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## Internal Properties and Property Realism

Realism about properties, standardly, is contrasted with nominalism. According to nominalism, only particulars exist. According to realism, both particulars and universals exist, and properties (and relations) are universals – entities which can be wholly instantiated by more than one particular at a time. Most realists are *sparse* realists. They deny that all predicates pick out a corresponding property and that all properties are picked out by a corresponding predicate. For even if physicalism is false, and even if universals are part of a non-spatiotemporal realm rather than constituents of the spatiotemporal world, there seems little reason to think we can have knowledge of what universals there are simply from a consideration of language.

Perhaps the most popular principled way of distinguishing between mere predicates and properties, though by no means the only one, is *scientific* realism: only those predicates our scientific theories will make reference to at the hypothetical end of enquiry pick out properties. Some realists, such as Armstrong, accept this together with the claim that certain conjunctive predicates – those with conjuncts which pick out properties – also pick out properties.

There is a tension, however, between sparse realism and its proponents. It is this: sparse realists just can't help talking in a way that appears to involve existential commitment to properties which it would seem a sparse realism would want to deny.

Take a molecule of H<sub>2</sub>O. It is natural for the realist, in reply to certain questions, to say that it has the following properties: *having three parts, having two parts which are hydrogen atoms, having a part which is an oxygen atom, having a part which has a mass m, having two parts which are hydrogen atoms and one part an oxygen atom*, and so on. Suppose, for example, that the realist endorses scientific essentialism, and so take laws of nature to derive from the essential properties of natural kinds. What are the essential properties of H<sub>2</sub>O in virtue of which members of that kind

behave the way they do? A molecule of H<sub>2</sub>O only behaves the way it does because, amongst other things, it has two parts which are hydrogen atoms and one part which is an oxygen atom. So it seems that the essentialist, responding to this question, should take *having two parts which are hydrogen atoms and one part an oxygen atom* to be an essential property of H<sub>2</sub>O – i.e. a property all members of that kind must have.

Realists rarely state their views with enough care to avoid apparent commitment to such properties. But ‘mature science’ is unlikely to admit the existence of the aforementioned properties alongside the basic properties of the *parts* that make up a H<sub>2</sub>O molecule. Nor are any of the aforementioned properties conjunctive and composed of those properties mature science would endorse; there are no conjuncts in the above examples that are likely to form part of science’s basic inventory. And nor does it seem that any reasonable sparse realism – one motivated by ontological economy – would endorse the existence of such properties.

What, then, is the sparse realist to say?

Let us define ‘questionable properties’ as those putative properties – such as the aforementioned – that a consideration of ontological economy seems to rule against, and yet which (a) are naturally talked about as though they are properties, and which (b) are instantiated in virtue of the nature of their bearer.

The standard realist response to the tension I have highlighted is to construe talk involving questionable properties as ‘loose’ – a shorthand way of pointing out certain *truths* about particular objects. To say, for example, that the H<sub>2</sub>O molecule has the ‘property’ of having three atoms is to say no more than that the molecule has three atoms. Consequently, there is no ontological commitment to questionable properties.

In this paper I set out an alternative realist response which allows that *there are* such questionable properties, but which does so without ontological cost. Realism, I shall argue, can accept many properties which are not universals and which have no bearing on its ontological commitments. My strategy has its roots in recent debate concerning the idea that what supervenes is ‘no ontological addition’, but the route I take from this idea to the acceptance of questionable properties is, insofar as I am aware, previously uncharted.

To endorse the position I have in mind, one needs to do three things:

## Step 1: Endorse the Ontological Free Lunch

Armstrong has argued that internal relations are not “an addition to the world’s furniture”, and that only external relations are “the ontologically important relations” (1997; 87). This follows from what he calls the Ontological Free Lunch, which amounts to the following claim:

(OFL)      Whatever supervenes is no ontological addition.

Since the existence of an internal relation supervenes on the existence of its relata, internal relations are not an ontological addition. Other philosophers (e.g. Campbell (1990), Heil (1999, 2003)) have made essentially the same claim.

To begin to see what sort of metaphysics can underpin the Free Lunch, let us look more closely at the internal / external relation distinction. I shall help myself to Armstrong’s distinction between a thin and thick particular: a thin particular being an object shorn of the universals it instantiates, a thick particular being an object with the universals it instantiates. Armed with this, we can define what it takes for a relation to be either internal or external. For all  $x$  and all  $y$  :

A relation,  $R$ , of  $x$  and  $y$  is **internal** iff  $x$  being  $R$  to  $y$  supervenes on  $x$  and  $y$ , which are either thin or thick particulars.<sup>1</sup>

An external relation is usually taken simply as a relation which isn’t internal, but let me flesh this out a little for the purposes at hand:

A relation,  $R$ , of  $x$  and  $y$  is **external** iff  $x$  being  $R$  to  $y$  does not supervene on  $x$  and  $y$ , which are thin or thick particulars.

