Lecture 3: Properties II – Nominalism & Reductive Realism

Lecture 3: Properties II – Nominalism & Reductive Realism

1. Recap of Previous Lecture

- The logical space of views on properties:
  - (i) Realism. In addition to objects, there are further entities called 'properties'.
    - (i) (a) Non-Reductive Realism. Properties don't reduce to further, more fundamental entities.
    - (i) (b) Reductive Realism. Properties *do* reduce to further, more fundamental entities.
  - (ii) Anti-Realism ('Nominalism'). There are no such things as properties.
- Arguments for Realism:
  - Argument from abstract singular terms. Abstract singular terms (e.g. 'Courage') figure in true sentences (e.g. 'Courage is a virtue'); there must be things in the world that these terms name in order to make the relevant sentences true (barring the possibility of paraphrases in which the singular terms disappear, which the Realist maintains don't exist) and these things are properties.

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2. Recap of Previous Lecture

- Argument from predication. We need a metaphysical explanation of x's being F (e.g. James' being kind, etc.). Realism alone offers such an explanation: x is F iff x exemplifies the property F-ness.
- Argument from attribute agreement. We need a metaphysical explanation of x and y's being identical with respect to being F (e.g. James and Durand's being identical with respect to being tall, etc.). Realism alone offers such an explanation: x and y are identical with respect to being F iff x and y both exemplify the property F-ness.

- Today we will be looking at two groups of people: (i) those who think that Realism is plain wrong and that there are in fact no such entities as properties (nominalists), (ii) those who think that Realism is right but that the story doesn't end there: those who think we can reduce properties to further, more fundamental, entities (reductive realists).

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2. Anti-Realism > 2.1. Motivations

- Problems for Realism (see previous lecture)
  - The issue of location
  - The threat of paradox
  - The threat of regress
- ***Argument for Nominalism over Non-Reductive Realism from parsimony****: [1] Non-Reductive Realism commits us to the existence of at least two fundamental types of things (i.e. objects and properties). [2] Nominalism only commits us to the existence of at least one (i.e. objects). [3] Other things being equal, we should prefer a theory A over a theory B iff A commits us to the existence of fewer kinds of entities than B does. [4] Other things are equal (in particular, nominalists can provide a rebuttal of the arguments advanced in favor of Non-Reductive Realism). Therefore [5] we should endorse Nominalism over Non-Reductive Realism.*

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2. Anti-Realism > 2.1. Motivations

- Much of the following discussion will focus on [4], i.e. whether Nominalism can answer the challenges offered by Realism, realists (of course) claiming that it can't.
- There is however another line of response available to the non-reductive realist who also offers a reductive account of objects in terms of properties: deny [1] by claiming fundamental commitment to only one category of the two: properties. More on this in the next lecture.

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2. Anti-Realism > 2.2. Austere Nominalism: Overview, Pros and Cons

- We will restrict ourselves here to one version of the anti-realist view: 'Austere' Nominalism (sometimes known as 'Ostrich' Nominalism).
- There are a number of other views available, including 'Metalinguistic' Nominalism (sometimes known as 'Predicate' Nominalism) and Ressemblance Nominalism. A good overview is provided in Armstrong's *Universals: an Opinionated Introduction*. Loux's textbook also has a relatively clear section on Metalinguistic Nominalism.
- Note: we will be discussing Trope Theory in section 3. It is commonplace to treat this view as a variety of Nominalism. However, whilst there are indeed versions of Trope Theory that can be considered to be nominalistic, the version discussed in Loux is in fact a form of Reductive Realism: properties exist but they are nothing but sets of entities known as 'tropes'.

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2. Anti-Realism > 2.2. Austere Nominalism: Overview, Pros and Cons

- Austere nominalists hold the view that the various arguments offered by the Realist can be countered with the resources of an ontology restricted to objects.
- Predication. x is F is a metaphysically basic fact and doesn't stand in need of an explanation. Metaphysical explanation must stop at some point and this is as good a point to stop as any other.
- Attribute agreement. As mentioned above, in section 1, if you have a reply to the argument for Realism from predication, you have a reply to the argument from attribute agreement. Here, austere nominalists tell us that: (i) x and y are identical with respect to being F iff x is F and y is F and (ii) x is F and y is F are metaphysically basic facts.

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2. Anti-Realism > 2.2. Austere Nominalism: Overview, Pros and Cons

- Abstract singular terms. This is the more contentious issue. According to Austere Nominalism, sentences incorporating abstract nouns are shorthand for sentences referring to particulars (in a similar vein to the paraphrase of (6) above: 'The average Cambodian…'). For instance:

(7) 'Red is a colour'.

