an exclusive distinction in reality; there may simply fail to be such a hierarchy.[29]

3. Exemplification

Of course Russell would have seen no difficulty in supplying a principle that generates the required hierarchy; so far as Russell was concerned the Vicious Circle Principle and the hierarchy it induces imposes a type distinction between particulars and universals.[30] But Russell's position is notoriously difficult to maintain; the Vicious Circle Principle appears false, the theory of types impossible to state. Is there another principle that generates the required hierarchy that is not simply the troubled theory of types in disguise?

What appears to be another way of imposing the required ordering amongst particulars and universals appeals to an asymmetric relation, or tie, of exemplification. Conceived this way, particulars and universals are terms of the exemplification relation; facts consist in the holding of this relation between particulars and universals. This way of thinking about particulars and universals provides the basis of the second conception of the particular–universal distinction identified (sec. 1.1 above). This conception may be developed in different ways depending upon whether higher-order commitments are undertaken.[31] Elementarists undertake none and their conception of the particular–universal distinction is correspondingly straightforward: particulars are entities

[28] It may have been to avoid this difficulty that Russell claimed that universals were not only unigrade constituents of facts, but also 'occurred as' relations (Russell and Whitehead 1925, p. xix). Unfortunately Russell does not make clear what it means to occur *as* a relation.

[29] One might persist in the attempt to provide a more sophisticated combinatorial recipe for distinguishing particular from universal that accommodates the possibility of higher-order universals. But not only would this hold the particular–universal distinction hostage to combinatorial fortune, one might also doubt the philosophical relevance of the resulting recipe.

[30] See Russell 1908, p. 76.

[31] See Bergmann 1967, p. 26, Hochberg 1981, p. 215, Skyrms 1981, Bigelow and Pargetter 1990, p. 39–40 and Lowe 1998, p. 155, 2002, p. 350. For further discussion of the exemplification conception of the particular–universal distinction see MacBride 2004a, 2004b, Hochberg 2004, and Lowe 2004.

that figure in the first argument position of the relation; universals are entities that serve in the second. Particulars exemplify whereas universals are exemplified. But if higher-order universals are admitted then the particular–universal distinction requires more sophisticated treatment. Particulars are still entities that figure in the first argument place of the exemplification relation but universals are now items that figure in both places. Universals are not only exemplified by particulars. They also exemplify other entities.

Both ways of conceiving the particular–universal distinction propose that universals are exemplified. This feature stands in tension with the possibility of uninstantiated universals that may earn their theoretical keep in a variety of ways (for example, as the states of physically possible systems, uninstantiated nomic connections, or semantic values). To relieve the tension, a revised conception may be suggested: universals are entities that *could* be exemplified whereas particulars are entities that *could not*. This still fails to accommodate universals that could not have been instantiated (e.g. *being round and square*). If such entities are admitted then there must be some more fundamental characterization of what it is to be a universal, a characterization that cannot require that universals have the capacity to enter into the exemplification relation.

One may already have been wary of uninstantiated universals, shaken perhaps by their lack of causal powers, spatio-temporal location, empirical evidence in their favour (in some cases) and so on. In that case it may seem hardly any loss that the proposed elucidations of the particular–universal distinction rule out such entities from the start, denying them the character of universals (although one might also wonder whether the kinds of argument that have been given for rejecting *uninstantiated* universals provide much support for the conclusion that they should never have been considered *universals* in the first place). But there are other, more fundamental difficulties that arise for conceptions of the particular–universal distinction that appeal to exemplification. These difficulties arise even when the field and range of the exemplification relation are confined to the heartland of instantiated particulars and universals.

3.1. Asymmetry and foundation

If particulars and universals are to be distinguished by this conception then the facts must exhibit a significant structural asymmetry. Let the sign '… ⇒ ---' express the (putative) asymmetric relation of exemplifi-

cation. Then, according the conception at issue, the fact that Socrates is wise will exhibit the form:

(i) Socrates ⇒ wisdom

This determines that Socrates is a particular (occurring in the first argument position of the exemplification relation) whereas wisdom is a universal (falling into the second argument position).

