For *Analysis* (REVISED VERSION)

# THERE ARE NO CONJUNCTIVE UNIVERSALS

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Alex Oliver [4] rejects my argument in [3] against negative, disjunctive and conjunctive universals. First he says my claim that, for example, *W*=*P*&*Q* entails *Wa*=*Pa*&*Qa* 'is supposed to be grounded on a criterion for the identity of facts' (p. 4). It is not. No entity *F*, constituted in some way *R* by other entities *G* and *H*, can be changed without changing *G* or *H*: for if it could, it would take more than *G* and *H* to constitute it. Suppose for example that *F* is a hammer constituted by its head *G* being attached (*R*) to its handle *H*. *F* can obviously not be changed without changing *G* or *H*. And since it takes no 'criterion for the identity of hammers' to make *J*=*G* entail *R*(*J*,*H*)=*R*(*G*,*H*), it takes none to make *J*=*G* entail *F′*=*F*, where *F′* is the hammer constituted by *R*(*J*,*H*).

Similarly for the constituents of conjunctive, disjunctive and otherwise molecular facts. It is indeed a very moot point whether there are any such facts, except in the trivial sense given by the so-called equivalence principle, that '*p*' is true if and only if (it's a fact that) *p*. Certainly nothing beyond the atomic facts *Pa* and *Qa* is needed to provide substantial truth-makers for '*Pa*&*Qa*' and '*Pa*∨*Qa*'. But without such molecular facts as *Pa*&*Qa* and *Pa*∨*Qa*, there is nothing for conjunctive or disjunctive universals to be constituents of, and hence no reason at all to suppose they exist. Let us therefore grant, if only to give conjunctive universals a run for their money, that *Pa*&*Qa* does exist and has *P*&*Q* as a constituent.

Now let our entity *F* be the fact *Pa*&*Qa*, constituted by *P*&*Q* being instantiated (*R*) by the particular *a*. Again *F* can obviously not be changed without changing *P*&*Q* or *a*. And since it takes no 'criterion for the identity of facts' to make *W*=*P*&*Q* entail *R*(*W*,*a*)=*R*(*P*&*Q*,*a*), it takes none to make it entail *F′*=*F*, where *F′* is the fact constituted by *R*(*W*,*a*): i.e. to make *W*=*P*&*Q* entail *Wa*=*Pa*&*Qa*.

Oliver then turns to my assumption, which he labels '(C)', that, as he puts it, 'if facts *x* and *y* have different constituents, then *x* and *y* are distinct' (p. 5). He shows that (C) is inconsistent with at least two models of how particulars and universals constitute facts, which he calls (1) the *functional* and (2) the *abstraction* model.

(1) takes a fact's constituents to be the arguments of functions, and the functions themselves, which have that fact as value. This contradicts (C), since a fact can be one function of one set of arguments and another function of another set of arguments. Thus *Pa*&*Qa* is a function (*a*) of *P*, *Q* and the conjunction

function &, and also of *P*&*Q* (i.e. *W*). So if being a function, or the argument of a function, with a fact as value were all it took to be a constituent of that fact, then (C) would be false: *Pa*&*Qa*'s being constituted by *a*, *P*, *Q* and & would not prevent it also being constituted by *a* and *W*.

Similarly with (2), which takes the particular and universal constituents of a fact *F* to be, as Oliver puts it, 'collections or types of facts' including *F*. But since *P*, *Q* and *P*&*Q* all define collections or types of facts (namely those containing these properties), all of which include *Pa*&*Qa*, (2) makes *P*, *Q*, and *W* alike constituents of *Pa*&*Qa*.

Oliver's third model, which he calls (3) the *compositional* model, takes particulars and universals to be parts of facts; and whether this satisfies (C) depends, as he says, on how a fact is related to its parts. (C) will be satisfied if the relation is like that of a set to its members; but not if it is a mereological whole–part relation, nor if it is like the relation of a country to members of alternative sets of geographical parts of it. To satisfy (C), a fact's particulars and universals must be either its ultimate parts or parts of specific types, like the atomic (as opposed to sub-atomic) parts of a molecule.