Would translate as:

(7)* 'Red things are coloured things'

This seems ok. However, things aren't so simple: if sentences of the form of (7) are supposed to be equivalent to sentences of the form of (7)*, then surely we should be able to translate the other way, from (7)*-style sentences to (7)-style sentences. However, this isn't always the case:

(8)* 'Red things are spatiotemporally located things' (true)

(8) 'Red is a spatiotemporal location' (false)

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2. Anti-Realism > 2.2. Austere Nominalism: Overview, Pros and Cons

And there are even potential difficulties moving from (7)-style sentences to (7)*-style sentences:

(3) 'Courage is a virtue.'

(3)* 'Courageous people are virtuous people.'

It seems that (3) can be true whilst (3)* remains false: courage may indeed be a virtue but a courageous person who is a child molester is nevertheless surely not virtuous.

Two possible responses:

(a) Claim that there *is* a sense in which a courageous person who is a child molester is virtuous as well as being morally depraved, in the same way that, say, an item of news can be both good and bad or an action can both hinder and promote a certain state of affairs.

(b) Try, instead of (3)*:

(3)** 'Courageous people are virtuous people, other things being equal'

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3. Reductive Realisms: the Appeal to Sets

- In this final section we discuss the view of a number of theorists who believe that:
  - (i) the objections to Realism from location, threat of paradox and threat of regress can be overcome,
  - (ii) Nominalism doesn't offer a satisfactory response to the realist challenge,
  - (iii) properties can be understood in terms of more fundamental entities, thus yielding a more parsimonious worldview than Non-Reductive Realism (and enjoying the same kind of benefit as Nominalism in this respect).
- The reductive accounts that we will discuss reduce talk of properties to talk of sets (in the mathematical sense of the term) of either objects or another type of entity: 'tropes'.
- This is supposed to be ontologically economical because first of all prior commitment to the existence of sets is fairly widespread even amongst non-reductive realists. This is because of the essential role that sets play in mathematics and – consequently – the rest of the sciences.

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3. Reductive Realisms: the Appeal to Sets

- Furthermore, with regards to the sets-of-objects view, objects are of course already in the non-reductive realist's ontology.
- Now, with respect to the sets-of-tropes view, there is indeed a new type of entity postulated, in addition to objects. So this view is less ontologically economical than its sets-of-objects counterpart. However, as we will see shortly, it is argued that tropes are also, in one respect at least, fundamentally similar to objects: they are particulars rather than universals (they aren't multiply-exemplifiable entities). Because of this, the sets-of-tropes view is still deemed more parsimonious than Non-Reductive Realism.
- What is a set? Well without going into details, mathematical sets are simply unordered selections of objects (i.e. {x, y, z} = { x, y, z }). One interesting feature of sets is that two sets are identical iff they have identical members. The importance of this feature will become clear in the various criticisms directed against Set-Theoretic Reductive Realisms.

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3. Reductive Realisms: the Appeal to Sets

- Note: with respect to the issue of location raised above in connection with Non-Reductive Realism, those who endorse the existence of sets tend to agree that sets are non-spatio-temporal entities. Proponents of Set-Theoretic Reductive Realism are thus nearly invariably Platonists.

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3. Reductive Realisms: the Appeal to Sets > 3.1. Sets of Objects

- As I explained above, Object-based Set-Theoretic Reductive Realism (henceforth OSTRR) holds that properties are sets of objects. As a form of Realism, OSTRR claims to offer an explanation of predication and attribute agreement, as well as provide referents for abstract singular terms.
- Predication. x is F iff x is a member of the set F-ness. Note that we clearly have an instance of the realist explanatory schema offered in section 1 of the previous lecture: here, the relation of exemplification is understood as the relation of set membership.
- Attribute agreement. As usual, we have an answer based on the explanation offered for predication: x and y identical with respect to being F iff x and y are both members of the set F-ness.
- Abstract singular terms. Abstract singular terms refer to sets of objects (namely, the objects that we claim exemplify the relevant property). Here however, we encounter the exact same issues raised with respect to Austere Nominalism…

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3. Reductive Realisms: the Appeal to Sets > 3.1. Sets of Objects

For e.g.:

(3) 'Courage is a virtue'.

gets translated as

(3)*** 'The set named by "courage" is a subset of the set named by "virtue"'

which some will claim is the wrong result (this is because some members of 'courage' are, according to these people, not also members of 'virtue'). But aside from these issues with abstract singular terms, OSTRR faces a number of decisive further objections.

- The first two objections stem from the fact that F-ness = G-ness iff F-ness and G-ness have the same members (i.e. exemplifiers). The first trades on the left-to-right entailment (F-ness = G-ness entails that F-ness and G-ness have the same members). The second on the right-to-left entailment (F-ness and G-ness having the same members entails that F-ness = G-ness).