But what are the grounds for the assumption that it is Socrates rather than wisdom that figures in the first rather than the second argument position? Why should the constituents of the fact that Socrates is wise not be more accurately represented as exhibiting the following order?

(ii) wisdom ⇒ Socrates

But then it is wisdom that occupies the particular position and Socrates the correlative universal position in the exemplification relation. This leaves one wondering from where the insistence derives that Socrates exemplifies wisdom rather than the reverse. It appears less to do with a grasp of exemplification—a notion too slight, too abstract in content to dictate any definite judgement of the kind—than with a prior and independent understanding that Socrates is a particular, wisdom a universal.

The proponent of the exemplification conception may just not be swayed by this concern. Let it be granted that the notion of exemplification has a highly abstract content—a content the grasp of which does nothing to inform us whether it is Socrates or wisdom that is particular or universal. Nonetheless, it may be claimed, the notion has content enough to dictate that when the constituents of a fact are a universal and a particular, the particular fills the first argument position of the exemplification relation whereas the universal fills the second. Why? Because that is precisely what the distinction between particulars and universals consists in—no matter whether we are capable of tracking whether the distinction obtains one way or another. If we are unable to settle whether it is Socrates that exemplifies wisdom or wisdom that exemplifies Socrates this signals nothing more than a limitation in what we can tell about the world. It indicates no defect in the conception of the particular–universal distinction proposed.

Yet even if it is granted that there is this kind of radical indeterminacy in our grasp of the particular–universal distinction there is a further, more radical, doubt to be addressed. Never mind whether it is Socrates or wisdom that fills the first or second argument position of the exemplification relation. The exemplification conception assumes that this

relation (or tie) must be asymmetric. What warrant is there for accepting this assumption? Let '⇔' express a (putatively) symmetric relation of exemplification that obtains between the constituents of a fact when that fact obtains. If exemplification is symmetric in form then it makes no difference whether the fact that Socrates is wise is represented by,

(iii) Socrates ⇔ wisdom

or

(iv) wisdom ⇔ Socrates

Ties of exemplification perform the function of binding together the constituents of a fact when they are instantiated, thereby distinguishing a fact from a mere collection. The symmetric tie expressed by '⇔' appears to accomplish this task, binding together the constituents of the fact that Socrates is wise, just as effectively as the asymmetric tie expressed by '⇒'. So the assumption that facts are basically asymmetric remains to be warranted. But if the fact that Socrates is wise is bound by a symmetric relation then the conception of the particular–universal distinction at issue cannot provide a basis for drawing any categorial distinction between Socrates and wisdom.

Of course, one may go further and doubt even whether the constituents of a fact require the assistance of any relation or tie (asymmetric or otherwise) to be bound together. It may be that the constituents of a fact are connected immediately.[32] In that case the fact that Socrates is wise requires no symmetric or asymmetric relation to be depicted for its proper representation. Only some concatenation device is required to indicate that the constituents of the fact hang together. A colon might be employed for this purpose so long as we are careful not to associate a direction with it or confuse the colon for an expression that denotes a relation. This leaves us at liberty to choose between the representations,

(i) Socrates : wisdom

or

(ii) wisdom : Socrates

[32] As Ramsey explicitly claimed: 'As regards the tie, I cannot understand what sort of thing it could be, and prefer Wittgenstein's view that in the atomic fact the objects are connected without the help of any mediator. This does not mean that the fact is simply the collection of constituents but that it consists in their union without any mediating tie' (1925, p. 29).

If the constituents of facts really do hang immediately together then it makes no difference to the depiction of the underlying fact whether we use (v) or (vi) for the purpose.

In order for exemplifcation to perform its intended role in distinguishing particulars from universals it must be assumed that facts necessarily exhibit an asymmetric relational structure. But in the absence of arguments—demonstrating that there is a tie of exemplification, and that this tie is asymmetric in form—there can be no assurance that this conception of the particular–universal distinction has any basis in the facts.

