# *On how we know what there is*

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There are, it is said, illuminating metaphysical analyses of causation, laws, resemblance, modality, set theory and predication that posit two distinct kinds of entities, particulars and universals (Armstrong 1983, 1989, 1997, Lewis 1983, Tooley 1987, Bigelow 1988, Bigelow and Pargetter 1990, Fales 1990, Newman 1992 and Mellor 1993, 1995). The extent of the illumination shed by such analyses will be determined, in part, by the extent to which the distinction between particulars and universals is already understood. Unless these analyses are backed up by some tenable account of the particular–universal distinction they cannot be relied upon to extend our knowledge. Until we possess a proper understanding of that distinction we should look askance at analyses that presuppose it.

According to Armstrong, the particular–universal distinction is a distinction between all the entities that figure in states of affairs in one sort of way and all the entities that figure in states of affairs in a different sort of way. Armstrong claims that it can be determined a priori that particulars and universals so differ. This a priori claim of analytic ontology contrasts starkly with Armstrong's denial that it can ever be determined a priori just what particulars and universals there in fact are. What particulars and universals there are, Armstrong declares, is a matter to be determined a posteriori by empirical investigation. It is in virtue of this last claim that Armstrong's theory of particulars and universals is 'a posteriori realist'.

Armstrong's a posteriori realism may not be a posteriori enough. The a priori arguments Armstrong provides fail to determine that particulars and universals do in fact contribute to states of affairs in different sorts of ways. The failure of these arguments suggest that it cannot be determined just how particulars and universals differ independently of determining just what particulars and universals there are. So, if Armstrong is correct to suppose that it takes a posteriori investigation to establish what particulars and universals there are, it may also, contra Armstrong, take a posteriori investigation to establish how particulars differ from universals. Metaphysicians readily assume that the particular–universal distinction is an a priori distinction. This assumption may be mistaken. Rather than being a priori, the particular–universal distinction may be a posteriori instead.

*1.* Particulars and universals are distinct kinds of entities, Armstrong claims, because their occurrence in states of affairs is governed by different

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metaphysical principles. The occurrence of universals in states of affairs ('instantiations') is governed, Armstrong contends, by the Principle of Instantial Invariance (Armstrong 1978b: 93–94, 1986: 87, 1989a: 40, 1997: 85)

(PII) For any number $n$, if a universal $x$ is $n$-adic in one instantiation, then $x$ is $n$-adic in each of its instantations.

Particulars and universals are constituents of instantiations. A universal $x$ is $n$-adic in an instantiation $\Xi$ of which it is a constituent, if $\Xi$ has $n$ constituent particulars. A universal $x$ is unigrade (or, more determinately, $n$-adic simpliciter) if $x$ is $n$-adic in each of its instantiations. A universal $y$ is multigrade if $y$ is $n$-adic in some of its instantiations and $m$-adic (where $m \neq n$) in some other of its instantiations. (PII) says that all universals are unigrade; if universals obey (PII) then 'the number of individuals [a universal] links in a token state of affairs is fixed'. [12]

The occurrence of particulars in states of affairs is governed, according to Armstrong, by the Principle of Particularization (Armstrong 1978b: 64, 82–83, Armstrong 1989a: 44):

(PP) Each particular instantiates at least one monadic universal.

This principle determines that each particular $y$ instantiates some monadic universal but leaves open whether $y$ instantiates any other distinct monadic universals or even any dyadic or … $n$-adic universals. So whilst the adicity of a universal is determined once and for all by (PII), the adicity of the universals that a particular instantiates is not determined by (PP). It is because (PP) determines less about the occurrence of particulars in states of affairs than (PII) determines about the occurrence of universals in states of affairs, that particulars and universals are, according to Armstrong, such different kinds of entities. Particulars are instantial free-wheelers, capable, by contrast to universals, of tracing many different patterns of instantiation across the totality of states of affairs that comprise the world.