The supervenience relation might be defined, roughly, as non-causal determination. However, this in itself doesn’t allow us to see how what supervenes is no ontological addition. Suppose  $F$  supervenes on  $G$ . On the face of it, this seems to amount to the existence of *entity*  $G$  determining the existence of *entity*  $F$ . But if it does, and  $F$  is an entity separate from  $G$ , then surely it is an ontological addition: we have an extra entity aside from  $G$ . True, we can say (using the creation metaphor) that God only has to create  $G$  in order for  $F$  to exist. But that doesn’t make  $F$  ‘no ontological addition’. It just means that if you have  $G$ , you have  $F$ . And this isn’t the ontological

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<sup>1</sup> I will ignore here the possibility of relational truths made true by just one of the relata.

equivalent of ‘buy one, get one free’; it’s the ontological equivalent of ‘buy one, buy one more at the same price’.

What, then, do Armstrong and others have in mind? I suggest that the only way to ensure that what supervenes is no ontological addition is by construing supervenience claims as disguised truthmaker claims.

Internal relations supervene. Take, as an example, the fact that shoe a is dirtier than shoe b. This supervenes on the existence of a and b, making *is dirtier than* an internal relation – one which can thereby itself be said to supervene on a and b. If we take the supervenience of the shoe fact to amount to the claim that the existence of a and b make true the claim ‘a is dirtier than b’, we can begin to see how there might be no ontological commitment to *is dirtier than*. How would this go? Well, since ‘a is dirtier than b’ is true, it is a truth (or fact, if you like) that a is dirtier than b. This truth or fact is not a further entity aside from a and b; there is a truth or fact here simply because there is a possible statement ‘a is dirtier than b’ which is true. From this we can say that just as a and b ground this truth, which is not an entity, together a and b also – given what it takes for a relation to be internal – ground the truth that there is an internal relation of *is dirtier than* between a and b. This truth is no entity either, and neither is *is dirtier than*. The only entities here are a and b. Therefore, endorsing the supervenient *is dirtier than* relation does not commit one to an ontological addition.

Contrast internal relations with external relations. Spatial relations, quite plausibly, are external. Suppose the ball is exactly one metre away from the net. This fact doesn’t supervene on the ball and the net, because the ball and the net could have possessed the same intrinsic properties and have been some other distance apart. Putting the matter in terms of truthmakers, we have the following: ‘the ball is one metre from the net’ is not made true by the ball and the net. But then what does make the distance claim true? Answer: the truthmaker here will need to involve *is one metre from* as a constituent entity of some state of affairs that is the ball being a metre away from the net.<sup>2</sup>

I take this to be the only metaphysical story regarding supervenience available to those realists seeking to endorse (OFL). But note how there is no reason why the realist *about relations* should be refused this free lunch.

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<sup>2</sup> That is, given relationism about space. Given absolutism, the relation of *is one metre from* would be internal, and in the example given it would supervene on two relational states of affairs: the ball’s occupation of space-time point s and the net’s occupation of space-time point s+1m. The relation of spatial occupation would be external.

Accepting that there are internal relations, and that these are not entities over and above their relata, does not make one a nominalist about such relations, i.e. someone who tries to construe them as reducible to or identical to particulars.

## Step 2: Extend the Internal / External Distinction to Properties

Given what I have said about realism, relations and (OFL), there seems a parallel distinction to be made by free-lunch-embracing realists about *properties*.<sup>3</sup>

Here are definitions analogous to those given for internal and external relations:

A property, P, of object x is **internal** iff x being P supervenes on x, which is either a thin or thick particular.<sup>4</sup>

A property, P, of object x is **external** iff x being P does not supervene on x, which is either a thin or thick particular.<sup>5</sup>

We have seen how the realist can avoid ontological commitment to supervening relations. Let us now consider how commitment to supervening properties can be avoided.

Internal properties supervene, and questionable properties are internal properties. The H<sub>2</sub>O molecule, a, has three atoms. This fact supervenes on the molecule taken as a thick particular. But we can say that all this supervenience claim amounts to is that ‘the H<sub>2</sub>O molecule, a, has three atoms’ is made true by thick a. Because of what it is to be an internal

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<sup>3</sup> As far as I am aware, no-one has extended the internal and external distinction regarding relations in the way I am suggesting. The term ‘internal property’, of course, isn’t new. G.E. Moore used it (1919; 50) for what Kit Fine (1993) calls an essential property, whereby P is an essential property of object a iff  $x=a$  entails Px. But the notion of an essential property is not equivalent to my definition of an internal property, as I point out in what follows.

