Chance, Ability, and Control*

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June 21, 2023

Abstract

A compelling, and popular, thought is that *ability entails control*: S's being able to φ entails that φ be, in some sense, in S's *control*. But this intuition is inconsistent with a different *prima facie* compelling thought: that S's *succeeding in* φ-ing entails that S is able to φ. In this paper, I introduce a new form of evidence to help adjudicate between these two theses: namely, *probability judgments about ability ascriptions*. I argue that these judgments provide evidence in favor of the intuition that success entails ability, and against the intuition that ability requires control. Moreover, I argue that these judgments support one particular analysis which vindicates the success intuition, namely, the analysis of ability in terms of conditionals.

1 Introduction

What does it take to be able to do something—say, wash the dishes before bed, read a paper, or hit a bullseye? This is a question which, as Austin (1961) puts it, 'in philosophy... we seem so often to uncover, just when we had thought some problem settled, grinning residually up at us like the frog at the bottom of the beer mug'.

I will take up a particular controversy in the theory of ability: namely, whether ability requires *control*. On the one hand, there is a compelling thought that S is able to φ only if φ is under S's control. It follows that S's doing φ *flukily*, in an out-of-control way, does not show that S is *able* to do φ. On the other hand, there is a compelling thought that S actually *doing* φ shows that S is *able* to do φ: that is, *success* entails ability.

The control intuition and the success intuition conflict: if doing φ, even in an out-of-control way, shows that you were able to do φ, then ability does not entail control. Conversely, if ability

*I'm grateful to audiences at the University of Lisbon, the Centre for Human Abilities, the Dianoia Institute for Philosophy, Johns Hopkins Univeristy, and Stanford University; to two anonymous referees; and to David Boylan, Nilanjan Das, Cian Dorr, Melissa Fusco, Ben Holguín, Bruno Jacinto, Joshua Knobe, Harvey Lederman, Annina Loets, Guillermo del Pinal, Daniel Rothschild, Paolo Santorio, Ricardo Santos, Ginger Schultheis, Kieran Setiya, Malte Willer, and Snow Zhang for very helpful discussion.

requires control, then doing φ in an out-of-control way does not show that you are able to do φ. The literature seems deadlocked on this issue: intuitions in key cases seem deadlocked, and prominent analyses have come down on either side of the debate.

In this paper, I try to make progress in resolving this controversy by introducing a new form of evidence to the debate: namely, judgments about the probabilities of ability ascriptions. I argue that these provide an important source of evidence about the meaning of ability ascriptions. In particular, they provide evidence in favor of the success intuition, and against the control intuition. Hence they support analyses that entail the success intuition. More specifically, I argue that they support an analysis of ability in terms of *conditionals*, in the tradition of Hume 1748.

I set up the debate by briefly introducing two popular approaches to ability which validate the success inference but not the control inference (§2). Then I'll motivate control, explain its conflict with success, and briefly introduce analyses which embrace the control intuition (§3). In §4 I introduce my key data: probability judgments about ability ascriptions. I explain how these data favor success and tell against control (§5), and finally argue that, in particular, they favor a form of conditional analysis of ability (§6).

2 Success

I'll start by briefly introducing and motivating two popular theories that embrace success, by way of motivating and situating the success inference.

First, some preliminaries. My topic is *agentive modals*: words like 'able' and 'can' in English, on a reading where they are used to talk about abilities or their lack. In some cases it is unclear whether they are getting such a reading rather than a circumstantial reading (a topic I'll return to in §6.4), but for the most part I will focus on what I think everyone will agree are paradigmatic ability ascriptions. I move freely between 'able' and 'can', assuming that on their agentive readings, they mean the same thing; and when I talk about 'able' without further specification, what I mean is 'able' *on its agentive reading*. I assume agentive modals denote a relation between an individual and an action (which, for simplicity, I'll model simply as a property of individuals); I write $A_s\varphi$ for $\ulcorner$S is able to $\varphi\urcorner$ on its agentive reading, and $\varphi(S)$ for $\ulcorner$S φ's$\urcorner$. I will be sloppy about use and mention (so I will use φ both as a schematic variable over predicates in our target fragment and as a metalanguage variable over actions).