Armstrong contends that (PP) and (PII) together give substance to an a

[1] Armstrong 1989a: 44. Another (plausible) way of thinking about adicity allows for the possibility of an $n$-adic ($n > 1$) universal linking $k < n$ particulars in a state of affairs by relating at least some of those particulars to themselves. Perhaps Armstrong discounts this way of thinking because of independent arguments he has devised to show that there can be no such 'reflexive' relations (Armstrong 1978b: 91–93). But since some of these arguments are a posteriori it is difficult to see how they can underwrite the a priori status of (PII).

[2] Armstrong is committed to the possibility of 'ones' which exhibit no monadic features by his own theory of singletons (Armstrong 1991: 196–99, 1995: 626–27, 1997: 193–94).

priori distinction between particulars and universals. To vindicate this claim, Armstrong must demonstrate that (PP) and (PII) are both a priori true. He must show a priori that there are neither particulars which fail to instantiate monadic universals nor universals which are multigrade. The a priori arguments that Armstrong provides to show that there are no such entities are ineffective.

2. To show a priori that there are no particulars which lack monadic features Armstrong offers the argument from 'unit-hood'. To be a particular, Armstrong claims, is to be '*one* of a kind'. It is to be an entity with 'certain definite bounds' which make that entity 'just *one* thing'. An entity which failed to be one thing of a kind to the exclusion of other numbers of things of that kind would fail to be '*a* particular'. It follows that each particular must fall under some 'particularizing' universal that 'makes that particular just one, and not more than one, instance of a certain sort'. Armstrong concludes that every particular instantiates at least one monadic universal, the universal that particularizes it (Armstrong 1978b: 64, 82–83).

This argument relies on the assumption that each particularizing universal is monadic. This assumption is unwarranted. The notion of being 'one of a kind' is very weak. It does not mean anything like falling under a sortal kind that divides its extension. It just means being one of a kind in a way that excludes being other numbers of things of that kind (Armstrong 1978b: 64, 1993: 98). This weak notion leaves it open whether the kind in question is monadic or relational. Consequently, a particular may be 'particularized' not by some monadic universal it instantiates but by some relational property it possesses. Relational properties supervene on the presence of entities instantiating relational universals. The requirement that particulars be 'one of a kind' does not, therefore, entail that particulars instantiate anything more than relational universals.

The argument from unit-hood fails. For all that Armstrong has shown, the world might (epistemically) have contained particulars which, contra (PP), fail to instantiate any monadic universals. Grant Armstrong his claim that the particular–universal distinction is the joint product of (PP) and (PII), inheriting its epistemic status from those principles. Since Armstrong has failed to show that (PP) is a priori it follows, without any independent examination of his arguments for (PII), that Armstrong has failed to show that the particular–universal distinction is a priori.

Armstrong's claim that the particular–universal distinction is the joint product of (PP) and (PII) is, however, mistaken. The instantial behaviour of universals is (supposedly) rigidly restricted by (PII). By contrast, Armstrong has it, particulars are freewheelers, their instantial behaviour

restricted at most by (PP). But if (PP) fails it does not follow, contra Armstrong, that there is no particular–universal distinction. Rather particulars and universals will differ more radically than even Armstrong had supposed. For if (PP) fails then particulars really will freewheel with no restrictions whatsoever on their instantial behaviour. The instantial behaviour of universals will, by contrast, remain strictly governed by (PII). It was indeed just this contrast between particulars and universals that Russell invoked when he introduced the concept of adicity to the theory of universals (Russell and Whitehead 1962: xix). Armstrong's arguments in favour of (PII) therefore demand independent examination since the a priori truth of (PII) will alone serve to ground an a priori distinction between particulars and universals.

