

Week 2: Multi-modal and conditional views

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1 Can as $\Diamond\Box$

Recall the basic semantic worry about an existential analysis, on which, e.g., ‘I can swim’ says that *I swim in a possible world that holds fixed certain intrinsic features of me*. On the face of it, this looks too weak for e.g. ‘I can hit the bullseye’ or ‘This elevator can carry 1500 pounds’.

Brown (1988), following a suggestion of Kenny’s, aims to develop the idea that

To say that I am able to hit the bull’s-eye at darts is not merely to say that I can try and may succeed, but to say that my success is (at least) reliable and (perhaps) reproducible. . . When I say that I can bring it about that A is true, I can be understood to mean that there is an action open to me, the execution of which would assure that A would be true

Brown’s model: each world can access a set of *propositions*, each of which corresponds to the doing of a “logically possible action”. ‘I can φ ’ says that some accessible cluster entails φ .

In fact we can just model this with a standard accessibility relation, where we are decomposing ‘can’ into stacked (classical) modal operators so that ‘S can φ ’ is rendered $\Diamond\Box\varphi(S)$.

This answers Kenny’s motivations nicely: even though the underlying logic of \Diamond and \Box is normal, the logic of $\Diamond\Box$ is not.

- p does not entail $\Diamond\Box p$
- nor does $\Diamond\Box(p \vee q)$ entail $\Diamond\Box p \vee \Diamond\Box q$.

It may be that you will happen to hit a bullseye, without there being anything you can do that guarantees you will. It may be that there’s something you can do that guarantees you’ll pick a red or black card, without there being anything you can do that guarantees you’ll pick a red card or anything you can do that guarantees you’ll pick a red card.

One important but obvious insight here: even if we want a modal logic weaker than K, it doesn’t follow that we must reject the standard infrastructure of modal logic. It may rather be that—as Kenny himself suggests—‘can’ simply requires a more complex “translation” into modal logic. However, even if that’s true, it substantially undermines the unified Kratzerian perspective on natural language modals.

In Vetter (2013)’s formulation.

See also Fusco 2020 for a recent approach along very similar lines to Brown’s.

Each cluster Φ can be mapped to a new possible world x that can see exactly the worlds in Φ ; the valuation on x doesn’t matter.

1.1 A common failure mode

The idea that ‘S can φ ’ says something like *there’s some action available to S that guarantees $\varphi(S)$* is a popular thread in the literature.

But this idea seems to struggle to account for the behavior of ‘can’ under negation, where it looks more existential:

- (2) I { $\begin{smallmatrix} \text{can't} \\ \text{am not able to} \end{smallmatrix}$ } hit the dartboard.
 (3) I { $\begin{smallmatrix} \text{can't} \\ \text{am not able to} \end{smallmatrix}$ } swim.
 (4) This elevator { $\begin{smallmatrix} \text{can't} \\ \text{am not able to} \end{smallmatrix}$ } carry 1500 pounds.

On the stacked modal approach we’re considering, ‘I can’t φ ’ means: there’s no action I can take that *guarantees φ -ing*. Suppose I’m a pretty good darts-player. I often hit a bullseye. But there’s nothing I can do that *perfectly* guarantees that I will; any action I can take is *compatible* with a miss. Then on this account, ‘I can’t hit a bullseye’ is true. But intuitively we would hesitate to see this.

Another case: I will draw a card. If it’s clubs, I win; otherwise, I lose. (5) does not seem assertable here:

- (5) I can’t win.

This points to an interesting intuition: there’s maybe something *gappy* about ability—many have the intuition that *ascribing* an ability ascribes some kind of reliable guarantee, but that *negating* an ability ascription ascribes some kind of reliable failure.

A potential reply: the kind of *guarantee* required for ability is a weak kind: we may be happy to ignore worlds where I miss a bullseye, as long as there are *enough* where I hit a bullseye. But this doesn’t really seem to work if there’s a very substantial chance I miss, or in the cards case.

2 Generic vs. specific

It’s worth considering the possibility that the two-facedness of ability arises from the fact that there are really two things we’re studying: *generic* ‘can’ and *specific* ‘can’

Some in the literature speak about a semantic ambiguity here: more plausibly there’s either a *syntactic ambiguity* or *context-sensitivity*:

- you might think there’s different resolutions of the context-sensitivity of ‘can’ that correspond to (gradients along) a generic/specific axis. This might be suggested by Lewis’s Finnish example: I can (generically, qua normal human) speak Finnish, even though I can’t (right now) speak Finnish.

‘can’t’ obviously means ‘not (can)’, rather than ‘can (not)’ despite the surface form. Some confusion in the literature about duality. There is an interesting question of whether anything lexicalizes the dual of ‘able’; I tend to think it does in cases like this:

- (1) I have to sneeze. (I’m unable to refrain from doing so.)

But we don’t need to worry about that to worry about how ‘able’ behaves in negative environments.

This is a standard distinction though terminology varies.

◦ or you might think there's two different parses of ability ascriptions:

- (6) a. $A_s\varphi$
 b. $Gen[A_s\varphi]$

where *Gen* is a generic operator. One way to spell out this idea: φ can either be an *act type* or a *specific action*. When the former, there is a covert time or situation pronoun that needs to get bound by a covert generic operator. So the LFs are:

- (7) a. $A_s\varphi_t$
 b. $Gen_t[A_s\varphi_t]$

These are different views: the first predicts that you can freely mix generic and specific 'can' with action types vs. specific actions. This is something Honoré (1964) explicitly defends. Test for this by testing 'generally able':

- (8) a. I am generally able to hit bullseyes.
 b. ?I am generally able to hit a bullseye at 1 pm on September 14, 2024.
 c. I am now able to hit bullseyes.
 d. ?I am now able to hit a bullseye at 1 pm on September 14, 2024.

