# Properties and Predicates

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## Introduction

In this talk I want to discuss what, if anything, universals—that is, properties and relations, like being red or being longer than—contribute to the meanings of predicates, like the words ‘red’ and ‘longer’. I shall take it for granted that universals exist, just as the particular entities that have them exist. I shall take it moreover that universals are not to be understood semantically: that is, as the meanings, references or extensions of predicates. This doesn’t of course prevent there being obvious connections between universals and predicates. For example, to every property there obviously corresponds a possible predicate applying to all and only particulars with that property. But it doesn’t follow from this, and is obviously not true, that to every actual predicate there corresponds a single property or relation. So the questions remain: how do universals relate in general to our predicates, and how in particular do they relate to what they mean?

In tackling these questions I shall make some assumptions which I shall defend only briefly if at all. Some are uncontroversial, some merely terminological. Others are more serious, but I shall still not argue them at length because, although I do believe them, my main interest here is in what follows from them.

First of all, although to save time I shall refer only to properties, I shall take it for granted that what I say applies to relations as well. On the other hand, I shall not assume that it applies to all properties, and specifically not to the apparently necessary properties of abstract particulars like numbers and sets—such as the oddness of the number 3. I am interested here only in contingent properties of so-called ‘concrete’ particulars: that is, roughly, particulars which have causes and/or effects and are more or less localised in space and time. ‘Concrete’, however, is a bad description, since the particulars I’m concerned with may include events (such as explosions) and processes (such as long walks) as well as so-called continuants (that is, ordinary things such as planets and people). Whether there really are all these kinds of particulars is of course contentious, but that doesn’t matter here. What matters here are contingent properties, not how many or what kinds of particulars have those properties.

Next, I take existence, and the having of properties, to be tenseless but not modal. In other words, I restrict them to the actual world, but not to the present time as opposed to the past or future. This assumption is also contentious, and it does affect some of my conclusions, but only in quite obvious and uninteresting ways which those who disagree with it can work out for themselves. In what follows, I shall take it for granted that the class of real people does not, for example, contain the merely possible Danish Prince Hamlet, but does contain all the dead ancestors and all the as-yet-unconceived descendants (if any) of everyone here present.

And as for all these real human beings, so for the property (if any) of being human which they all share. As a realist about universals, I take at least the actual properties of actual past, present and future particulars to exist, and to do so whether or not they ever have been or ever will be conceived by anyone. That is, I reject both nominalism and conceptualism about universals, although again I shall not discuss the reasons for doing so, nor for adopting any specific version of realism about universals. What I am going to discuss is what properties there actually are—an open question for realists, just as what particulars there are is an open question for nominalists—and what if anything those properties contribute to our predicates’ meanings.

## Properties

Let me start by elaborating on my rejection of the obvious answer to these questions: namely, that properties just are, or are given by, the meanings of our predicates. One reason for denying this is of course that, if they were, they could not *give* our predicates their meanings, any more than particulars could give the meanings of our names or other singular terms if that was all *they* were. But of course they’re not. No one thinks the planet Mars just is, or is part of or defined by, the meaning of the word ‘Mars’ that we use to refer to it. We may indeed give a referential account of that word’s meaning, that is, one which takes the planet Mars to be part or all of what the word ‘Mars’ means. But what makes this a serious thesis about the meaning of that word is precisely that it takes for granted the planet’s independent existence and identity: we are using the planet Mars to give the meaning of the word ‘Mars’, not the other way round.

Similarly with the word ‘red’. A referential theory of its meaning might take the property of being red to be part or all of what the word ‘red’ means. But this again will be a serious thesis about the meaning of that word only if it takes for granted the property’s independent existence and identity: that is, if it uses the property to give the meaning of the predicate rather than the other way round.