There is a further difficulty for the exemplification conception. It relies upon a *Principle of Foundation* (an echo of the theory of types) that has so far gone unquestioned. The principle states that there are some entities (particulars) that occupy only the first argument position of the exemplification relation; they are not exemplified by anything else. Every other entity is then a property, or a property of a property (and so on) of the elements that belong to the foundation. But what grounds are there for assuming *Foundation* in the first place?

Consider the possibility that the world exhibits a certain sort of infinite complexity. Suppose that exemplification goes all the way down. Whenever something exemplifies one entity it is exemplified by another further entity. Then every entity will turn out to be exemplified and therefore a universal (in fact the *cardinality* constraints required to realize this possibility are relatively modest: there need merely be as many strata of exemplification as there are natural numbers). So if the world exhibits this sort of infinite complexity then the exemplification conception will be unable to draw a distinction between particulars and universals. Yet no basis has been provided for ruling out this possibility. Nor, for example, has the possibility been ruled out that *Foundation* may fail by virtue of a (finite) circle of exemplification obtaining. It follows that this conception cannot underwrite the inevitable character that tradition bestows upon the particular–universal distinction. The distinction is intended to impose an exclusive division of entities in this and every other possible world. The exemplification conception provides no guarantee of this; it leaves open the possibility that some possible worlds are composed of particulars and universals, other worlds exclusively of universals.

3.2 Ordinary discourse and higher-order universals

It is no doubt tempting to respond that it is more *natural* to think of exemplification as asymmetric, relating objects to their properties. And

Armstrong no doubt expresses a habit deeply ingrained in our ordinary thinking when he reflects:

> [T]here is the answer of Aristotle. Primary substance is that of which things are predicated, but is not itself predicated of anything. Properties are properties *of* individuals. Relations are relations *holding between* individuals. But individuals are not individuals *of* their properties. Nor do individuals hold between the relations which relate them. So, at any rate, ordinary discourse assures us. It seems reasonable to take this asymmetry recognised by discourse as marking a rather fundamental asymmetry. (Armstrong 1989, p. 44)

But linguistic reflections of this kind cannot be used to establish the asymmetry of exemplification.

To begin with the sort of ordinary usage to which Armstrong appeals fails to demarcate property from individual, universal from particular. We do not only talk about the properties *of* an individual. We also talk about 'the number *of* real numbers', 'the members *of* a set', 'a flock *of* geese', 'the pieces *of* gold', 'the parts *of* the sculpture' and so on. These are constructions that do not appear—and do not forget that what is at issue here are surface appearances—to describe a relationship between a property and an individual. So unless we already grasp the distinction between individuals and properties an appeal to the asymmetry represented by the 'of' construction will not settle which entities are particulars and which universals. And even if there is an asymmetry recognised in ordinary usage—in the structure of subject–predicate sentences or the use of prepositions—the theoretical status of any such asymmetry cannot be taken for granted. For example, it may be that subject–predicate structure or the 'of' construction are employed not to represent an objective distinction amongst fact constituents but to register that certain objects introduced into our discourse are foremost in our thoughts, perhaps in central cases an enduring fascination (for whatever pragmatic or aesthetic reasons). It would a great error to mistake a distinction of this kind for a difference in reality. So it needs to be established—rather than taken for granted—that the linguistic asymmetries in question are representational in character.

There are also other possibilities. Ordinary discourse may incorporate a commitment to an objective distinction in reality corresponding to one or other form of speech. But then it must be established independently whether reality redeems the commitment made in language. Our linguistic forebears may have been misguided in embedding this folk-metaphysical assumption—the assumption that particulars and universals are asymmetrically related—in the form of our discourse. More generally, it has become a methodological commonplace

amongst contemporary metaphysicians that predicate *constants* cannot be guaranteed to correspond to language independent properties.[33] It can no more be guaranteed that the *structure* of subject–predicate sentences or prepositional clauses corresponds to the structure of facts.