Of course, 'hit a bullseye at 1 pm...' is not a maximally specific action description: there's gradience here.

Conversely, Kenny argues that

The ability-operator needs temporal specification, but the description of the exercise of the ability should not be temporally specified. For abilities are inherently general; there are no genuine abilities which are abilities to do things only on one particular occasion. This is true even of abilities, such as the ability to kill oneself, which of their nature can be exercised only once.

Not sure about this; we can talk about being able to φ on a particular occasion:

- (9) I am normally confined to bed, but next Tuesday I'll be allowed out, so I will be able to meet you on Tuesday at 12 pm.

One hypothesis is that *ability* (like other -ile's) is inherently generic, but 'can' need not be.

In any case, we need to be very careful about what we're theorizing about: talk of abilities in general involves a mix of (generic) genericity and some agent-specific kind of modality. You can have different diagnoses of the generic/specific distinction, but it's important to have the distinction in view.

3 Conditional analyses

Hume (1748) argued that ‘S can φ ’ means ‘If S tries to φ , S succeeds’. The view was influentially revived by Moore (1912).

Or so I’m told.

Some prima facie motivation for this comes from felt pairwise equivalences:

- (10) a. I can hit a bullseye on this throw.
b. If I try to hit a bullseye on this throw, I’ll succeed.
- (11) a. I can swim across this pool.
b. If I try to swim across this pool, I’ll succeed.
- (12) a. This elevator can carry 1500 pounds.
b. ?If this elevator tries to carry 1500 pounds, it will succeed.
c. [Maybe better:] If you [generic] try to carry 1500 pounds in this elevator, you’ll succeed.

When I’m an iffy darts player, most people have somewhat ambivalent feelings about something like (10-a); an important observation now is that feelings about (10-b) seem similar. Likewise for the other pairs.

3.1 A syntactic hypothesis?

Austin (1961) distinguishes two versions of a conditional analysis, one which says that the *analysis* of ability involves conditionals, and one which says that *sentences* about ability actually involve unpronounced conditionals.

Austin argues against the second claim, and I don’t know of good arguments for it, though it’s worth noting that it’s to some degree part of orthodoxy in linguistic semantics, where *all* modals involve (unpronounced or pronounced) conditionals.

4 The strength of the conditional

If we take seriously the pairwise equivalences above, we have an initially plausible analysis of ‘can’ in terms of ‘if’. But what ‘if’? We need to say more to have a semantic model / logically committal picture.

I’ll use > for ‘if’.

4.1 Cross: ‘if-might’

Roughly: consider the closest possible worlds to actuality where some ‘test condition’ is met. $A_s\varphi$ is true at w iff φ is true at *one* of those worlds.

On the orthodox Humean approach, the test condition is the agent trying to φ ; we’ll return to this.

Essentially: what *would* happen, were you to try to φ , must be *compatible* with doing φ .

This is consonant with the general idea that ‘able’ is an existential quantifier. But it also seems to face the same problems as that view: the fact that, if I try to hit the bullseye, I *might* succeed should not make us confident that I can hit the bullseye, if my rate of success is very low.

4.2 A variably strict conditional?

A different approach would combine the Humean idea with a Lewisian/Kratzerian analysis of conditionals, where $p > q$ means: q is true in *all* worlds most similar to actuality where p is true.

On this view, conditionals express a kind of *relativised necessity*, where the relativization is to the conditional antecedent.

hence “variably strict” analysis.

This might do better for explaining our hesitancy about asserting that I can hit the bullseye. But it seems to run into the same trouble as Brown’s view with negated ability ascriptions: on this view, ‘I cannot hit the bullseye’ says that trying to hit the bullseye is *compatible* with failure. But this seems too weak: ‘I cannot hit the bullseye’ seems instead to mean that if I try to hit a bullseye, I *will* fail.

4.3 Thomason/Stalnaker

It looks like we want a conditional that commutes with negation in the sense that (13-b) follows from (13-a):

- (13) a. Not (if S tries to φ , $\varphi(S)$)
 b. If S tries to φ , $\neg\varphi(S)$.

As Thomason (2005) points out, that’s what we get from the analysis of conditionals given in Stalnaker 1968; Stalnaker and Thomason 1970, which is characterized (relative to Lewis’s conditional logic) by the validity of:

- *Conditional Excluded Middle*: $\vdash (p > q) \vee (p > \neg q)$

and hence validates the inference from $\neg(p > q)$ to $p > \neg q$.

Semantically, Stalnaker accounts for this with a semantics where, for each (possible) conditional antecedent φ and world w , there is a unique φ -world “closest” to w ; $\varphi > \psi$ is true at w iff φ is impossible or ψ is true at the closest φ -world to w .

So together with the conditional analysis, we have: ‘S can φ ’ is true just in case S φ ’s at the closest world to actuality where she tries.

- this captures duality well
- together with a theory of indeterminacy/vagueness, it does a nice job with the sort of uncomfortable feelings people have about ‘I can hit the bullseye’.

He notes ‘The variably strict theories are much more popular; the variably material theories seem to be much better supported by the linguistic evidence’; I think the popularity claim might not be true any more.

References

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