Now we may of course reject these referential theories. We may deny that Mars itself is any part of what our word ‘Mars’ means, perhaps because we think its meaning is given by a definite description—‘the red planet’. But that won’t make us deny Mars’s existence, or query its identity. There’s more to Mars than its semantic rôle, and we have more than merely semantic reasons to believe in it. Indeed that’s an understatement. The planet Mars does not depend on its semantic rôle at all either for its identity or for its existence: which is why a referential account of the meaning of the word ‘Mars’, whatever else may be wrong with it, is neither trivial nor viciously circular.

Similarly, I maintain, for the property, if any, of being red. But not everyone will agree. Some philosophers think that properties, unlike particulars, do depend on their semantic rôle: that they are nothing if not all or part of what some predicate means. Unless the meaning of the predicate ‘red’ is, includes or entails a corresponding property, then no such property exists. And if it does exist, its identity is given by its rôle in the meaning of the predicate, not the other way round.

I disagree. I think that in this respect properties are just like planets. We have good non-semantic reasons for believing in them, and there is more to them than their semantic rôles. Indeed I think that that is another understatement. A universal’s existence, like that of Mars, does not depend on its having any semantic rôle; and its identity does not depend on what that rôle is. Which is why referential accounts of the meanings of predicates, whatever else may be wrong with them, are also neither trivial nor viciously circular.

But what then are the non-semantic reasons for believing in contingent universals, and what, if not the meanings of predicates, fixes their identity? I take the main reasons for believing in contingent universals to be their rôles in causation and in laws of nature; and those laws are what I take to give those universals their identity.

One might think that causation involves contingent universals because it is one: namely, as Davidson and others maintain, a relation between particular events, as in ‘The explosion *caused* the fire’. I don’t think that, because I think causation in these cases primarily links facts, not particulars. So I would rather report it by saying that there was a fire *because* there was an explosion, which represents the causation not by a predicate (‘caused’) but by a connective (‘because’). This of course is yet another contentious claim, but again it’s not one I need to defend now: since even if causation isn’t a universal, it will still need universals. For just as Davidson thinks causation only links particulars with properties that make them instantiate laws of nature, so I think it only links facts with just such properties as constituents. And if so, then causation will need universals anyway, and we needn’t argue about whether it itself is one.

But is this so, and if so, why? Why must causes and effects have, or contain, properties that figure in laws? I think the reason is that singular causation entails physical probabilities, or chances. Suppose for example the causation in this case is deterministic, so that in the circumstances an explosion is both sufficient and necessary for a fire. This means that in the circumstances the chance of a fire occurring is 1 with an explosion and 0 without it. And this, I maintain, entails (i) that, in sufficiently similar circumstances, anything sufficiently like the actual explosion would always produce something like the actual fire, and (ii) that nothing else would ever do so. Now this I take to be an existential proposition, entailing that these sufficient similarities exist: in other words, that there are properties C, F and G which the actual circumstances, explosion and fire respectively have, such that it’s a law of nature that in C-circumstances, all and only F-events are (or are followed by) G-events.

That, briefly, is why I think causation always instantiates laws. Again the argument is contentious, but again I needn’t defend it. For all I need is its conclusion, which is much less contentious—and even that contention I shall now try to disarm by disowning some contentious claims about causation and laws, claims which I don’t accept and to which nothing in what follows will commit me.

First, I am not committed to physicalism. Nothing I have to say about causation and laws, or about the particulars and properties involved in them, requires them to be physical. Nor does it require them not to be. Nothing I say will entail either physicalism or its negation.

Next, I am not committed to causal determinism. Causation does not entail deterministic laws, because its connotations don’t require causes to be either sufficient or necessary for their effects. I think causes must indeed raise their effects’ chances, but they needn’t raise them to 1, nor need they raise them from 0. So although individual circumstances, causes and effects will always need properties C, F and G to make them instantiate laws, those laws needn’t be deterministic: they need only entail, for example, that in normal circumstances fires have a greater chance of occurring when explosions do than when they don’t.