I accept Oliver's clear and comprehensive account of these alternatives; the question is why only the last version of the last one could be right. Part of the answer is easy. (1) is just silly, because it makes everything a constituent of every fact: since everything is a function, or an argument of a function, with that fact as value. Thus if *P*&*Q*'s being a function from *a* to *Pa*&*Qa* makes *a* and *P*&*Q* constituents of that fact, the identity function will make *Pa*&*Qa* a constituent of itself, the function from me to *Pa*&*Qa* will make me and that function constituents of it; and so on. (1) is such an absurdly weak account of what makes something a constituent of a fact that it gives no reason whatever to accept conjunctive universals as constituents of anything.

(2) is little better, since all sorts of arbitrary types and collections of facts include *Pa*&*Qa*. For example, *Pa*&*Qa* is a member of the class of all facts: does that make this class a constituent of *Pa*&*Qa*? It is also of a type referred to in *Analysis*: does that make being referred to in *Analysis* a constituent of *Pa*&*Qa*? Obviously not, in both cases. Why then should *Pa*&*Qa*'s being of the type defined by *P*&*Q* make *P*&*Q* a constituent of *Pa*&*Qa*?

Some of Oliver's readings of his compositional model (3) are equally irrelevant. A fact like *Pa* can obviously be neither the set nor the mereological sum of its particular part *a* and its universal part *P*. For the existence of *a* and *P* entails the existence of that set and that sum: but, as Oliver himself notes (p. 7), it does not entail the existence of the fact *Pa*, since *a* may not be *P*. So (C)'s being satisfied by sets and their members but not by mereological wholes and their parts tells us nothing either way about whether (C) is satisfied by facts and their particular and universal constituents.

Oliver grants that facts and their particular and universal constituents may satisfy (C) if those constituents are parts of facts which are ultimate or of specific types (pp. 10–11). Now I doubt that facts have parts in any sense of 'part' independent enough to tell us anything about constituents. But if they do, then particulars and universals must certainly be parts of specific types. For if facts do have parts, molecular facts clearly seem to have parts that are neither particulars nor universals. Why, for example are the facts *Pa* and *Qa* and the conjunction function & not parts of *Pa*&*Qa* in whatever sense *a*, *P*, *Q* and *P*&*Q* are? And if they are parts, then even if we allow only ultimate parts to be constituents, to rule out *Pa* and *Qa*, that still leaves us with &, which, if a part of *Pa*&*Qa* at all, is clearly as ultimate a part as *a*, *P* and *Q*.

In short, just calling particulars and universals 'parts' of facts will not distinguish them even from functions like conjunction, negation and disjunction, let alone from each other. Nor will it tell us whether there are conjunctive universals. For the answer to that question will now depend on whether the specifically universal type of parts of facts includes non-ultimate parts. If it does, there will be conjunctive universals; if not, not. So to say that there are such universals, just because parts are generally taken to include non-ultimate parts, would simply beg the question. Moreover this answer to it will now give advocates of conjunctive universals far more than they want. For it will also give them disjunctive and negative universals, like *P*∨*Q* in *Pa*∨*Qa* and ~*P* in ~*Pc*. Worse still, unless the universal type of parts of facts differs in this respect from the particular type, it will give them conjunctive, disjunctive and negative particulars, like *a*&*b* in *Pa*&*Pb*, *a*∨*b* in *Pa*∨*Pb* and ~*c* in ~*Pc*. But those who, like Armstrong, believe in conjunctive universals no more believe in disjunctive or negative universals than they believe in disjunctive or negative particulars ([1], ch. 14).

I conclude that none of Oliver's models of how particulars and universals constitute facts will tell us whether, and if so why, there are conjunctive universals. To answer that question we must turn from his models to explicit statements of (i) what types of constituents of facts particulars and universals are and (ii) which constituents of these types the world actually contains. And fortunately the statements we need are, if not very original or enlightening, at least fairly obvious and uncontentious.

(i) Particulars and universals are whatever types of entity first-order and second-order logic respectively quantify over. This difference between particulars and universals is all we need: whether it reflects any intrinsic difference between them is immaterial. (ii) Actual particulars are those over which our first-order quantifiers must range to enable us to state every non-modal fact: call this very orthodox thesis (P). (See Quine [5]: I exclude modal facts, if any, to avoid making merely possible particulars actual.) And actual universals, as I have argued in [2] and [3], are those that figure in actual laws of nature, i.e. those over which a Ramsey sentence Σ stating all such laws would have to quantify: call this thesis (U).