An appeal to examples of—what are claimed to be—higher-order universals may be expected to help resolve some of the concerns raised here (though if elementarism is correct then any appeal to higher-order universals must be mistaken). Consider: Socrates is an instance of wisdom; wisdom is an instance of *being a virtue*; Socrates, however, is not. These facts—about what is and what is not an instance of such-and-such—suggest that exemplification is intransitive. Higher-order universals are exemplified by lower-order universals but not by particulars.

This appeal to examples fails because the evidence for the intransitivity of the exemplification relation leaves us in the dark about whether it is also asymmetric. Exemplification could very well be intransitive—so preventing Socrates from being a virtue—whilst also being symmetric. Of course reflexivity plus intransitivity yields asymmetry but exemplification is irreflexive (or so the proponent of the exemplification conception hopes).

Suppose, however, that exemplification is established in some other way to be asymmetric. Does the admission of higher-order universals then settle whether it is Socrates that exemplifies wisdom or wisdom that exemplifies Socrates? Hardly. Wisdom may simultaneously exemplify Socrates and *being a virtue* without damage to the facts. The only notable consequence of this pattern of exemplification is one that the admission of higher-order universals does nothing to rule out. It is the consequence that Socrates is a species of determinable instantiated by different determinate properties, on an ontological par with the properties *being a virtue* and *being a colour*. If Socrates is a species of determinable then instead of conceiving determinate properties (*being wise*, *being pale*) as ways of grouping individuals (Socrates, Plato), we will have to think the other way around; Socrates and Plato will have to be primarily considered as ways of grouping determinate properties and relations. This proposal may initially seem strange or awkward. But it remains to be established that the proposal seems so because it conflicts with an antecedent metaphysical fact of the matter—the fact that Plato and Socrates are particulars, not universals—rather than simply because the proposal runs against the grain of more familiar ways of thinking and talking about Plato and Socrates.

[33] See, for example, Armstrong 1978, p. 9, Mellor 1993, p. 101.

There can be no guarantee either that the conception of the particular–universal distinction at issue will assign the sorts of items we intuitively consider to be objects (particulars) or properties (universals) to the respective extensions of those concepts. Even if it is granted that Socrates exemplifies wisdom it is no immediate consequence that Socrates is a particular. For ordinary material objects may in turn be conceived as properties of (exemplified by) the underlying events, temporal parts or spatio-temporal regions that constitute their life histories.[34] Even Socrates—an archetypical particular of ordinary discourse—may turn out to be a universal. This too may appear a disturbingly peculiar proposal. But the relation of exemplification is so abstractly conceived that the suggestion does precious little to rule in or out any more definite conception of the relationship between a person and the events that constitute a life. (The extent to which this objection appears compelling will depend upon the extent to which we take the concept of particular to be tied to the concept of an ordinary thing and, of course, there are a variety of theoretical options available upon this question).

The criticisms that have been made proceed (roughly) by attempting to reverse the roles of particulars and universals with respect to the tie of exemplification. More specifically, they have concentrated upon the attempt to reverse the roles of particulars and monadic universals. But this suggests a weakness in the strategy applied. For it may be that the categorical contrast between particulars and universals only emerges when consideration is made of the differences that obtain between particulars and relational universals. Indeed, a mere truism—one that Armstrong mentions—appears to settle that their roles cannot so easily be reversed: relations *obtain* or *hold between* their relata whereas particulars perform no analogous function.

Let us consider how this objection is to be met. Let it be granted that particulars and relational universals differ. It still does not follow that the particular–universal distinction is necessary or exclusive. For we are left entirely in the dark concerning the manner in which particulars and monadic universals differ. In response it may be suggested that there is a common difference to be uncovered in the neighbourhood of these reflections. It is the difference expressed by the fact that whereas partic-

[34] Whitehead advances this way of thinking, speaking of an enduring material object as 'a character or property which can be predicated of the situation' (1920, pp. 18–9, 143–4). Ramsey declared that his sceptical view of the particular–universal distinction was 'strikingly confirmed by the case of Dr Whitehead' (Ramsey 1925, pp. 23–4, 1926, pp. 32–3). The significance of Whitehead's theory for Ramsey's view is, however, primarily logical and to be distinguished from the point made above concerning the intuitive extension of the concept *material object*. Rather, for Ramsey, Whitehead's theory reveals how a distinction between wide and narrow scope occurrence may be drawn for expressions denoting material objects.