<sup>4</sup> One qualification: a necessary condition for P to be an internal property of thick x is that P must not be an external property of thin x. Without this, all external properties of thin x would count as internal properties of thick x.

<sup>5</sup> These definitions do not tell us what counts as P. Realists need to decide this on the basis of the sparse realism they endorse and the properties they take to be supervenient. If they accept (OFL), I claim there will be a suitable P for each true statement ‘x is P’ made true by x.

property, the thick molecule also makes true ‘*having three atoms* is an internal property of molecule a’, and so we can say that *having three atoms* supervenes on the molecule. But *having three atoms* is not an entity. The molecule is the only entity here. Therefore, endorsing the supervenient *having three atoms* property does not commit one to an ontological addition.

External properties, on the other hand, do not supervene. According to scientific realism and other plausible sparse realisms, the fundamental properties of the most basic entities of science – such as having mass  $m$ , having charge  $c$ , having spin up – are fairly safe candidates for external properties. Pick an electron. It has charge  $c$ , but this fact doesn’t supervene on the electron as thin particular, since the thin particular could have had the properties of a proton. What, then, makes it true that the particular has charge  $c$ ? The only candidate for the realist is a state-of-affairs entity involving the thin particular and *having charge  $c$* . The property of *having charge  $c$* , in other words, is a constituent entity of the state of affairs: a *universal*.<sup>6</sup>

The definitions I have given do not tell us whether conjunctive properties are internal or external. It is true that a *being  $P$*  and a *being  $Q$*  is enough for a to be  $P\&Q$ , but whether we treat *being  $P\&Q$*  as supervening on  $P$  and  $Q$ , rather than as identical to  $P$  and  $Q$ , is an open question. The same for structural properties, such as *being  $H_2O$* .

My account of the metaphysical underpinnings of supervenience relies on the notion of truthmaking. I have no positive account to propose here of what truthmaking is, or what sorts of entities can be truthmakers. But I will say that I do not take the relation between existence of truthmaker and truth to be one of entailment, since that would make the existence of any object the truthmaker for any necessary truth; and while my being human may be a necessary truth, it is certainly not made true by the existence of the computer keyboard in front of me now. Taking the truthmaking relation to be entailment would also collapse the distinction between essential and internal properties, yet I want to admit the possibility of essential properties which are not internal properties: i.e. admit that some  $x$  may

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<sup>6</sup> If one takes universals to be irreducibly dispositional entities – i.e. to make true various counterfactuals about how objects bearing them would behave in certain circumstances, and given the instantiation of certain other universals – then one can also take certain dispositional properties (e.g. *being soluble*) and ‘law properties’ (e.g. *necessitating  $G$ , given  $H$* ) to be internal.

have an *external* property P in all x-containing possible worlds.<sup>7</sup> Roughly, then, and perhaps not very perspicuously, I characterise the truthmaker for any statement of the form ‘x is P’ as that *in virtue of which, because of its intrinsic nature*, the statement is true.

### Step 3: Defend Internal Properties

Even accepting the metaphysical evaluation I have offered of (OFL), realism plus (OFL) does not entail an acceptance of internal *properties*. One might only endorse an internal and external distinction between *predicates*, and take such talk as ‘a has property P’, where P is internal, to mean simply that ‘is P’ is truly predicated of a, and that ‘a is P’ is made true by a.

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<sup>7</sup> The notion of an internal property is also very similar to at least two other notions in the literature.

First, Molnar’s 2003 notion of the *derivative* property, whereby P is a derivative property of object x iff it is *ontologically dependent* on the parts of x or on other properties of x. (A basic property is one which is not dependent in this way.) The difference between this and the internal property definition is only that ontological dependence is specifically taken to be a relation between entities. Molnar does not construe the relation in the way I am construing the supervenience relation: i.e. as a relation parasitic on the relation between truth and truthmaker.

Second, Armstrong’s 1997 notion of a *third class* property, whereby P is a third class property of a particular x iff P is not a universal and P is such that, when truly predicated of x, the resultant truth is a necessary one. Armstrong’s example is *being identical with a*, a property which particular a has necessarily. Let us allow that x can be either a thin or thick particular. That there is a difference between the third class and the internal property can be brought out with the statement ‘x is longer than y’, where x and y are thick particulars, including as components the state of affairs of x being 6ft long and y being 3ft long. This statement would seem to be necessarily true, in the sense that in any world containing x and y the statement is true (just as in any world containing a, a is identical with itself). Therefore *being longer than y* is a third class property. But the existence of x does not ground the truth of the length statement – it is the existence of x and y together which do this – and so it is not an internal property. If one cashes out truthmaking in terms of classical entailment, then the existence of x *does* entail that (and so grounds the truth that) x is longer than y, since the existence of anything entails a necessary truth. But as Armstrong endorses an account of truthmaking which is not entailment (2003), as do I, *being longer than y*, in this example, is third class but not internal.