(U) is the thesis that matters here. Since Oliver does not challenge my arguments for it, I need not repeat them here, except to say that they no more beg the question against conjunctive or other complex universals than (P) begs it against complex particulars. For the arguments for (P) and (U) assume neither the non-existence of such complex entities nor the Ramsey argument against them that Oliver attacks. We could, consistently with those arguments, extend (U) by letting complexes of actual universals also be actual universals, just as we could extend (P) by letting complexes of actual particulars be actual particulars.

But I see no reason to extend (P) or (U) in this way, and good reason not to, quite apart from Ramsey's argument. For we cannot just extend (P) or (U), since complexes of actual particulars can hardly be actual particulars without being particulars, and similarly for universals. So if we extend (P) or (U) we must also extend my orthodox statements in (i) by extending our concept of particulars or universals in general to include complexes of whatever first-order and/or second order logic quantifies over.

But why should we do this? And if we do, why should we admit conjunctive universals and/or particulars but not disjunctive ones? Oliver does not say. On the contrary, he accepts my objection to the only case I know of for accepting conjunctive but not disjunctive universals: namely that while '*a* and *b* being *P* and *Q* does entail that *a* and *b* share a property', which *a* and *b* being *P* or *Q* does not, it does so by making them share the two properties *P* and *Q*, which 'hardly shows that they also share a third property *P*&*Q*' ([3], p. 179).

The only reason for accepting conjunctive universals that Oliver defends applies just as well to disjunctive ones. This reason is that conjunctive universals enable us 'to accommodate the possibility that the world is infinitely complex.' For

> (CU) 'Given a conjunctive universal each conjunct might itself be a conjunctive universal, and each of these conjunctive universals might themselves have conjuncts which are conjunctive universals and so on' (p. 13).

But the possibility of infinite complexity can be accommodated equally well by disjunctive universals. For

> (DU) 'Given a disjunctive universal each disjunct might itself be a disjunctive universal, and each of these disjunctive universals might themselves have disjuncts which are disjunctive universals and so on.'

(DU) seems to me no less plausible than (CU). So if we need conjunctive universals to accommodate the possibility expressed by (CU), why do we not need disjunctive universals to accommodate the possibility expressed by (DU)? Why indeed do we not need conjunctive particulars to accommodate the possibility expressed by

> (CP) 'Given a conjunctive particular each conjunct might itself be a conjunctive particular, and each of these conjunctive particulars might themselves have conjuncts which are conjunctive particulars and so on';

and similarly for disjunctive particulars (DP)?

Now one cannot without begging the present question accept (CU) and reject (DU), (CP) and (DP) on the grounds that there are conjunctive universals but no disjunctive universals or conjunctive or disjunctive particulars. And I see no other reason to accept the one and reject the others. Yet those who accept conjunctive universals (and maybe conjunctive particulars) do reject disjunctive universals and particulars. So the need to accommodate the possibility of infinite complexity cannot really be what justifies their accepting only conjunctive universals.

Indeed it cannot justify accepting *any* complex universals or particulars: since, as Oliver admits (p. 14), the world could be infinitely complex without containing any such entities. The reason is, as I remarked in [3], that 'there need be no limit to the number or complexity of laws of nature, nor hence to the number of properties over which Σ has to quantify' (pp. 179–80). This, and the infinity of ways of distributing these properties among the infinity of possible particulars, certainly accommodates the possibility of infinite complexity: all it fails to accommodate is (CU)'s endlessly conjunctive universals. But if (CU) need not be true for nature to be infinitely complex, why is the fact (if it is a fact) that nature could be infinitely complex any evidence for (CU)'s truth?