Finally, I am not committed to laws having or entailing any kind of necessity, natural or otherwise—except of course in the common but trivial senses in which calling something naturally or physically necessary just means that it’s entailed by a law, or has a chance of 1.

So much for what I am not committed to. What I *am* committed to is a distinction between laws and law *statements*. That distinction is easily, and often, overlooked: as when Humeans say that laws are just true generalisations, like the statement ‘All Fs are Gs’. But they could equally well say that what makes this a *statement* of law is just the fact that all actual Fs are Gs, and call that the law. Now whether we think of laws as true statements (or sentences or propositions) or as the facts, Humean or otherwise, that make those statements true usually doesn’t matter. But here it does matter: because what law statements contain are predicates (or their meanings); whereas what the facts that makes those statements true contain are properties. And what causation needs are the facts, with their constituent properties, not the statements with their predicates. That’s why in what follows it is the facts, and not the statements, that I shall call laws.

I don’t of course deny the close connection between the properties laws contain and the predicates we use to state those laws. On the contrary, this connection is, as we shall see, much closer than that between properties and other predicates. But this is not because the predicates that occur in law statements define the corresponding properties. It’s the other way round. For the fact is that we have no semantic (or any other *a priori*) criterion of identity for the contingent properties that laws contain, any more than we have for contingent particulars. The most we can say *a priori* is this. For F and F\* to be the same property, the predicates ‘F’ and ‘F\*’ must be coextensive in all possible worlds: since otherwise whether some possible particular has the property F will depend on which predicate, ‘F’ or ‘F\*’, we use to ascribe that property to it, which is absurd.

But this *a priori* truth won’t tell us what F, or any other contingent property, is. The real work of identifying contingent properties is not done *a priori*. It’s done *a posteriori*, by scientific theories construed as Ramsey sentences: that is, construed as saying for example that *there are* properties C, F, G etc., such that in circumstances C all F’s have such-and-such a chance of being G. If that statement is true, then there are such properties, and there is such a law, of which those properties are constituents. And being a constituent of such laws is, I maintain, all there is to being a property. There is no more to temperatures than the thermodynamic and other laws they occur in; no more to masses and forces than the laws of motion and of its gravitational and other causes; and so on. In other words, if we stated all the laws there are in a single Ramsey sentence S, S would provide a definite description of all the contingent properties there are: namely, of all and only those properties whose existence S entails.

I can’t on this occasion argue for this claim in any detail. All I can do is meet the common objection that S doesn’t identify the properties it quantifies over, because all it tells us is that they exist, not what they are: only that such-and-such descriptions of them are satisfied, not what satisfies those descriptions. In short, that even if we knew S, any property P which S says exists would still only be a something ‘we know not what’. But what wouldn’t we know? We would know *which* property P was, because S, by hypothesis, distinguishes every real property from every other. Moreover S certainly contains all the information relevant to P’s identity. For the only thing it doesn’t tell us about P is what particulars have that property: that is, what P’s extension is. But no one thinks that a property’s identity depends on its extension: that what it is to be red depends on what or how many red things there actually are. I see no reason therefore to deny that the contingent properties there are are just those whose existence our Ramsey sentence S entails; and that from now on is what I shall take real contingent properties to be. So our question now becomes: how do these properties relate to the meanings of our predicates?

## Predicates

Suppose I see that some thing A is red: that is, that the predicate ‘red’ applies to it. What has happened? Clearly something about A has caused me to believe this. But what? In particular, is it just the fact that A has the property of being red?

But what does this question mean? What is it for A to have the property of being red? What is it indeed for there to *be* such a property? If real properties are those that our Ramsey sentence S quantifies over, what makes one of them the property of being red? Well, suppose that anything which anyone sees to be rightly called ‘red’ always has a certain property P, and that its being P is what causes them to see that. Whether there is any such property P is, as we shall see, a very moot point. But suppose for the moment there is. Then clearly, if anything is the property of being red, P is.