ulars exemplify (first-order) polyadic universals, monadic universals do not. It is only particulars that exemplify them. But this response wants an argument in its favour. Why suppose that the facts of instantiation display the envisaged structure? Why think that the world conveniently bifurcates into two mutually exclusive classes in the manner proposed? Why assume that monadic and polyadic universals form a (metaphysically) natural kind? The response under consideration does not answer these questions—the very questions to which we have sought answers—but assumes already that the particular–universal distinction is written deep into the nature of things.

4. Bradley's regress and the incompleteness of universals

The conceptions considered so far share a flaw characteristic of many accounts of the particular–universal distinction. They are divorced from whatever theoretical insight (or oversight) may have supplied their original motivational force. We are no longer in a position to appreciate the demand for the differences they express. There is, however, another conception of the particular–universal distinction—the third identified (sect. 1.1 above)—that arises as a solution to a problem that continues to bedevil us. The problem is one of explaining how a universal succeeds in being instantiated by a particular (or particulars).

Bradley posed the question: 'What is the difference between a relation which relates in fact and one which does not?' (1911, p. 74; cf. 1897: p. 28). The question is difficult to answer for the following reason. On the one hand, more is required than the mere existence of a relation (R) and its terms ($t_1, \ldots, t_n$) to ensure that the relation actually ('in fact') relates its terms; even if R and $t_1, \ldots, t_n$ exist R may still not be instantiated by $t_1, \ldots, t_n$. On the other hand, as Bradley recognized, the difference between a relation which actually relates its terms and one which does not cannot consist in the fact that the former stands in a further relation to its terms. Suppose that for a relation R to actually relate $t_1, \ldots, t_n$ there must be a further relation R^* that obtains between R and $t_1, \ldots, t_n$. Then the same reasoning will also apply to R^*: if R^* is to relate its terms then R^* is also required to stand in a relation to them. So there must be some further relation R^{**} that R^* stands in to R and $t_1, \ldots, t_n$, and so on. More generally, if the instantiation of a universal by a particular or particulars requires that the universal stand in a further relation to the particulars in which it inheres then an infinite regress ensues.

It is an adequacy constraint on an account of instantiation that it shows either (a) Bradley's regress can be avoided or (b) it is a regress

that need not be avoided. Russell—who, at different times, entertained both options—once proposed that the regress arises only because 'Bradley conceives a relation as something just as substantial as its terms, and not radically different in kind' (Russell 1927, p. 202). This suggests that if a relation (a universal) is conceived as less substantial, radically different in kind from its terms (particulars), then the regress does not arise; because R is radically different in kind from $t_1, \ldots, t_n$ no further relation is required to relate R to $t_1, \ldots, t_n$. Russell's suggestion is close to one more often associated with Frege.[35] According to this line of thought, instantiation results from the fundamental union of objects and concepts. In order for an object and concept to hold together in this way one must be incomplete. It is concepts that are so; they have a gap waiting to be filled by a complete entity, an object. It is because concepts are incomplete that objects and concepts come into the world already suited to fit together. When a concept inheres in an object, the object fills the gap and saturates the concept; no further relation is required to bring object and concept together. Bradley's regress is thereby avoided.

This suggests a way of ascribing content and lending credibility to the particular–universal distinction. Identify the distinction between particulars and universals with the distinction between *complete* and *incomplete* entities. Instantiation then results from complete particulars *saturating* incomplete universals. If this conception of the particular–universal distinction can be shown to be indispensable to an understanding of instantiation (avoiding Bradley's regress) then here may be found a justification for the necessary and exclusive character that tradition assigns to the distinction.