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3. Reductive Realisms: the Appeal to Sets > 3.1. Sets of Objects

▪ ***Argument against OSTRR from sameness of sets entailing sameness of members*** *: [1] According to OSTRR, properties couldn't have had different exemplifiers than the ones they in fact have (because properties are sets of exemplifiers and sameness of sets entails sameness of members, i.e. sameness of properties requires sameness of exemplifiers). [2] However, properties could have had different exemplifiers than the ones they in fact have (e.g. I could have been a bank clerk). Therefore [3] OSTRR is false.*

▪ ***Argument against OSTRR from sameness of members entailing sameness of sets (aka 'coextensive properties' problem):*** *[1] According to OSTRR, two properties are identical if they have identical exemplifiers (because properties are sets of exemplifiers and sameness of members entails sameness of sets). [2] It is possible for there to exist a pair of properties F-ness and G-ness such that (a) F-ness ≠ G-ness but nevertheless such that (b) for every object x, x is F iff x is G (e.g. all beings with kidneys happen to also have hearts but having kidneys isn't the same property as having a heart). Therefore [3] OSTRR is false.*

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3. Reductive Realisms: the Appeal to Sets > 3.1. Sets of Objects

▪ ***Argument against OSTRR from gerrymandering.*** *[1] According to OSTRR, there exists a property corresponding to each set of objects that exist in the world. [2] It isn't the case that there exists a property corresponding to each set of objects that exist in the world. Therefore [3] OSTRR is false.*

Reply: bite the bullet, deny [2] and claim that these properties do exist but that we just don't have words for them.

▪ Because of these issues, OSTRR is widely considered to be a lost cause.

▪ In lecture 5, we shall (time permitting) touch upon an improved version of OSTRR, which makes use of the concept of possible world. For now, however, we turn to an extremely popular alternative which does away with sets of objects altogether: Trope-Based Set-Theoretic Reductive Realism (henceforth TSTRR).

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3. Reductive Realisms: the Appeal to Sets > 3.1. Sets of Tropes

- Trope theorists believe that sets of objects don't do the job. However, they maintain that the set-theoretic approach has the relevant resources: we just need to consider a different type of entity.
- They believe in the existence of a fundamental category of property-like entities that they call 'tropes'. However, unlike properties, tropes are particulars rather than universals: they can't be exemplified by more than one object.
- Now, if we believe the claims of trope theorists, tropes do the job in terms of accounting for predication, attribute agreement and abstract reference (we'll discuss this in a bit). However, a theoretically convenient fiction remains a fiction nonetheless. So why believe in tropes in the first place?

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3. Reductive Realisms: the Appeal to Sets > 3.1. Sets of Tropes

- As we have seen, realists appeal to true sentences involving singular terms to posit the existence of properties. Well trope theorists can offer the same kind of argument a second time round to posit the existence of tropes. They can consider true sentences whose subjects are possessive noun phrases involving abstract singular terms:

  (9) 'James' dyslexia no longer causes him any problems'.

  (10) 'What I really like about that flat is its proximity to the local market'.

  The argument runs as before: the noun phrases in these true sentences probably have referents, etc. However, if these noun phrases do correspond to worldly entities, these are clearly not multiply exemplifiable: James' dyslexia, if there is such an entity, can only be exemplifed by James at that point in time. So we have prima facie evidence for tropes.
- Ok, so let's grant, for sake of argument, the existence of tropes. As all realists do, proponents of TSTRR maintain that their view offers an explanation of predication and attribute agreement, as well as the provision of referents for abstract singular terms…

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3. Reductive Realisms: the Appeal to Sets > 3.1. Sets of Tropes

▪ Predication. x is F iff x has a trope which belongs to the set named by 'F-ness'. Note that this again follows the realist explanatory schema outlined in section 1: here, the relation of exemplification is understood as the relation of possession of a member trope.

▪ Attribute agreement. x and y identical with respect to being F iff x and y each have a trope that is a member of the set F-ness.

▪ Abstract singular terms. 'F-ness' is a name for a set of tropes. But here again, we may have the same kind of problems raised in connection to the two previous views:

(3) 'Courage is a virtue'

translates as

(3)**** 'The set of tropes named by 'courage' is a subset of the set of tropes named by 'virtue'.

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3. Reductive Realisms: the Appeal to Sets > 3.1. Sets of Tropes

But this will seem wrong to some. The claim is that courage tropes are virtue tropes, hence that all objects that have a courage trope thereby have a virtue trope as well. This in itself doesn't seem too bad. *However*, when we consider this claim in conjunction with the account of predication also on offer – namely that x is F iff x has a trope that is a member of the set of tropes F-ness – we end up with the view that all objects that are courageous are virtuous. As we have seen before many are inclined to find this counterintuitive (although personally I don't).