Armstrong first argument for (PII) proceeds by reductio (Armstrong 1978b: 94, 1989a: 40, 1997: 85, Tooley 1987: 83)

(1) suppose that some universals are multigrade.
(2) (1) entails the possibility of three states of affairs containing identical universals ($R_1$, $R_2$, and $R_3$) but with differing numbers of constituent particulars: $R_1\langle a,b\rangle$; $R_2\langle c,d,e\rangle$; $R_3\langle f,g\rangle$.
(3) in (2), $R_2$ 'lacks complete resemblance in its own intrinsic nature' to $R_1$, although $R_1$ does so resemble $R_3$.
(4) identity entails 'complete resemblance'.
(5) given (3) and (4), $R_2$ is not identical with $R_1$ or $R_3$.
(6) therefore, the possibility envisaged by (2) cannot really be a possibility as (1) implies it to be.
(7) therefore, rejecting (1), all universals are unigrade.

This argument fails to establish a priori that there are no multigrade universals. Examination of (3) reveals a gap in the argument. There Armstrong claims that $R_2$ differs in its intrinsic nature from $R_1$ and $R_3$ because $R_2$ occurs in a state of affairs with a different number of constituent particulars from the state of affairs in which $R_1$ and $R_3$ occur. Armstrong's claim is based on the assumption that the number of particulars that a universal combines with to form a state of affairs is an intrinsic feature of that universal, or is determined by the presence of some intrinsic feature it possesses. Armstrong provides no justification for this assumption.

An alternative assumption claims that the number of particulars that a universal combines with to form a state of affairs marks not an intrinsic, but only a relational feature of that universal. According to this assumption, the occurrence of a universal in a state of affairs with $n$ constituent particulars does not determine which, if any, intrinsic features a universal possesses. The intrinsic features a universal possesses simply do not figure

in the mechanisms of instantial occurrence. A universal occurs in a state of affairs just when that universal figures in a suitable sort of relation to that state of affairs and its constituent particulars.

Adoption of this assumption blocks Armstrong's argument. If occurrence in a state of affairs with $n$ constituent particulars is not an intrinsic feature of a universal then it does not follow from the fact that $R_2$ occurs in a state of affairs with three constituent particulars, whilst $R_1$ and $R_3$ occurs in states of affairs with two constituent particulars, that $R_1$, $R_2$ and $R_3$ differ in any of their intrinsic features. All that follows, on this assumption, is that $R_2$ possesses the relational feature of combining with 3 particulars relative to $R_2\langle c,d,e\rangle$, whilst $R_1$ and $R_3$ possess the relational feature of combining with 2 particulars relative to $R_1\langle a,b\rangle$ and $R_3\langle f,g\rangle$ respectively. These relational features are compatible and may be possessed by one and the same universal. Therefore, given the assumption that the number of particulars that a universal combines with to form a state of affairs marks not an intrinsic but only a relational feature, Armstrong's argument fails to establish that $R_1$, $R_2$ and $R_3$ are not one and the same multigrade universal $R$, a universal which possesses each of the relational features in question.

By failing to provide a justification for the assumption that the number of particulars a universal combines with to form a state of affairs marks an intrinsic feature Armstrong begs the question against the possibility of multigrade universals. Indeed, it is difficult to see how Armstrong could provide such a justification. Armstrong himself introduces adicity as a relational rather than an intrinsic feature. He talks of a universals being '*n*-adic *in* one instantiation' or, more explicitly still, '*n*-adic *with respect to* a particular instantiation' (my italics). It is true that Armstrong also introduces the property of being '*n*-adic *simpliciter*' (his italics), a property which is not on the face of it relational. But being *n*-adic simpliciter is no intrinsic feature either since it is defined by Armstrong in a relational way: a universal is *n*-adic simpliciter if it is '*n*-adic with respect to all its instantiations' (Armstrong 1978b: 94, 1989a: 40)

Amstrong's second argument for (PII) appeals to intuition (Armstrong 1989a: 40):

> Another argument is: Properties appear to be no more than the monadic case of universals. But if that is so, and if Instantial Invariance is denied, why not both *Rab* and *Rc* with *R* the same universal? This conclusion, however, seems very unintuitive.