4.1 Frege on incompleteness

The proposed identification rests upon a failure to appreciate the kind of insight that Frege strove to achieve. Frege's concern was not to account for the capacity of objects to instantiate concepts. It was to account for the unity of the proposition—the capacity of objects and concepts to unite to form judgeable contents.[36] Frege's idea was to illuminate the difference between a mere collection of items (expressed by a list) and a genuinely judgeable content (expressed by a sentence) by conceiving of the latter as resulting (in the monadic case) from the saturation of an incomplete concept by a complete object. By conceiving

[35] See Grossman 1961, p. 88.

[36] See Frege 1880/1, pp. 16–7, 1882, p. 101, 1892, p. 54–5 and 1903, pp. 569–70. See Currie 1984, pp. 147–57 for an illuminating discussion of this murky aspect of Frege's thought.

of concepts and objects in this way Frege hoped to avoid a regress of predication: the regress that threatens to ensue from supposing that a third element—a relation—is required to lock object and concept together in to a content. But since propositions can be false (even necessarily false), it cannot follow from the fact that an object and concept unite to form a judgeable content that the object instantiates the concept. So even if Frege is right to claim that concepts must be conceived as incomplete, objects as complete in order to account for the unity of the proposition (to provide relief from the regress of predication) it does not follow that the complete–incomplete distinction may be invoked to account for the unity of the fact (to provide relief from Bradley's regress of instantiation).[37]

The object–concept distinction that Frege endorsed does not then belong to the family of distinctions under consideration in this paper that appeal to the different ways in which particulars and universals lock together in instantiation. On the one hand, this means that Frege's account can hardly be faulted for failing to illuminate the way in which particulars and universals lock together in instantiation. On the other hand, this also means that Frege's account holds out the promise of providing an alternative source of insight into the particular–universal distinction. It may be doubted whether Frege's account does so. It may be questioned whether the Fregean distinction between complete and incomplete items supplies any sort of account of the unity of the proposition; a mere grasp of this distinction does not enable us to distinguish a genuinely judgeable content from a mere collection of complete and incomplete items listed one after another. It may also be questioned whether the particular–universal distinction may be assimilated to Frege's distinction between object and concept. But whether Frege's account of the unity of the proposition succeeds, or not, is a matter for independent investigation. If there is a particular–universal distinction it is important to identify just where in our theorising this commitment is forced upon us. So if there is any credibility to the thought that an appreciation of the significance of Bradley's regress already forces the particular–universal distinction upon us—independently of Frege's concerns about the unity of the proposition—then it is important to establish whether this is so.

[37] *Contra* Dummett 1973, pp. 174–5.

4.2 Especial incompleteness, actual instantiation and higher-order universals

Is there any credibility then to the thought that instantiation results from complete particulars saturating incomplete universals? There is first a difficulty with supposing that universals are, by contrast to particulars, especially incomplete. There seems nothing to determine that it is the universals that are incomplete rather than the particulars. Why should instantiation not be brought about by universals saturating particulars? Indeed, why should either particulars or universals be thought *especially* incomplete? Neither particulars nor universals are capable of being instantiated in isolation. They all seem incomplete, demanding the presence of other items with which to enter into instantiation. Perhaps particulars and universals are capable of instantiating one another not because any are especially incomplete but because they may hang together, as Wittgenstein suggested, like 'links of a chain'.[38]

In response, it may be again suggested that it is an appreciation of the character of relations that is critical to an understanding of the particular–universal distinction. For n-adic relations are n-fold unsaturated; they stand in need of completion by some definite number n of other items. By contrast, objects do not stand in need of such definite completion. So it is in the case of relations that the especially unsaturated character of universals is revealed. But this objection assumes that universals have a definite adicity and doubt has already been cast upon this assumption.

