Lecture 12: Dispositions

Lecture 12: Dispositions

1. Introduction

- In this lecture, I will say a little more about properties (although, you may be glad to hear, *not* about the Realism/Nominalism debate).
- We are going to take a closer look at a specific *kind* of property that is of great interest to philosophers working in a large number of different subfields: 'dispositional' properties.
- Dispositional properties are also known as 'powers', 'tendencies', 'capacities', 'capabilities', 'potentialities' or 'propensities'.
- Some fairly uncontroversial examples of 'dispositional' properties:
  - elasticity,
  - fragility,
  - solubility,
  - the power to relieve headaches when ingested,
  - the capacity to store 20G of data.

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1. Introduction

- Dispositional properties crop up in many, many different areas of philosophical enquiry:
  - Philosophy of Mind: logical behaviourists famously claimed that mental states are identical to various dispositions to behave in various circumstances (Ryle 1949).
  - Ethics: it has been suggested that x is valuable iff we have a disposition to desire to desire x under 'ideal' circumstances (Lewis 1989).
  - Philosophy of Biology: high biological fitness is sometimes argued to be a dispositional property, perhaps corresponding to a capacity to leave a high number of offspring (Beatty & Mills 1979); more controversially, biological functions are also sometimes analysed as dispositional properties of a certain sort (Bigelow & Pargetter 1987).
  - Metaphysics: on the dispositional account of colour, colours are understood as dispositional properties had by various objects to produce certain types of visual experiences in perceivers (Johnston 1992).
  - etc.

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1. Introduction

- In what follows I will try to give you a brief overview of one of the most salient issues in the literature on dispositions: the issue of the analysis of dispositional properties.
- There are many other important topics to address, including:
  - the issue of whether dispositional properties are invariably 'grounded' in further, lower-level properties (in the way that a particular poison might be grounded in various specific low-level chemical properties),
  - the issue of whether dispositional properties can ever be legitimately involved in causal explanations,
  - the issue of whether the properties mentioned in scientific laws could be taken to be dispositional properties.
- Because of the usual time restrictions, all this is going to have to be left out. The Fara article from the SEP on WebCT provides a brief discussion of most of these issues, as well as many further relevant references.

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1. Introduction

- We will round off the lecture, and the lecture series itself, with half an hour or so of general discussion time, during which we can go over various aspects of the course that you may wish to discuss (points that need clarifying, further reading, etc.).

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2. Analyses of Dispositions > 2.1. The SCA

- It is very natural to think of ascriptions of dispositions as boiling down to the specification of what would happen in various situations, i.e. the specification of various counterfactual conditionals.
- This proposed translation seems quite straightforward for some of our examples, in which we explicitly state, when naming the dispositional property, both a specified *response* (R) and a corresponding eliciting *stimulus* (S) (sometimes respectively called the 'manifestation' and 'triggering' conditions)
- E.g.: x to has the power to relieve headaches when ingested iff were x ingested by someone with a headache x would thereby relieve that person's headache.

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2. Analyses of Dispositions > 2.1. The SCA

- With regards to those dispositional properties for which we *don't* explicitly state the triggering/,manifestation conditions, things can sometimes get a little trickier.
- Some cases are fairly easy. The following looks ok(-ish):
  - For x to be elastic is for x to be such that were x to be deformed by the action of an external force prior to a time t and were that force removed at t, x would recover its original form after t.
- But what, for example, are the precise stimulus/response pairs for fragility?
  - Does the stimulus involve x's being hit with a small hammer, a 30 kg hammer, a 60 kg sledgehammer, dropped from 1cm, dropped from 1 km, etc.?
  - Does the response involve x's cracking, splitting in half, being smashed into small pieces, being eroded at the corners?

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2. Analyses of Dispositions > 2.1. The SCA

- The relevant answer seems to depend, in large part, on context.
- I think it is, however, safe to assume here that, for each context, at least *in principle*, precise triggering and manifestation conditions can be provided for all dispositional properties.
- Building on these remarks, here is our first proposal - the Simple Conditional Analysis of dispositions (SCA):

  SCA: necessarily, x has a disposition D to produce response R to stimulus S iff were it the case that S, x would produce R. (formally: $\Box (Dx \leftrightarrow (Sx \Box\!\!\rightarrow Rx))$)
- Something like SCA has been endorsed by a number of people, including Ryle (1949), Goodman (1954), and, more recently, Gundersen (2002).
- Sensible as the proposal may seem, it has nevertheless largely fallen from grace in contemporary philosophy, due to a profusion of alleged counterexamples.