2.1 The existential analysis

The first theory of agentive modals to consider says that $A_s\varphi$ is an existential quantifier over accessible worlds. Analyses along these lines were proposed in Hilpinen 1969; Lewis 1976; Kratzer 1977, 1981. In particular, Kratzer influentially proposed that different "flavors" of modality are derived from the same underlying semantic skeleton; since the standard treatment of modals like 'might' and 'may' makes them existential quantifiers over accessible worlds, it is thus natural, and fairly standard, to think that 'able' has the same structure, roughly assimilating it to the $\Diamond$ of modal logic. There are differences in implementation which need not concern us here;[1] the basic idea is that 'able' quantifies existentially over possible worlds that hold fixed the agent's intrinsic features and her (contextually salient) extrinsic circumstances (see Vetter 2013 for a helpful characterization of the view). More formally:

Existential analysis: $[\![A_s\varphi]\!]^{c,w} = 1$ iff $\exists w' : wR_cw' \wedge [\![\varphi(S)]\!]^{c,w'} = 1$

$[\![\cdot]\!]^{c,w}$ is the interpretation function which takes a sentence to its truth-value at context c and world w. R_c is the context's binary accessibility relation on worlds, which, again, holds fixed salient facts about the agent's circumstance and her intrinsic features.

So, for instance, a sentence like (1) is predicted to be true on this view just in case Flo's circumstances and intrinsic features are compatible with her flying:

(1) Flo is able to fly.

If Flo is a penguin, (1) thus comes out false. If Flo is a swallow, and otherwise unimpeded from flying, then (1) comes out true.

2.2 The conditional analysis

This looks reasonable enough. Other cases, however, suggest that the existential account is too weak and have motivated an alternative theory which analyzes ability in terms of *conditionals*. Consider this case from Mandelkern et al. 2017. Jo is playing darts. Jo's young daughter Susie exclaims:

(2) I'm able to hit the bullseye on this throw.

Now suppose that Susie is an ordinary five-year-old child: she is relatively weak and uncoordinated, and it is extremely unlikely that she'll hit the bullseye if she tries. But it's not *impossible*. To make this more concrete, suppose that once Susie took a lucky shot and in fact hit a bullseye. So we know that it's *possible*, consistent with her intrinsic features and local circumstances, for her to hit a bullseye. Still, most people won't readily assert or assent to (2). Intuitions about the precise status of (2) vary, but no one seems to think that (2) is clearly true. Instead, people tend to think that (2) is indeterminate, or false, or unlikely, or perhaps unassertable for yet some other reason. One of the goals of this paper is to clarify the

[1]Most prominently, Kratzer's treatment involves two contextual parameters, a modal base and ordering source, rather than one; but for our purposes, there is no downside to compressing those parameters into a single accessibility relation.

precise status of sentences like (2). But the present point is that all of these judgments are, on the face of it, inconsistent with the existential theory, which predicts that (2) is clearly, determinately, certainly true, since it is clearly, determinately, certainly *compatible* with Susie's intrinsic features, and the present circumstances, that Susie hit the bullseye on this throw.

A natural first impulse in response to cases like (2) is to reach for some kind of threshold view, where abilities require that the action in question be suitably *likely* or *normal*. However, a little reflection suggests that a theory like that wouldn't work, for we are able to do things that we are very unlikely to do, and which would be very abnormal. For instance, take Sylvia, a professor of philosophy with ordinary physical abilities and ordinary adherence to social norms, who is in the midst of giving a colloquium talk. (3) is clearly true in this circumstance:

(3) Sylvia is able to remove her shoes and leave the room.

But it is extremely unlikely that she will do so, and it would be extremely abnormal for her to do so. So thresholds do not, on reflection, yield an easy fix to the existential analysis.[2]

A different idea is to treat ability ascriptions as involving an underlying conditional meaning. This conditional analysis was first put forward in Hume 1748 and has been an influential contender since (e.g. Moore 1912; Lehrer 1976; Cross 1986; Thomason 2005). On this account, $A_s\varphi$ says that if S *tries* to φ, then S does φ. That is, where $try(S,\varphi)$ is shorthand for ⌜S tries to φ⌝ and $>$ is the conditional operator ⌜If. . . then. . . ⌝:

$$\textit{Conditional analysis}\text{: } [\![A_s\varphi]\!]^{c,w} = 1 \text{ iff } [\![try(S,\varphi) > \varphi(S)]\!]^{c,w} = 1$$

To see the attractions of the account, consider the three examples we've looked at so far, in reverse order. Start with (2), 'I'm able to hit the bullseye on this throw'. This has the same status, according to the conditional analysis, as the conditional 'If Susie tries to hit the bullseye, she'll succeed'. This seems intuitively correct: different theories of the conditional have different takes on the status of this conditional, but no one predicts that it is certainly true this case, matching intuitions about the ability claim.[3] Next consider 'Flo is able to fly.' According to the conditional analysis, this is true just in case if Flo tries to fly, she succeeds. If Flo is a penguin, this latter conditional is clearly false; if Flo is an (otherwise unhindered) swallow, it is clearly true. Finally, consider 'Sylvia is able to remove her shoes and leave the room.' This is true, on the conditional analysis, just in case if Sylvia tries to remove her shoes and leave, she'll succeed, which is clearly true.