More importantly, the thought that universals are especially incomplete does not even begin to address the issues that Bradley raised with his regress argument. Recall: 'What is the difference between a relation which relates *in fact* and one which does not?' (my italics). The contrast between incomplete universals and complete particulars tells us noth-

[38] See Wittgenstein 1922, 2.03. Commenting on Russell's claim that universals are especially incomplete, Ramsey makes the point in the following way: 'The great difficulty with this theory lies in understanding how one sort of object can be especially incomplete; namely that it can only occur in a fact by connection with an object or objects of suitable type; just as any name is incomplete, because to form a proposition we have to join it to certain other names of suitable type' (Ramsey 1925, p. 17). Bergmann stresses a related thought when reflecting upon what he takes to be two fundamental likenesses between particulars ('individuals') and universals ('characters'): 'Just as there is no individual that is not qualitied, so there is no character that is not exemplified. This is one fundamental likeness … Neither an individual nor a character is the kind of entity a sentence stands for. This is a second likeness … one may propose "individuals and characters are equally unsaturated" as an alternative way of stating the second fundamental likeness' (Bergmann 1958, p. 209). Armstrong (1997, pp. 28–9) also offers the 'Frege inspired' suggestion that universals are incomplete because they are 'abstracted in thought' from entire states of affairs. But, as Armstrong himself admits, particulars are also incomplete in this sense (1997, p. 123) See MacBride 1998b for further discussion.

ing concerning how it comes about that particulars *actually* instantiate universals. Even if it is in the nature of universals to be saturated by particulars this does not determine that a given universal is actually instantiated. Moreover, even if it is granted that a given universal is instantiated this still does not determine that a specific particular is in fact instantiated by it. It only follows that the universal is saturated by *some* particular. For all that has been said, an extra relation may be required to bring a universal into actual union with a particular. Bradley's regress then beckons once more.

To avoid this difficulty the expedient may be adopted of identifying universals with functions from objects to possible worlds. According to this identification each universal U is a function from particulars $p_1, \ldots, p_n$ to the possible worlds where $p_1, \ldots, p_n$ instantiate U. This writes into the metaphysical nature of each universal which particulars saturate it at which worlds, including the actual one. However, two further difficulties then arise. First, Bradley's regress threatens not to go away but simply to be writ large. For if possible worlds are themselves universals, or collections of universals, then the problem of explaining how universals actually inhere in particulars is transformed into the problem of explaining how possible worlds—conceived as universals or akin to universals—in fact inhere. We are certainly no nearer a solution to the latter problem than the former. Second, the identification of universals with functions raises the problem of function–argument unity. It is imperative not only to distinguish (i) a mere collection of items from (ii) a proposition in which these items unite to form a judgeable content and (iii) a fact in which these items are instantiated together. We must also distinguish (iv) a mere collection of a function and its arguments from (v) the unity that results from inserting the arguments into the function. It is because the problem of accounting for the difference between (iv) and (v) is so similar in kind to the problems of distinguishing (i) from (ii), and (i) from (iii), that the identification of universals with functions cannot significantly illuminate the way in which particulars are capable of instantiating universals.

The concern over the theoretical adequacy of the proposal that universals are especially incomplete is heightened by its failure to account for how higher-order universals are instantiated by lower-order universals. If the complete–incomplete distinction really is the particular–universal distinction then both lower and higher-order universals are incomplete. Now according to the account under investigation, instantiation comes about when complete items saturate incomplete items. But the inherence of higher-order universals in lower-universals does

not meet this requirement. For both higher and lower-order universals are incomplete. So the former cannot inhere in the latter. To suppose that they could inhere would be like supposing two dry sponges could be wrung together to produce one wet sponge.[39] The metaphor of incompleteness fails at this point to illuminate how instantiation is possible. The metaphor can hardly be relied upon to distinguish particulars from universals.

5. Conclusion

The particular–universal distinction has been found wanting in a number of respects. Ramsey rejected the distinction because, he claimed, the expressions 'particular' and 'universal' are ultimately 'devoid of connotation'. Austin criticized the particular–universal distinction as he did the material object–sense-data distinction. He advised his reader to reject the antithesis rather than accept one or other side of the distinction.[40] The difficulties that bedevil attempts to conceive of universals as especially *incomplete* or tied to particulars by an *asymmetric* tie bear these charges out. But, *contra* Ramsey and Austin, some conceptions of the particular–universal distinction — those that deny the existence of multigrade universals or presuppose the Axiom of Foundation — may also be understood in a way that imposes significant and substantial demands upon the shape of reality. Once these demands are understood for what they are it is no longer obvious that the distinction merits our acceptance.