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2. Analyses of Dispositions > 2.2. Counterexamples: Finks, Masks and Mimicks

- We find two broad types of potential counterexamples, one for each direction of entailment subsumed under the biconditional figuring in SCA:
  - (i) Dx but not (Sx □→Rx) (suggesting that the conditional analysis is too *strict* – i.e. provides conditions that *aren't necessary* for the possession of a dispositional property)
  - (ii) (Sx □→Rx) but not Dx (suggesting that the conditional analysis is too *lenient* – i.e. provides conditions that *aren't sufficient* for the possession of a dispositional property)
- There are a number of recipes for generating such kinds of counterexample.

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2. Analyses of Dispositions > 2.2. Counterexamples: Finks, Masks and Mimicks

- One such recipe, attributed to Martin (1994), but traceable all the way back to Shope (1978), yields what is known as '*finking*'/'*reverse-finking*' scenarios.
- Here is the train of thought behind these cases…
- Things can gain or lose dispositions in certain circumstances (e.g. metals can become fragile in low temperatures, etc).
- There is nothing to prevent there from being cases in which a certain factor F is present such, in the presence of F, the antecedent of the conditional in SCA (i.e. Sx) brings about an loss or acquisition of the relevant disposition.
- We therefore end up with the prospect of scenarios in which an interfering factor F in place ensures that:
  - (i) despite x's *having* D, Sx □→Rx is *false*, because, due to the presence of F, Sx *removes* Dx. (case of finking – F here is known as a 'fink'))
  - (ii) despite x's *lacking* D, Sx □→Rx is *true*, because, due to the presence of F, Sx *brings about* Dx. (case of reverse finking – F here is known as a 'reverse fink')

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2. Analyses of Dispositions > 2.2. Counterexamples: Finks, Masks and Mimicks

- I'll just give you an instance of the first type, which will do fine for our purposes.
- A highly flammable bible is kept in a secure room. Let's say, for sake of argument (and this is a *very* bad definition, but nevermind), that x is flammable iff, were x heated beyond some relevant temperature t, x would ignite. The room, however, is equipped with a heat-sensitive camera, such that, if the temperature in any point of the room exceeds t, various sprinklers are activated, spraying a mist that would render the book temporarily inflammable.
- Here we have a disposition (i.e. flammability) such that, because of the presence of an interfering factor (i.e. the camera + sprinkler setup) the associated triggering condition (i.e. heating beyond t) leads to a loss of that disposition, thereby falsifying the relevant counterfactual (i.e. had the book been heated beyond t, it would have ignited).
- It is nearly unanimously thought that this type of case is a decisive counterexample to SCA.

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2. Analyses of Dispositions > 2.2. Counterexamples: Finks, Masks and Mimicks

- In addition to our two types of finking scenario, discussions of SCA have also focused a further two types of cases: '*masking*' and '*mimicking*' (due to Johnston (1992)).
- In these cases, the interfering factor leaves the dispositions of the object alone but disrupts the conditional by interfering with the 'normal' course of events linking the stimulus to the response.
- Masks are factors whose presence ensures that, despite x's retaining its disposition D after the occurrence of the stimulus Sx, $Sx \Box\!\!\rightarrow \sim Rx$. (Masking is thus analogous to finking (i.e. the bible/sprinkler case).)
- For example, consider a pill containing both a poison x and its antidote y. Were x to be ingested, x would fail to bring about death. However, it wouldn't fail to do so because y would rob it of its dispositional properties (in the way that the sprinkler would have rendered the bible fire-resistant): x would retain its poisonous disposition but the normal chain of events between stimulus and reaction would be disrupted by the interfering factor y.

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2. Analyses of Dispositions > 2.2. Counterexamples: Finks, Masks and Mimicks

- Mimics are factors whose presence ensures that, despite x's not acquiring disposition D after the occurrence of the stimulus Sx, Sx $\Box\!\!\rightarrow$ Rx. (Mimicking is therefore akin to reverse-finking.)
- For example, a non-fragile gas cylinder is hooked up to a device that detonates an explosive situated under the cylinder upon detection of small vibrations. When kicked, the cylinder is fragmented, although it remains non-fragile after the kick.
- As with finks/reverse-finks, masks and mimics are widely thought to pose insoluble problems for the SCA (masks and mimics also arguably poses problems for an attempted amendment of the SCA due to Lewis's (1996), which I don't have time to go into)

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2. Analyses of Dispositions > 2.2. Counterexamples: Finks, Masks and Mimicks

- There are a number of ways of responding to the cases.
- One could, for instance, despite initial intuitions to the contrary:

  (a) Deny that x really *does* have the relevant disposition in cases of masking or finking, and that it really *does* lack the relevant disposition in cases of mimicking or reverse finking.