What's more, realism – as I indicated from the outset – is standardly defined as follows:

(REALISM1) All properties are universals.

By endorsing only internal and external predicates, realism's standard definition remains intact. Realism plus internal properties, on the other hand, necessitates an amendment:

(REALISM 2) All *external* properties are universals.

Despite this, the case for accepting internal predicates and not properties does not seem particularly strong. One reason which might be offered is that by denying there are internal properties, realism can hold onto (REALISM 1). But this will not do. The claim that all external properties are universals is still recognisably realist, and to endorse it rather than (REALISM 1) is neither to accrue any theoretical disadvantage nor to diminish one's realist credentials.

A second possible reason is ontological parsimony: properties, unlike predicates, swell one's ontological commitments, and so should be minimised. But this is to forget that internal properties are not ontological additions if one endorses (OFL). One might go further, and claim that anyone accepting internal properties will be committed to disjunctive properties and negative properties; but again, since these are not ontological additions either, it isn't clear why they should be problematic. And besides, wholesale acceptance of properties of these kinds is not as obviously forced upon the realist as it might appear. Disjunctive properties could be ruled out by restricting the truths made true by truthmakers to the minimum; a being P makes true 'a is P or Q', but minimally it only makes true 'a is P'. And while it seems those negative properties incompatible with any of a's universals must be accepted as properties of a, this is not the same as saying that for each negative truth about a, there is a negative property of a. Perhaps it is the world as a whole which grounds some of these negative facts.

The case for internal properties is built on at least two considerations. The first of these is that questionable properties end up being accommodated rather than explained away. We talk about them as properties – they are properties. They're not part of some misleading way of talking about truths. This accommodation is an important theoretical advantage which, all else being equal, gives internal properties the edge over merely internal predicates.

The second consideration in favour of internal properties is this. The property definitions I have given are analogous to a perfectly respectable pair of relation definitions. (OFL)-endorsing realists seem happy to talk about internal relations without taking this, even on reflection, to be loose talk; but the only difference between internal relations and internal properties is that the latter are monadic, rather than polyadic, so if it is reasonable to deny that internal relation talk is loose, it is reasonable to deny that internal property talk is loose as well.

I claim that it is indeed reasonable to deny that internal relation talk is loose. Suppose I say that one of my eyes has the internal relation of *is more bloodshot than* to the other, and metaphysical enquiry then informs me that there is no entity ‘out there’ as a constituent of the world which is the *is more bloodshot than* relation. Does that show there is no internal relation, and that I am really talking about something other than that relation? I think not. We do not have an entity corresponding to the relational term ‘is more bloodshot than’. But that does not show that there is no internal relation of *is more bloodshot than*, since what it takes for there to be that internal relation, according to the story I have told, is for ‘eye a is more bloodshot than eye b’ to be true and made true by a and b. We can, in short, take the statement ‘eye a bears the relation of *is more bloodshot than* to eye b’ to be (a) literally true, and made true by a and b (since a and b make true ‘eye a is more bloodshot than eye b’), rather than (b) simply a loose way of stating the fact that eye a is more bloodshot than eye b.

Do internal relations and internal properties ‘exist’? Are they ‘real’? Well, they are neither universals nor tropes, according to the (OFL)-friendly metaphysics I am proposing. They are not *entities* of any shape or form. If by definition that rules them out from existing, and being real, then so be it. But I have claimed that we can say truly, and non-loosely, that *there are* internal relations and internal properties, and many will think that existence follows from this. And internal relations and internal properties figure in various objective truths concerning the world around us; one might think that the extent of the real is determined by all objective facts, not just all states of affairs with entities as their constituents.

## Conclusion

I have shown how realism, by endorsing the definitions I have given of what it takes for a property to be internal or external, can take some properties to be entities, and some properties not to be entities. Given (OFL), internal properties are no ontological addition. Such properties are perfectly consistent with realism. True, it turns out that only some properties – external ones – are universals, i.e. *entities* instantiated by objects. But this only means that realism needs to be characterised by (REALISM 2) instead of (REALISM 1).

The realist is now free to construe questionable properties as these ontologically innocuous internal properties. Sparse realism, motivated as it is by ontological economy, is concerned only with limiting the number of external properties – property universals – that it posits. As a result, the sparse realist can talk truly, and literally, about any number of internal properties, and do so without ontological cost.

## ABSTRACT

The sparse realist often appears to endorse properties that it would seem a principled sparse realism would want to deny. One way of dealing with such property-talk is to take it as ‘loose’, possessing only the appearance of existential commitment. Another way is to deny that such properties are in fact ruled out by sparse realism. I look at a way of pursuing this second course of action which involves both extending the internal / external distinction amongst relations to properties and amending the standard definition of property realism.

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