Whether or not these responses can be sustained will depend upon the point and purpose to which the concepts of *particular* and *universal* are put, what useful things can be said about their import, and how they interact with other concepts of interest to us. So if these lines of response are to be developed there will need to be a shift in the focus of

[39] A parallel difficulty arises when Frege comes to account for the unity of higher-order propositions. Of course, within Frege's system it is possible for lower-order concepts (F) to saturate higher-order concepts ($\exists x \Phi x$). But this possibility is not accounted for by the metaphor of incompleteness because both the concepts F and $\exists x \Phi x$ are incomplete. Frege does, however, allude to different kinds of incompleteness (1891, p. 51, 1903, pp. 571–2). He suggests that whereas objects saturate concepts in one way, concepts saturate higher-order entities in another. But it is entirely unclear whether the metaphor of incompleteness itself contributes in any significant way to an understanding of how these different kinds of saturation are possible.

[40] See Ramsey 1925, p. 28 and Austin 1962, p. 4. Austin writes: 'One of the most important points to grasp is that these two terms, "sense-data" and "material things", live by taking in each other's washing—what is spurious is not one term of the pair, but the antithesis itself'. He then adds in footnote: 'The case of "universal" and "particular", or "individual", is similar in some respects though of course not in all. In philosophy it is often good policy, where one member of a putative pair falls under suspicion, to view the more innocent-seeming party suspicious as well'.

enquiry. It will not do to simply provide necessary and sufficient conditions for being a particular or a universal. Only by properly appreciating the role of the concepts of *particular* and *universal* in underpinning the intelligibility of science, mathematics and cognition will we be able to say in a principled rather than dogmatic way that the particular–universal distinction should, or should not, enjoy such-and-such a theoretical character. There are a number of different ways in which one might respond to these criticisms. One broad line of response would be to take issue with the constraints that have been imposed on introducing an adequate conception of the particular–universal distinction. These constraints, it may be argued, impose too high a threshold. One response of this kind would question whether there is any need to conceive of the particular–universal distinction as fundamental — necessary and exclusive — in the sense presupposed by our discussion. Another line of response would query whether there is any need to characterize the particular–universal distinction in terms other than its own (compare the manner in which Grice and Strawson (1956) defend the analytic–synthetic distinction against the criticisms of Quine's 'Two Dogmas of Empiricism').

Of course, it also remains a possibility that there is still a particular–universal distinction — necessary and exclusive — that imposes itself upon the world, only a distinction that needs to be expressed by some other means without recourse to the notion of instantiation.[41] But even if this possibility is realized it is still the case that the three different conceptions considered and rejected — that make relevant play with the notion of instantiation — encode many of the things that philosophers familiarly say by way of characterization of the particular–universal distinction. This leaves it an open question whether philosophers have always intended to express with these characterizations the true particular–universal distinction whatever it may be, however obscurely felt. For they may have been expressing something else, something about our language, our perspective upon the world. It is ironic that whilst

[41] For example, John Wisdom responded to Ramsey's scepticism about the particular–universal distinction by claiming that the identity of indiscernibles applies to universals but not particulars (Wisdom 1934, pp. 208–9). Williams 1986, p. 3 also distinguishes particular from universal in this way. Armstrong (in his 1989, pp. 44, 57–61) independently took this line against Ramsey but later relented, denying that the relevant version of the identity of indiscernibles applied to either particulars or universals (Armstrong 1997, pp. 168–9). Sellars (1948, pp. 293, 301), on the other hand, argued that his own variant of the principle applies to both particulars and universals. Lewis, by contrast, later argued that a version of the identity of indiscernibles applies to particulars but not universals (1986, pp. 220–48). The fact that few of these authors mean just the same by 'identity of indiscernibles' provides some measure of the work that still needs to be done to achieve a stable conception of the territory.

proclaiming the liberation of metaphysics from language those who would employ instantiation to characterize the particular–universal distinction may really have been influenced and bound by their own terms of speech. [42]

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