[2]A natural second response to these facts is to upgrade 'able' from an existential to a *universal* modal (that is, the $\Box$ of modal logic). This would make (2) clearly false. While this response has been mooted and, in some cases, advocated in different forms (e.g. Giannakidou 2001; Giannakidou and Staraki 2012), on the simplest implementation it is clearly wrong. Sylvia is able to take her shoes off, and Sylvia is able to keep them on; but it doesn't follow that she is able to do everything, as it would on a universal analysis.

[3]According to Stalnaker 1968, 1980, this conditional is indeterminate in truth value. According to van Fraassen 1976, the conditional is very unlikely to be true. According to Adams 1975, the conditional has a low degree of assertability. According to Lewis 1973; Kratzer 1981, the conditional is simply false.

These verdicts seem appealing. In other cases, the conditional analysis is less plausible (see §6.2). But for now I want to step back and examine an inference that both the existential and conditional analyses validate.

2.3 The Success inference

Loosely speaking, the success intuition says that *doing something* entails that you are *able* to do it. More carefully, I'll focus on the inference that says if someone tries to do some action and succeeds, then they are able to do that thing:[4]

Success: $try(S, \varphi) \wedge \varphi(S) \vDash A_s\varphi$

Success is validated by both the existential and conditional analyses, given standard assumptions. Success follows from the existential analysis given the assumption that the world of evaluation is always accessible. That assumption follows from the standard gloss on the existential analysis given above: accessibility holds fixed *facts* about the agent's intrinsic properties and local circumstances, and so every world will be able to access itself. Thus if S actually does φ, then there is an accessible world where she does φ.

Success follows from the conditional analysis given the logical principle *And-to-If* which says that a conditional with a true antecedent and a true consequent is true (that is, $\rho \wedge \chi \vDash \rho > \chi$). Despite substantial controversy about conditionals, most accept *And-to-If.* Success follows from *And-to-If* on the conditional analysis: given that S tries to do φ and succeeds, it follows by *And-to-If* that S does φ if she tries, and hence, on the conditional analysis, that S is able to do φ.

In a moment we'll see reason to doubt Success. Let me first give a simple argument in its favor from judgments about incoherence: it's very strange to assert that someone *might* try to do something and succeed, while denying that they *can* do it. Hence, even if you doubt that Susie is able to hit the bullseye, as long as you think she might, it is strange to outright deny that she can:

(4) #Susie might hit the bullseye, but she can't hit the bullseye.

This is very naturally explained by Success (though see §6.2 for some subtleties), since as long as you leave it open that Susie will try to hit the bullseye and succeed, it follows by Success that you leave it open that she can hit the bullseye.

[4] The name is sometimes used for the stronger principle that $\varphi(S) \vDash A_s\varphi$. But this latter principle is not validated by the conditional analysis, so to keep the dialectic simple, I'll focus on the weaker principle in the text; I don't think anything turns on this choice, since the arguments from control tell against both principles, and the arguments I give speaks in favor of both principles.

3 Control

Still, many doubt the validity of Success, and view its validation by the existential and conditional analyses as reasons to reject those theories. The worry stems from the intuition that being able to φ requires having φ somehow *under your control*. But Success says that if you try to φ and succeed, then you are able to φ—even if φ-ing was out of your control, a matter of sheer luck.

Concretely, return to Susie. She will wildly throw a dart at a dartboard, trying to hit the bullseye. Suppose that, improbably, she hits the bullseye, just by luck, a random fluke. In that case, according to Success, she is *able* to hit the bullseye, since she tried to hit the bullseye and succeeded. But many have argued that this cannot be right: just flukily hitting a bullseye does not suffice to be *able to* hit the bullseye. To be able to hit the bullseye, you have to do something more than just flukily hit it: the action of hitting the bullseye must somehow be *in your control*. And so Success is not valid.