Oliver is therefore wrong to credit Armstrong with an 'argument from infinite complexity to conjunctive universals'. Armstrong merely asserts, without argument, that 'it is logically and epistemically possible that all properties are conjunctive properties' ([1], p. 32). But as Oliver has pointed out to me, this claim – call it (ACU) – is even stronger than (CU), which says only that universals which are conjunctive could be endlessly so. And if it blatantly begs the question to infer from (CU) that *some* universals could be conjunctive, to infer this from the premise (ACU), that they could *all* be conjunctive, begs it more blatantly still. For I see no independent reason to accept even (CU), let alone (ACU). It is not for example enough to say that (CU) or (ACU) is self-evidently true. For (CU) is certainly no more self-evident than (DU), (CP) and (DP); nor is (ACU) more self-evident than its corrresponding disjunctive and particular counterparts (ADU), (ACP) and (ADP). Yet no one either believes (DU), (CP) or (DP), or thinks it 'logically and epistemically possible that all properties are disjunctive and all particulars conjunctive and/or disjunctive'.

Nor will it do to say that (CU) and (ACU) are not obviously false. Nor they are, but then nor is 'There is a greatest prime number': so if we can, unobviously, show that to be false, why not (CU) and (ACU)? Oliver says (pp. 14–15) that I beg the question against (ACU) as much as I say Armstrong begs the question in its favour. But I do not, any more than the classic proof that there is no greatest prime number begs that question. For I, unlike my opponents, have an independent account, (U), of what universals there actually are – those Σ must quantify over – which rules out (ACU) and (CU).

Moreover it would still rule them out even if (U) were extended to let conjunctions of universals be universals. The reason is that the universals Σ must quantify over cannot be conjunctive. For suppose Σ does quantify over the conjunctive universal *W*=*P*&*Q*. Then *ex hypothesi P* and *Q* also figure independently in laws, so Σ must also quantify over them (or if they too are conjunctive, then over their conjuncts, or …). But then Σ need not quantify over *W* after all: for any conjunction of laws involving *W*, i.e. involving *P*&*Q*, can be stated by a Ramsey sentence quantifying only over *P* and *Q*. So the universals Σ must quantify over must be simple.

So extending (U) would not save (ACU): it would not let all universals be conjunctive. Nor would it save (CU): for since all conjunctive universals would still boil down to conjunctions of the simple ones Σ must quantify over, none of them could be endlessly conjunctive. And similarly, as obvious analogues of the above argument show, for the disjunctive and particular analogues of (ACU) and (CU).

In short, we can accommodate neither Oliver's (CU) and its counterparts (DU), (CP) and (DP), nor Armstrong's (ACU) and its counterparts (ADU), (ACP) and (ADP), by extending (P) or (U). So to defeat this objection to any of those apparent possibilities, my opponents must produce and defend a radically different alternative to (P) and (U) of what particulars and universals there actually are. Specifically, to accommodate (CU) or (ACU), they must allow actual universals not to figure in any laws. But all the views of universals I know of which allow this – e.g. those taking them to be sets of particulars, or the meanings of predicates – also obviously rule out (CU) and (ACU) on other grounds.

I conclude then that (ACU), (CU) and all their disjunctive and particular counterparts are false and thus supply no sound argument, question-begging or otherwise, for the possible existence of conjunctive or disjunctive universals or particulars. In particular therefore they give no reason to extend (P) and (U) to allow those possibilities. And then, although the unextended (P) and (U) do not entail the Ramsey argument against conjunctive universals, they do support it. For if the conjunctive fact *Pa*&*Qa* actually exists, and if, as Ramsey argues, it can have only one set of constituents, then (P) and (U) show which they must be, namely *a*, *P*, *Q* and &: since the universal member of the rival set, *W*=*P*&*Q*, does not actually exist.[1]

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## References


[1] D. M. Armstrong, *A Theory of Universals* (Cambridge: Cambridge University Press, 1978).

[2] D. H. Mellor, 'Laws, chances and properties', *Matters of Metaphysics* (Cambridge: Cambridge University Press, 1991) 154–69.

[3] D. H. Mellor, 'Properties and predicates', *Matters of Metaphysics* (Cambridge: Cambridge University Press, 1991) 170–82.

[4] A. Oliver, 'Could there be conjunctive universals?', *Analysis* 52 (1992) ??

[5] W. v. O. Quine, 'On what there is', *From a Logical Point of View* (Cambridge, Mass.: Harvard University Press, 1953) 1–19.


[1]The above owes much to Alex Oliver's comments on these matters in general, and in particular on an earlier draft of this reply.