▪ Aside from this issue, TSTRR does enjoy a number of advantages…

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3. Reductive Realisms: the Appeal to Sets > 3.1. Sets of Tropes

- First and foremost, TSTRR avoids the problem of coextensive properties raised in connection with OSTRR:
  - The problem for the object-based account was that whilst two distinct properties can have the same exemplifiers (e.g. having a heart and having kidneys), two distinct sets of objects cannot, by definition, have the same members.
  - On the trope-theoretic view, it is perfectly ok to have two distinct properties having the same exemplifiers: what differentiates them as properties are which *tropes* (and not which objects) belong to which set. To illustrate: imagine a world in which (i) x is F and G and so is y (ii) no other objects are either F or G. According to OSTRR, F-ness = G-ness (because they have the same members, namely the objects x and y). According to TSTRR F-ness ≠ G-ness (because F-ness has x's F trope and y's F trope as members and G-ness has x's G trope and y's G trope as members).

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3. Reductive Realisms: the Appeal to Sets > 3.1. Sets of Tropes

- Secondly, TSTRR has an edge over varieties of Non-Reductive Realism that offer a reductive view of objects. In lecture 4, we will be looking at various reductive theories of ordinary objects. One popular view is to take objects to be bundles of attribute-like things. It turns out however that many believe that this 'bundle' account suffers from serious problems if we take the attribute-like things that the bundles are made of to be universals. Tropes however, being attribute-like particulars, are thought to save to bundle view.
- There do however remain two more (not necessarily terminal) problems…
- ***Argument against TSTRR from sameness of sets entailing sameness of members***. [1] *According to TSTRR, properties couldn't have had a greater or lesser number of exemplifiers than the ones they in fact have (e.g. there couldn't have been any courageous people than there actually are, as the resulting set would contain more tropes and hence be a different set altogether). [2] Properties could have had a greater or lesser number of exemplifiers than the ones they in fact have. Therefore [3] TSTRR is false.*

There *are* however ways of getting round this objection (by appealing to possible worlds) but we'll have to leave things at that for now.

- ***Argument against TSTRR from gerrymandering.*** *[1] According to TSTRR, there exists a property corresponding to each set of tropes that exist in the world [2] It isn't the case that there exists a property corresponding to each set of tropes that exist in the world (e.g. there is no property corresponding to {my car's whiteness, my cousin's kindness, etc.}). Therefore [3] TSTRR is false.*

Two replies:

- Pull off the same move that proponents of OSTRR did: bite the bullet and claim that these properties do exist but that we don't have a word for them.

- Claim that properties are sets of, not just of any old tropes, but of *exactly resembling* tropes. This popular reply rules out the set {my car's whiteness, my cousin's kindness, etc.}. Of course there remains the issue of what it is for two tropes to resemble each other exactly, but proponents of this proposal dig their heels in at this point and claim that this kind of fact is metaphysically basic (in a similar way that austere nominalists claim that attribute agreement is metaphysically basic).

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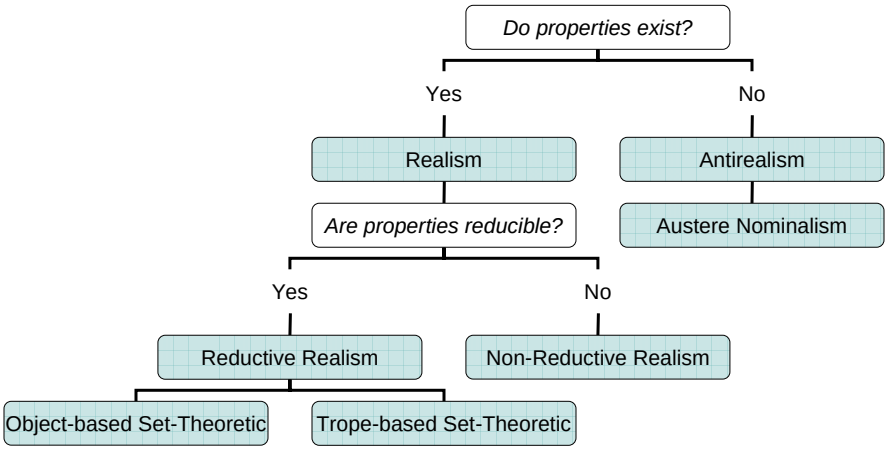
4. Overview of the positions regarding properties



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Next week… Objects

- Set reading: Loux textbook, ch 3: 'Concrete Particulars I: Substrata, Bundles and Substances.' Skip the final section entitled 'Aristotelian Substances'.