The intuition that ability requires control, and thus that Success is invalid, is widespread. Here are a few representative quotes from the recent literature:[5]

- 'control is central to ability. . . the claim that I can surf that wave is strong—it says that surfing that wave is within my control' (Boylan, 2020)
- 'ability ascriptions [are] a kind of *hypothetical guarantee*. When someone says 'John can go swimming this evening', she is informing her interlocutors that going swimming this evening is, in a certain sense, within John's control' (Mandelkern et al., 2017)
- 'accidental, or *fluky*, success is insufficient for ascriptions of ability' (Fusco, 2020)
- 'ability requires control' (Loets and Zakkou, 2022)
- 'the can of ability is essentially an existential quantifier over a set of available actions, and an action is available to an agent just in case he or she is deemed to have sufficient understanding of how to achieve the relevant outcome. . . [that is,] a good chance at succeeding in performing the relevant action, should he or she try to do it' (Willer, 2021).

Before saying more about the debate between Success vs. control, it is worth noting a dialectical subtlety. It is standard to distinguish between *general* ability ascriptions, which ascribe to someone the ability to do a *type* of action, versus *specific* ability ascriptions, which ascribe to someone the ability to do some specific, time-indexed action. So, for instance, we

[5] See Kikkert 2022 for extensive discussion of the relevant kind of control. Loets and Zakkou (2022), while arguing that the control intuition has merit, are primarily concerned with bringing out a conflict between control and claims about the duals of agentive modals, rather than arguing for one resolution of that conflict.

might accept that Susie was able to hit a bullseye at 3 pm (in such and such place, on such and such day)—she had the specific ability to *hit the bullseye at 3 pm*—while denying that she is *generally* able to *hit bullseyes*. Everyone, I think, will agree that Success is false for general ability ascriptions: just doing something once obviously doesn't show that you can do it *in general*. So the interesting debate, as far as Success vs. control, concerns specific ability ascriptions, and I will focus on these throughout: I will always have specific abilities in mind when I talk about ability, unless otherwise noted.

The literature on ability furnishes a number of proposals which aim to capture the control intuition, and thus invalidate Success. To give a better sense of the control intuition, I'll give a brief informal summary of some recent proposals. First, we can encode control in the *truth-conditions* of ability ascriptions. This is the path taken by Fusco (2020). Following the tradition of Brown 1988; Horty and Belnap 1995, Fusco treats ability ascriptions as complexes of existential and necessity operators: $A_s\varphi$ means that it is historically possible that S's powers *necessitate* $\varphi(S)$. It is natural to think of *S's powers necessitating* $\varphi(S)$ as one gloss on what it means for S to have φ in her control. Then we can gloss Fusco's view this way: $A_s\varphi$ is true just in case there is a historical possibility where S does φ *in a controlled way*.

A second approach encodes control via a threshold. For instance, Willer (2021) suggests that for S to be able to φ is to have 'a good chance at succeeding in performing the relevant action, should he or she try to do it' (cf. Jaster 2020). Once again, this kind of threshold can be seen as a way of cashing out the control intuition: $A_s\varphi$ is true only if φ is in the agent's control to a sufficient degree, in the sense that trying to do φ results in performing φ enough of the time.

The third, and I think most promising, approach encodes control as a *presupposition* of ability ascriptions. This idea is inspired by a recent proposal of Santorio (2022). On Santorio's account, $A_s\varphi$ says that it is possible that S does φ, and presupposes that S has a state which is causally sufficient for φ in any accessible possibility where S in fact does φ. Causal sufficiency is, in turn, a necessity-like notion, spelled out in terms of causal models. While Santorio doesn't gloss causal sufficiency in terms of control, it is natural to see it (like Fusco's notion of necessitation) as a generalization of the notion of control, since, among other things, it is intended to rule out ability ascriptions in cases like that of the haphazard but lucky dart player.

The argument I will give below targets all these implementations of the control intuition; I have gone through them all to give a sense of different ways the control intuition might be cashed out. To situate these views in the context of our running example: I take it that hitting the bullseye is not in Susie's control, since it is enormously unlikely that she will hit it when she tries; if she does hit it, we would describe her hitting it as a matter of luck and chance. (If an action like this were taken to be in Susie's control, then the control intuition wouldn't have any bite at all. At least some of the authors just cited discuss cases like that of Susie, explicitly noting that in a case like this, the relevant condition is not met.) So all these views predict that it is *clearly not true* that Susie is able to hit the bullseye. By contrast with all these views, since it is *possible* that Susie will hit the bullseye, it follows, given Success (and the closure of possibility under logical entailment) that it is also possible that she is able to hit the bullseye.