But how then does P contribute to the meaning of the word ‘red’? Suppose we agree to start with that predicates like ‘red’ may also be used as singular terms referring to the property (if any) that all and only the particulars they apply to share (as in ‘red is a warm colour’). Then if the singular term ‘red’ refers to anything, it refers to P. Suppose it does refer to P—and does so even though no one knows what P is, because no one knows enough laws of nature to distinguish P from all other properties. One might therefore object to this supposition on the grounds that we can’t refer to something unless we (or some authority we’re deferring to) knows what it is. But that isn’t true. We can easily refer to things without anyone knowing what they are, most obviously when we’re trying to find out what they are. Suppose for example we’re in the eighteenth century, and trying to find out what water is. We are obviously using the word ‘water’ to refer to a natural kind (suppose it’s H2O) which no one has yet identified. But if we can use ‘water’ to refer to a natural kind—which is after all just a species of property—without anyone knowing what that kind is, we can certainly use ‘red’ as a singular term to refer to P without anyone knowing what P is.

So let’s suppose we do that. How does this relate to our use of ‘red’ as a predicate? In particular, how does it relate to the predicate’s extension: that is, to the particulars it applies to, namely the things that have the property P. Obviously they can’t *be* the property P, for they are many and it is one. Nor can P be the set of all P-things. For since P is a contingent property, there could be more or fewer P-things than there actually are. But if P were its actual extension, there couldn’t be: so it isn’t.

Nor can P be the set of all *possible* P-things, even if merely possible things existed, which they don’t. At least it can’t if, as I’m assuming, the effects of A’s being P, including those which make us call A red, depend on what P is. For what effects A’s being P will have certainly doesn’t depend on what else is P even in this world, never mind any other. But if P were the set of all possible P-things, the effects of A’s being P would depend on what else is P: so it isn’t.

Indeed P obviously can’t be anyset of P-things, precisely because being P is what *makes* things members of such sets. P, I maintain, like any other universal, is a constituent of atomic facts, such as the fact that the thing A is P. I admit of course that what this amounts to—and especially what links A and P—are hard and long-standing questions: to which I can only respond here by asserting that they do have answers, and that those who deny that facts have universal constituents face even harder questions.

But those are not the questions I want to discuss here. The question here is this. If ‘red’, used as a singular term, refers to P, and this makes ‘red’, used as a predicate, apply to all and only P-things, what makes ‘red’ refer to P? Suppose for example that the word ‘red’ refers to P by having a *sense* which makes it do so. What gives ‘red’ this sense? The obvious answer in this case is a kind of visual sensation which P-things give us when they make us call them red, so that ‘red’ refers to the property of things which causes us to get sensations of that kind: namely, P.

Well, that could be how we apply the predicate ‘red’: but of course it needn’t be. People can learn to see when to apply the predicate ‘red’ without the P-things it applies to giving everyone sensations of the same kind. Being P must make a difference to how things look, to us, but the difference needn’t be the same for everyone. We could learn to apply the predicate ‘red’ by learning to associate it with *whatever* kind of visual sensations we get from the things which existing users tell us are called red. It’s that learned use of the predicate which fixes what kind or kinds of sensation this will be for each of us, not the other way round. And what fixes that learned use, and hence the extension of the predicate ‘red’, is the property P: since instances of P in fact are what we learn to apply the word ‘red’ to.

But this makes P looks less like a referent than a sense, the sense of the predicate ‘red’: namely, that which fixes its extension. But if it is, then again it can’t be necessary for us (or any authority we defer to) to know what this sense is. For as we’ve seen, P can fix the extension of the predicate ‘red’ in this way without anyone knowing what the property P is. But that’s all right: since it is in fact as obviously true of senses as of referents that we needn’t know what the senses of the words we use are. Suppose for example the sense of the predicate ‘red' was given by sensations of a certain kind K, which it certainly could be, even if in fact it isn’t. This wouldn’t require us know what K is. It would only require us to react reliably to K-sensations by applying the predicate ‘red’ to the things that cause them. But if that’s enough to make K the sense of ‘red’, then P can also be the sense of ‘red’. For all P needs to fix the extension of ‘red’ is just that our eyes make us react reliably to P-things by calling them red.