This is weak. First, it is not clear that we have any such intuition. We do seem to have the intuition that certain universals are unigrade. We do, for example, intuitively suppose that the spatial relation *being two metres*

*from* can occur only in states of affairs with two constituent particulars. But the intuition that certain universals are unigrade leaves open the possibility that there might be other universals which are multigrade. Second, even if we do possess the intuition that all universals are unigrade, the source of this intuition may lie in our a posteriori knowledge that all the universals there are unigrade. If so, Armstrong can hardly rely on such an intuition to establish a priori that there are no multigrade universals.

Mellor, who advocates his own distinctive brand of a posteriori realism, offers an alternative argument against the possibility of multigrade universals (see 1995: 207):

> [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. But then multigrade relations are not real universals, merely entailments of the real relations that define them.

Mellor's argument rests on the existential hypothesis that for every multigrade universal $x$ there exists a unique unigrade universal in terms of which $x$ is defined. In fact this hypothesis is stronger than any Mellor requires. For the purposes of denying that there are any 'real' multigrade universals Mellor need only suppose that for every multigrade universal $x$ there exists some unigrade universals in terms of which $x$ is defined.

Mellor, however, provides no justification for either hypothesis. Mellor supposes that for any (putative) multigrade universal there will exist sufficient unigrade universals to define it away. But why must there always exist enough unigrade universals to perform this task? Why might there not exist a multigrade universal that resisted definition in unigrade terms? Why is Mellor's argument applied to universals any better than the corresponding argument applied to particulars: particulars cannot combine to form states of affairs with universals of different adicities since such ('multigrade') particulars can be defined in terms of simple ('unigrade') particulars which combine only with universals of the same adicity? By failing to answer these questions Mellor's argument begs the question against the possibility of multigrade universals.

Of course, Mellor may be correct to assume that all multigrade universals are defined in terms of unigrade universals. The world may just be that way. Nevertheless, the brute fact, if it is a fact, that the world is that way fails to provide us with any a priori assurance that all universals are unigrade and none are multigrade.

A posteriori realists, such as Armstrong and Mellor, follow (1925) Russell in supposing a priori that there are no multigrade universals. Russell's a priori conviction that there are no such entities flowed from his

assumption that the existence of universals could be determined a priori. Universals, Russell held, correspond a priori with the predicates of a perfect language, a language regimented by the forms of predicate calculus. Since predicate calculus admits only 'unigrade' predicate letters which combine with a fixed number of names to form a sentence, Russell was able to determine that the only universals which exist are those which combine with a fixed number of particulars to form a state of affairs.[3] But a posteriori realism rejects the assumption that the existence of universals can ever be determined a priori (by reflection on the contours of language or otherwise). It is therefore difficult to see what resources an a posteriori realist could possibly deploy to construct an a priori proof that there are no multigrade universals.

*3.* What motivated (PII) was the idea that particulars and universals enter into different patterns of instantiation. (PII) attempted to trace out those patterns by counting the number of entities that a particular or a universal combines with to form states of affairs. (PII), it turns out, is too restrictive a 'counting' principle. We lack a priori reason to suppose that particulars and universals enter into just those patterns of instantiation that (PII) dictates. Nevertheless, there may be other less restrictive counting principles that trace out more flexible patterns of instantiation and serve Armstrong's purpose of distinguishing particulars from universals a priori.

If (PII) fails then it is epistemically possible that there are states of affairs of the form $U\langle p_1\rangle$, $U\langle p_1, p_2\rangle$, …, $U\langle p_1, p_2, \ldots, p_n\rangle$, with $U$ the same multigrade universal in each. But rather than showing that no distinction can be drawn between particulars and universals this epistemic possibility seems to display just such a distinction, a distinction expressed by an alternative counting principle:

(CP) Each atomic state of affairs contains at least one particular but only one universal.

(CP) embodies the existential assumption that the constituents of atomic states of affairs form two discrete classes $X$ and $Y$ such that, for any number $n \geq 2$, if an atomic state of affairs has $n$ constituents, then one of those constituents belongs to $X$ and $n-1$ of those constituents belong to $Y$. (CP) identifies $X$ as the class of universals and $Y$ as the class of particulars.