In addition to eliciting intuitions that favor control, the literature contains various direct attacks on Success. The locus classicus is Kenny 1976.[6] Consider this case, slightly modified from Kenny's presentation. Alice shuffles a standard deck of cards and places it face down. At 3 pm she will draw a card at random from the deck. Consider (6-a) and (6-b):

(6) a. Alice can draw a red card at 3 pm.
  b. Alice can draw a black card at 3 pm.

According to Kenny 1976, both (6-a) and (6-b) are false. Since Alice doesn't have *control* over the color of the card she draws, she is neither able to draw a red card nor able to draw a black card. But note that Alice *will* draw a red card or a black card. Let's add, moreover, that she is trying to draw a red card and trying to draw a black card (suppose she needs either a hearts or a club to win the game). But then, given Success, it follows that either she can draw a red card, or she can draw a black card. Reasoning by cases: either (i) she will try to draw a red card, and succeed; or (ii) she will try to draw a black card, and succeed; hence by Success, either (i) she can draw a red card, or (ii) she can draw a black card.

For another case in a similar vein, consider this variant from Boylan 2020:

> I am a fairly bad dart player. I regularly hit the bottom half when I aim for the top, and vice versa. But I never miss the board entirely. I am about to take a shot. I am skilled enough to know I will hit the board; so I know the following:
>
> (7) I will hit the top half of the board on this throw or I will hit the bottom half of the board on this throw.
>
> But it does not seem that I should ascribe myself either of the following abilities here:
>
> (8) a. I can hit the top on this throw.

[6] Another argument, from Santorio 2022, comes from conditionals like (5):

(5) If Susie hits the target out of sheer luck on this throw, then Susie is able to hit the target on this throw.

Santorio argues that a conditional like (5) does not seem like a logical truth, but it should if Success were valid. (5) is certainly an odd sentence to produce, but so are many other logical truths, and it's not clear exactly what intuitions here are tracking; the balance of evidence against the control intuition makes me somewhat inclined to think that (5) just is a logical truth, after all.

b. I can hit the bottom on this throw.

Even their disjunction does not seem true.

Once again, it seems like doing φ in an uncontrolled, fluky way does not suffice to be *able* to do φ.

Not only are there arguments for control and against Success, but Santorio (2022) has shown how to undermine the argument for Success from incoherence. Recall that argument went like this: if you leave it open that S will φ, then you can't simply deny that S can φ, even if φ-ing is clearly not in S's control. Success explains that nicely. But a presuppositional approach along the lines of Santorio's also has an explanation of that fact. On his account, if you leave it open that S will φ, but φ-ing is not in S's control, then the control presupposition of $A_s\varphi$ will not be satisfied, and so neither $A_s\varphi$ *nor its negation* will be assertable, since presuppositions project through negation. So, in addition to having an account that makes sense of the control intuition, Santorio has an ingenious vitiation of most obvious argument for Success.

4 Chancy abilities

I feel the pull of the argument that ability requires control, and thus that Success is false. However, I've become convinced that ability does not require control: on the contrary, I think that success, no matter how fluky, entails ability. What convinced me was probability judgments about ability ascriptions, which I think provide strong evidence for Success and against the control intuition. In the rest of the paper, I will lay out that argument. I will begin in this section by eliciting intuitions about chancy abilities in a number of cases, and arguing that these really are intuitions about abilities (rather than about the ability claim's complement). In the following sections I will explore their ramifications.

4.1 Cases

Recall that Susie is a haphazard dart player, tossing darts at the board; she can barely hit the dartboard, let alone the bullseye. But every once in a while, she gets a bullseye, just by chance; say this happens once every thousand throws or so. So the probability that she'll hit a bullseye on any particular dart throw is about .1%. (It doesn't matter exactly what sense of probability we have in mind in these cases. I will move freely between talk of chance and probability, and between talking about the probability of sentences and of the corresponding propositions.) Now suppose that when the clock strikes 3 pm, Susie will throw the dart at the dartboard. Consider the question in (9):

(9) What's the chance that Susie will be able to hit a bullseye at 3 pm?

The most natural answer to (9), I maintain, is .1%: that is, the probability that Susie will be *able* to hit a bullseye is just the probability that Susie *will* hit a bullseye, *conditional* on trying to.

Suppose next that Ludwig is going to an audition. Consider (10):

(10) What's the probability that Ludwig can play the Hammerklavier sonata through at the audition without making an error?