Now ‘sense’ is of course a term of philosophical art, and for some artists it takes more than this to for us to ‘grasp’ a sense. But if it does, then the predicate ‘red’ needn’t have a graspable sense at all. Yet something about us will still fix the extension of the word as we use it: namely, our having learned to let a thing’s being P cause us to call it red. So I think we should stick to the minimal sense of ‘sense’ as that which fixes the reference or extension of our words, and allow P to be the sense of our predicate ‘red’ even though no one knows what P is.

Suppose then that some property P is, in this minimal sense, the sense of our predicate ‘red’. It doesn’t follow that P can tell us what ‘red’ means: that is, give us our *concept* of red. For even in this simple sensory case there’s more to understanding a predicate than being able to apply it. To know what ‘red’ means it isn’t enough to know when something is red. We must be able to draw some inferences from that: the predicate ‘red’ does have connotations. How does P help to provide them?

Well, of course, P needn’t give ‘red’ any of its connotations. As we’ve seen, it can enable us to apply the predicate ‘red’ without our knowing any of the laws in which P figures. We needn’t even know the laws of reflection that make P what causes us to call things red, let alone the laws of chemistry that determine what chemical properties will make things P and therefore red. P need not give the predicate ‘red’ any connotations at all. But it will constrain its connotations. For we do want our inferences to preserve truth, and when we see that they don’t, we give them up. So the inferences we persist in, and eventually make part of the meanings of our predicates, will mostly preserve truth: at least, they will when their premises and conclusions can be verified by our senses.

So at least the verifiable connotations of ‘red’ will not contradict the laws that P figures in. Indeed the fact that these connotations *do* preserve truth will generally follow from some of those laws. In short, the laws that make P the property it is will certainly constrain the connotations of our predicate ‘red’. But certainly not enough to make P part of our *concept* of red. For even if a single property P is in fact what makes us apply the predicate ‘red’ as we do, that fact is obviously no part of that predicate’s meaning: since it isn’t even part of its meaning that all red things share *any* one property, let alone the property P.

And in fact there obviously is no one property that all red things share. For a start, laws needn’t, and mostly don’t, take the simple form ‘In circumstances C all and only Fs are (followed by) Gs’, where C, F and G are single properties. The circumstances, antecedents and consequents of laws can easily include negations, conjunctions or disjunctions of universals. In particular, the laws on which our eyes rely when we use them to apply colour predicates can do so, and almost certainly will.

But even if they don’t, there will still be no one property that all red things share: if only because the property of light that makes it red will clearly differ from all the very different properties of things that make them respectively reflect, transmit and emit red light. So our application of the predicate ‘red’ will rely on at least four laws, with the same consequents (a belief that something is red) but different antecedents: namely, the four respective properties of light, and of reflecting, transmitting and emitting things, which in those four different circumstances cause that belief.

This complication won’t of course make it any harder to learn to apply the predicate ‘red’ in all these four cases. Nor will it make the predicate in any way ambiguous. It simply makes its sense a disjunction of at least four properties: one for red light and one each for reflectors, transmitters and emitters of red light. And as for ‘red’, so even more obviously for less simple and less sensory predicates—except of course those which scientists use in their theories to identify the real properties and relations of things.

In short, what Wittgenstein said of the predicate ‘game’ is almost certainly true of every ordinary predicate: no one property is shared by everything it applies to. But that fact does not dispose of universals and of the problems they present. It provides no excuse for nominalism or conceptualism in either metaphysics or semantics. On the contrary, what it shows is that we must recognise both in our semantics and in our metaphysics how very different our concepts are from the real properties and relations of things, and yet how much, and in what complex ways, they depend on them.