[3] This line of reasoning makes Russell's view intelligible but not convincing. Predicate calculus ought to admit 'multigrade' predicates and Russell ought to have admitted the existence of multigrade universals. For reasons of space I cannot argue for these claims here.

Are there, or might there have been, counterexamples to (CP)? Consider: 'Thatcher is more of a conservative than Blair is a socialist'. Prima facie, this sentence is made true by a state of affairs that is both atomic and contains more than one universal (e.g. *being a conservative*, *being a socialist*). This counterexample may be defused by casting around for another analysis. For instance, the state of affairs might be analysed as a molecular quantification over degrees of universals. But why should another analysis be cast around for? Why should we prepared a priori to incur a weighty ontological commitment to universals by degree rather than deny (CP)? If (CP) is to deliver a priori a particular–universal distinction, an argument is required to show a priori that states of affairs are constructed in the manner that (CP) supposes.

Armstrong currently conceives of universals as 'unsaturated' entities (Armstrong 1997: 28–29). According to that conception, a universal is a 'gutted state of affairs'. It is what remains of a state of affairs once it's constituent particulars have been 'abstracted away in thought'. 'So', Armstrong reasons, a universal is 'a state-of-affairs type, the constituent that is common to all states of affairs which contain that universal'. Armstrong's conception suggests an a priori argument for (CP): there can be only one universal in a state of affairs because only one constituent can remain when all the other constituents of that state of affairs have been abstracted away.

This argument fails. In the state-of-affairs metaphysic that Armstrong commends, particulars and universals are both but gutted remnants (Armstrong 1978a: 110, 1983: 84, 1989a: 43, 1993: 230). Particulars, like universals, occur only as the constituents of states of affairs. They are not given independently of their occurrence in states of affairs but are arrived at by a process of 'abstraction'. Particulars are what remain of a state of affairs once its other constituents have been abstracted away (Armstrong 1989b: 96, 1993: 433, 1997: 123). A particular, just like a universal, is a state-of-affairs type, the constituent that is common to all the state of affairs that contain it. Consequently, Armstrong's conception of universals as unsaturated provides no support, and a fortiori no a priori support, for (CP).

Given a prior characterisation of particulars, Armstrong's conception could be applied to identify universals as those entities which remain once the particulars in a state of affairs have been abstracted away. But unless that characterisation served to distinguish particulars from universals, this method would be ineffective since it would not be possible to determine which constituents of a state of affairs are particulars, rather than universals, and require to be abstracted away in order to isolate the universal in a state of affairs. This just shows that Armstrong's conception, rather than

providing grounds for supposing that there is a particular–universal distinction, simply presupposes that such a distinction exists. It remains unclear just what sort of a priori justification (CP) could possess.

At any rate, (CP) suffers intrinsic defects that prevent it delivering a particular–universal distinction a priori. First, given that necessarily equivalent states of affairs are identical, (CP) cannot distinguish a priori all particulars from all universals.[4] (CP), if true, distinguishes particulars and universals that occur in atomic states of affairs. But it is epistemically possible that some universals occur only in molecular states of affairs. For example, it may be that the world is infinitely complex and contains only conjunctive universals (whose conjuncts are conjunctive, and so on ad infinituum).[5] The state of affairs in which each conjunctive universal occurs ($F\&G\langle a\rangle$) is necessarily equivalent to, and therefore identical with, some molecular states of affairs ($F\langle a\rangle\&G\langle a\rangle$). Conjunctive universals do not occur in atomic state of affairs. Consequently, (CP) cannot distinguish particulars from these universals a priori.