Suppose your credence that Ludwig *will* play the sonata through without making an error, conditional on him trying, is .2. Then, intuitively, your answer to (10) should be .2.

Or consider Ginger, who is standing on the basketball court. Suppose that, conditional on taking the shot, she is 10% likely to make a basket (she's taken hundreds of free throws over the last few weeks, and made 10% of them). What's the chance of (11)?

(11) Ginger can make this shot.

Intuitively, 10%. Again, this matches the chance of Ginger making the shot, conditional on trying.

For a final case, consider Benjy, an otherwise very good cat who really doesn't like getting into his carrier for vet visits. Based on past experience, I have about a 20% rate of success at getting him into his carrier. Given that, what is the chance of (12)?

(12) I can get Benjy into his carrier for this vet visit.

Intuitively, 20%. Again, this matches the chance of success conditional on trying.

These are my intuitions, anyway, and match my informal polling.

4.2 Targeting the prejacent?

Before turning to explore the upshots of these judgments, let me address an obvious worry about them: namely, that the probability judgments are simply targeting the prejacent of the modal, and somehow ignoring the modal flavor altogether (I will use *prejacent* loosely here: the prejacent of $A_s\varphi$ on my usage is $\varphi(S)$). That is, you might worry that, even though I have asked about the probability that S *can* φ, your intuitions are simply reflecting the probability that S *will* φ. So, for example, in the case of Susie, while the chance that Susie will be able to hit a bullseye at 3 pm is intuitively .1%, this is also intuitively the chance that she *will* hit a bullseye at 3 pm, since, as the case is set up, we are sure Susie will try. So a natural error theory about this judgment is that we are simply be answering a different question than the one being asked, namely, about the probability that Susie *will* hit a bullseye, not that she will be *able* to. If correct, this objection would rob these judgments of any theoretical interest, so it is worth addressing it before turning to the upshots of these cases.

This worry can be put to rest by considering variants on the cases above where you're not sure whether the agent will try to do the action or not. So, for instance, suppose you're not sure whether Susie will take a shot at 3 pm; say there is a 50% chance she will, and a 50% chance she won't. Given that, the chance that Susie *will* hit a bullseye at 3 pm is .05%: it's the probability that she both tries to make a shot and succeeds, which in this case is plausibly .05%. But the chance that she *can* hit a bullseye intuitively remains .1%: that is, it remains the chance that she will hit a bullseye, *conditional on trying to*.

Similar moves can be made in other cases. Make it an open question whether Ludwig will be asked to play the Hammerklavier or something else. This lowers the probability that Ludwig *will* play the Hammerklavier without an error. But intuitively it doesn't change judgments about whether he *can* do so, which intuitively remains 20%—the probability that he will play the Hammerklavier without an error, conditional on trying to.

Next, suppose that a basketball coach is considering which of five players to make a free throw after a technical foul. She asks the assistant coach, 'What's the chance that Ginger can make this shot?' Given that Ginger makes 10% of similar shots that she takes, the answer is intuitively 10%. But this is not the chance that Ginger *will* make the shot, which is much lower, since Ginger might not be substituted in.

Finally, we can imagine that it is chancy whether I'll take Benjy or his sister Little Cow to the vet: I'll try to take whichever cat I see first. So the chance that I actually get Benjy into his carrier is much lower than 20%. But the chance that I *can* get him into his carrier is still 20%.

I think this is enough to show that these judgments are not just targeting the prejacent, since judgments about the probability of the prejacents in these cases clearly diverge from judgments about the probabilities of the abilities in question.

Still, there is an awkwardness in these cases, which is that they involve the modal 'will', which is apt to get modally subordinated readings Klecha 2013; Cariani and Santorio 2018. So, if I ask you what the chance is that Ginger will make the shot, the most obvious judgment is that it is 2%: she has a 20% chance of being selected (let's suppose), and a 10% chance of making the shot, conditional on trying. But another judgment is available: if we're in the midst of figuring out who to substitute into the game and I ask you what the chance is that Ginger will make the shot, it is possible (though somewhat less natural) to interpret me as asking what the chance is that she will make the shot *if I substitute her in*, and get a reading where the answer is 10%.

It's not clear exactly how to turn this observation into a way of saving the 'targeting the prejacent' response, but it would be cleaner to avoid this issue altogether by looking at past-oriented ability ascriptions. Here, however, we immediately run into an issue, namely *actuality entailments*: past-oriented ability ascriptions like (13) have a reading on which they are intuitively just equivalent to their prejacents, as Bhatt (1999) observed:

(13) Ginger was able to make the shot.