  (b) Deny that the relevant counterfactual really *is* false in cases of masking or finking, and deny that it really *is* true in cases of mimicking or reverse finking.
- This would amount to the kind of strategy that we found Lewis attempting in connection with the apparent counterexamples to transitivity that we saw last week: deny the truth of our intuitions, whilst providing an account of how we may have been tempted into error.
- I have no idea how we should go about constructing such an account so I'll leave this as a possible but unattractive option.

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2. Analyses of Dispositions > 2.3. Dispositions and Normal Conditions

- A more promising line of response, in my view, is to start off by noting that the problem would be resolved if the antecedent of the relevant conditional were strengthened so as to rule out the presence of the kinds of disturbing factors that caused trouble for the SCA (i.e. finks, reverse finks, masks and mimics).
- In other words, we would be out of trouble if we were to have an account of the following form:

  SCA*: necessarily, x has a disposition D to produce response R to stimulus S iff were it the case that S *and C*, x would produce R.

where C is such that it entails that the relevant disturbing factors do not obtain.

- But how should we specify C?

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2. Analyses of Dispositions > 2.3. Dispositions and Normal Conditions

- First, some bad ideas..
- Bad Idea (i): try to provide a list of all the various particular disturbing factors. Fara (2005) provides the following illustration of the procedure:
  - Consider: (1) Fara's kazoo is disposed to buzz when blown into.
  - Suggestion (a): (1) is true because (2) were the kazoo to be blown into, it would buzz.
  - Problem (a): if we stuffed Fara's kazoo with paper, (1) would still be true but (2) would be false.
  - Suggestion (b): (1) is true because (3) were the kazoo to be blown into and were it not stuffed with paper, it would buzz.
  - Problem (b): if we dipped Fara's kazoo in tar, (1) would still be true but (3) would be false.
  - etc.

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2. Analyses of Dispositions > 2.3. Dispositions and Normal Conditions

- One problem with Bad Idea (i) seems to be that there is no finite list of factors that will do the job: we might never be in a position to offer a completed analysis.
- Fara (2005) also complains that we will lack a *general* account of dispositions: there will be no general procedure for yielding conditionals equivalent to disposition ascriptions. Instead, we will have a particular account of fragility, appealing to C_F , a particular account of malleability appealing to C_M, etc., with no overall framework accounting for the connection between dispositions and conditionals.
- Bad Idea (ii): define C as 'that condition such that were it the case that S and C, x would produce R'. This would surely prevent finks and masks and the like from spoiling true disposition ascriptions, as they all have in common the property of rendering the relevant counterfactual false..

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2. Analyses of Dispositions > 2.3. Dispositions and Normal Conditions

- One problem with Bad Idea (ii) is that it simply fails to rule out mimics and reverse finks. Objects will *still* wrongly be ascribed various dispositions when in presence of these kinds of factors.
- But in fact, Bad Idea (ii) makes the situation even worse than it was for the SCA: this time it isn't only that we will be wrongly ascribing dispositions to objects that are in the presence of mimics and reverse finks. Mimics and reverse finks won't even have to be present for our ascriptions to be wrong. Pretty much anything will count as having pretty much any disposition: there is pretty much always some kind of complex factor C such that for any x, S and R, were it the case that S and C obtain, x would produce R.
- Bad Idea (iii): define C as 'that condition such that x has a disposition D to produce response R to stimulus S iff were it the case that S *and* C obtain, x would produce R'.
- The problem with Bad Idea (iii) is that it would render the proposed analysis circular.
- So what can we do?

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2. Analyses of Dispositions > 2.3. Dispositions and Normal Conditions

- A more promising suggestion might be to follow Malzkorn (2000) and a number of others in proposing to identify C with 'normal' conditions.
- Indeed, one first common reaction, when faced with cases involving finks, reverse finks and so on, it to feel that these are somehow 'weird' or 'unusual' cases in some sense of the terms.
- To the extent that this is indeed the case, including the obtaining of 'normal' environmental conditions in the antecedent of our conditional will do the job required.
- Now of course, *it had better turn out* that we can offer an analysis of 'normality' that doesn't amount to any of the bad proposals made above:

  (a) we need a *general* account of such conditions (rather than an unprincipled list) and

  (b) we need an account that doesn't presuppose the notion of disposition.
- Is such an account forthcoming?

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2. Analyses of Dispositions > 2.3. Dispositions and Normal Conditions

- Some are sceptical (e.g. Fara 2005). I am more optimistic.
- I can't go into details here, as it would take us too far afield, but those of you who are interested may want to take a look at the evolutionary accounts of Millikan (1995) and Schurz (2001), who strike me as being on a promising track.
- I'll leave this as holiday reading…

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