Second, (CP) is flawed in the way that all counting principles are. In 'lower-order' states of affairs, particulars instantiate universals. In 'higher-order' states of affairs, universals instantiate further universals. Higher-order states of affairs have been posited (by Armstrong and others) for a variety of purposes, including that of providing an account of natural laws.[6] The epistemic possibility of such states of affairs undermines (CP)'s claim to be a priori. Contra (CP), higher-order states of affairs are atomic but contain more than one universal and no particulars (e.g. $N\langle F,G\rangle$, where $N$ is a dyadic universal relating the universals $F$ and $G$). The epistemic possibility of higher-order states of affairs undermines the claim of any counting principle to be a priori. For any counting principle which distinguishes particular and universal by determining the relative proportion of particulars and universals that go to make up states of affairs will fail if there are states of affairs which lack any particulars to be counted.

This difficulty may be avoided by supposing that particulars and universals are arranged in a hierarchy of orders (where particulars are 0-order

[4] Armstrong 1997: 133–34, endorses this identity criteria for states of affairs.

[5] See Armstrong 1997: 31–33 and Oliver 1992: 95–96. Even if there are atomic states of affairs there may be other reasons for admitting complex universals (as emergent properties say) that do not figure as their constituents (Armstrong 1978b: 35, 1989a: 113, 1997: 27–28, 33, and, Tooley 1987: 123–29. If so, (CP) fails. Mellor 1995: 196–99, argues against the possibility of any complex universals.

[6] See Armstrong 1983: 88–92, 1997: 223–30, Tooley 1997: 67–91, and Mellor 1995: 208–9. Higher-order universals are posited for other purposes. See Armstrong 1978b: 134–141, Bigelow 1988: 38–100, Bigelow and Pargetter 1990: 38–92, and, Fales 1990:233–43.

entities, the universals particulars instantiate 1st-order entities, and so on). Counting principles, like (CP), can then be framed as restricted claims concerning only those states of affairs in which there are both particulars and universals to be counted (i.e. states of affairs formed from 0- and 1st-order entities). But appeal to a hierarchy of orders leaves it undetermined whether any counting principle is a priori. No a priori argument has been provided that demonstrates such a principle to be true even of lower-order states of affairs. More importantly, counting principles can only be so restricted if particulars and universals are already distinguished by the positions they occupy in a hierarchy of orders. What this shows is that the epistemic status of the particular–universal distinction turns ultimately upon the epistemic status of the claim that particulars and universals are arranged in a hierarchy of orders rather than, contra Armstrong, any claim concerning the patterns of instantiation into which those entities enter.

This conclusion leaves the epistemic status of the particular–universal distinction undetermined. It is a priori that particulars and universals are arranged in a hierarchy of orders if it a priori that (i) a relation exists to order particulars and universals in that way, and, (ii) any hierarchy ordered by such a relation contains entities of 0-order (the order particulars occupy). It is difficult to see how (i) and (ii) can be established a priori by a realist who holds that it is a posteriori just what entities exist. Armstrong himself questions whether (ii) is a priori. He declares the question to be 'very difficult' and discusses it no further (Armstrong 1997: 139). But until such questions are answered the supposition that the particular–universal distinction is a priori constitutes no more than an expression of metaphysical faith.

The failure of the arguments considered in favour of (PP), (PII) and (CP) suggest that it is an a posteriori matter just how particulars and universals figure in states of affairs. This conclusion may be resisted. All that has been shown is that some a priori arguments for the claim that particulars and universals enter into different patterns of instantiation are ineffective. It has not been shown that there could not be an a priori argument for such a claim. Consequently, the failure of the arguments in favour of (PP), (PII) and (CP) does not suggest that the instantial behaviour of particulars and universals is a posteriori. This objection assumes that there can only be reason to suppose a claim is a posteriori if it can be shown a priori that the claim does not admit of a priori proof. This assumption is too strong. Compare: we suppose that the existence of water is an a posteriori matter; no one has given an a priori proof that there can be no a priori proof that water exists; we do not therefore doubt that the existence of water is an a posteriori matter. In fact, our 'failure' to show a priori that there can be no a priori proof that particulars and universals instantiate differently is just

what should be expected if it really is a posteriori how particulars and universals figure in states of affairs.[7]

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