On this reading, the modal flavor seems to disappear. I have avoided this issue so far by working with future-oriented examples, but then we run into the issue of modal subordination.

We can get around this issue by building on another observation of Bhatt's: that the actuality reading is only *one* reading of past-oriented ability ascriptions: in languages that distinguish perfective and imperfective marking, the actuality reading only arises in the perfective, so actuality readings are the result of ability modals plus perfective aspect; the modal meaning survives when the ability modal is in imperfective aspect. That means that we can get around this issue by looking at minimal pairs of ability ascriptions and their prejacents in languages that mark aspect, like Hindi. Hence compare (14) (a past imperfective ability claim) with (15) (its prejacent):

(14) Ginger kal ek free throw kar saktī thī.
Ginger yesterday a free throw make able was-impfv
Ginger was able to make a free throw yesterday.

(15) Ginger kal ek free throw kī thī.
Ginger yesterday a free throw make past
Ginger made a free throw yesterday.

If probability judgments were targeting the prejacent, then these should be judged to have the same probability. But they are not: given the set-up above, my informant tells me that (15) has probability 2%, while (14) has probability 20%. Judgments about the corresponding sentences in French, which also distinguishes imperfective from perfective aspect, are the same.[7]

So the judgments elicited in this section are about abilities, *not* about their prejacents, and hence cannot be dismissed with an error theory on which subjects are simply targeting the agentive modal's prejacent and ignoring the modal itself.

5 Control vs. Success

I'll now turn to the significance of the judgments I've elicited about chancy abilities. I'll start with a methodological claim, then go on to argue that these judgments suggest that Success is valid after all, and that the control intuition is wrong.

My methodological claim is simply that these judgments are important. Just as in other parts of semantics, most prominently the theory of conditionals, judgments about probabilities

[7] Thanks to Nilanjan Das and Raphaël Turcotte for judgments.

can play an important role—along with judgments about truth and inference—in motivating and evaluating semantic theories. Of course, caution is needed: probability judgments cannot always be taken at face value, since humans make systematic errors in reasoning with probabilities. However, this does not distinguish probability judgments from judgments about truth and inference, the stock-in-trade of semantic data (see Phillips and Mandelkern 2020 for recent discussion). And when probability judgments *are* the result of a systematic fallacy, as in the case of the base-rate fallacy, they are usually *systematically corrigible* with more careful reflection or tutelage. But I see no evidence that probability judgments about abilities are like this.

In any case, everyone should agree that the probability judgments I have elicited are systematic enough that they must be *explained*. That explanation could come in the form of an error theory, but the most obvious error theory, addressed in the last subsection, doesn't work, and I can't see any other obvious contenders. So instead I will aim to explain these judgments by arguing for a semantic theory that make sense of them directly.

5.1 Against control

I'll now argue that these judgments show that ability does not require control, and instead suggest that Success is valid.

For concreteness, I'll focus on the first case, involving Susie, who is haphazardly chucking darts at the dartboard; the points I make with this case can easily be made with other cases. Recall that Susie has a .1% chance of getting a bullseye on any given throw, and hence there is intuitively a .1% chance that she *can* hit the bullseye at 3 pm.

If ability required control, then what would be the probability of (16)?

(16) Susie will be able to hit a bullseye at 3 pm.

It depends on how exactly control is incorporated. Above I briefly surveyed three approaches; I'll go through their verdicts about (16) in turn. On the first approach, due to Fusco 2020, $A_s\varphi$ is true just in case there is some historically possible world where S φ's in a controlled way. In the present case, however, we are *sure* that Susie does not have control over hitting a bullseye: plausibly, there is *no* historically possible world where Susie hits the bullseye *in a controlled way*.[8] Any possibility where she hits the bullseye is one where she does so flukily. So, on a view like Fusco's, the probability of (16) is 0: there's *no* chance that Susie will be able to hit a bullseye at 3 pm, because there's no chance that her powers necessitate hitting a bullseye. But this is the wrong verdict. There's *some* chance that Susie will be able to hit a

[8]If you think that a .1% chance of success is enough for control, lower the rate as much as you like; for any ϵ, no matter how small, if Susie has an ϵ chance of hitting a bullseye when she tries, then, intuitively, she has at least an ϵ chance of being able to a hit a bullseye.

bullseye; not a lot, but some. And that's enough to show that ability doesn't require control in the straightforward, truth-conditional way that Fusco's accounts encodes.

To be sure, sometimes we can assert things that we aren't sure of, if we're very confident of them. I can tell you that my car is parked two blocks away, even if I have only, say, .99 credence in that. Likewise, I might permissible tell you that Susie won't be able to hit a bullseye, since I have very high credence—.999—that she can't hit it. But an account like Fusco's predicts not only that 'Susie won't be able to hit the dartboard' is assertable, but also that you should be *sure* it's true, that is, you should think it has probability 1; and it is that latter prediction which seems fatal to me.

The second approach we surveyed above, suggested by Willer (2021)'s informal remarks, was that to be able to do φ, S must have a a good chance at φ-ing if she tries. But Susie doesn't have that (of course, there is flexibility in what counts as a good enough chance in this definition; but, again, if the notion is supposed to do any work, this is a threshold that someone like Susie clearly doesn't pass). So, again, the prediction is that we should be sure that (16) is false, because we are sure that the corresponding threshold judgment in (17) is false.

(17) There is a good chance that Susie will hit the dartboard at 3 pm if she tries.

Recall that on the last approach, inspired by Santorio 2022, $A_s\varphi$ says that $\varphi(S)$ is possible, and also *presupposes* that in any accessible possibility where S does φ, she does in a controlled way φ. Susie doesn't meet this condition, since the circumstantial possibilities where she hits a bullseye are ones where she does so haphazardly. So on this approach, we should be sure that (16) has a false presupposition. It is not entirely clear what the upshots of this view are for probability judgments. But usually when we are sure that a sentence has a false presupposition and we are asked to judge its probability, there are two options: one is to find the question ill-formed; the other is to effectively ignore the presupposition—to "locally accommodate" it, treating it as if it were part of the asserted content—and get a judgment of 0. So, for instance, consider (18), where the prejacent of the chance question presupposes that Liam has missed a rent payment in the past:

(18) Liam has never missed a rent payment. What's the chance that he'll miss another one?

This just seems like a bad question; if forced to come to a judgment about it, it seems like the only thing you can think is that there is no chance that he'll miss another one, since he hasn't missed one in the past. Things are similar for (19), where the prejacent presupposes that Alyssa once drank:

(19) Alyssa has never touched alcohol. What's the chance that she quit drinking?

In light of judgments like this, a presuppositional view of 'able' predicts that a question like 'What is the chance that Susie will be able to hit a bullseye at 3 pm?' will strike us as ill-formed, since we know it has a false presupposition; and that, if forced to form a judgment, the only accessible judgment will be 0.

It is worth considering one further possibility, which is that we are sometimes able to simply ignore presuppositions in forming probability judgments; some presuppositions are easier to ignore than others, as Sudo (2012) emphasized, and maybe the presupposition of 'able' is like that. But this wouldn't help get the correct judgment, because if we set aside the presupposition of 'able', then we should be *sure* that Susie is able to hit a bullseye, since we are sure there is a circumstantially accessible world where she hits a bullseye, and that is all the ability ascription requires for truth once we ignore its presupposition. We still won't get the observed judgment of .1%.

While there might be other ways of connecting ability ascriptions to control (or some control-like notion) beyond the three I have sketched here, I suspect that all of them will run aground on intuitions about chancy abilities. If ability requires control, then we can be sure that one of the requirements for (16) to be true is not met, and hence that it does not have any chance at all of being true. But (16) clearly does have some chance of being true.

5.2 In favor of Success

Not only do probability judgments tell against the control intuition; they speak in favor of its antipode, Success.

Recall that Success is the inference from $try(S, \varphi) \wedge \varphi(S)$ to $A_s\varphi$. One striking fact about the probability judgments elicited in §4 is this: the probability of $A_s\varphi$ is always at least as great as the probability of $try(S, \varphi) \wedge \varphi(S)$. That is, these judgments suggest that the probability that you're able to do something can't be less than the probability that you will try to do it and succeed. Hence, for instance, the probability that Susie will be *able* to hit a bullseye is at least as great as the probability that she will hit a bullseye.

In general, it is a law of probability that, when ρ entails χ, the probability of χ is always at least as great as the probability of ρ. So the fact that the probability of $A_s\varphi$ is always at least as great as the probability of $try(S, \varphi) \wedge \varphi(S)$ would be neatly explained if Success were valid. This observation provides a powerful, albeit indirect, new argument in favor of Success.

5.3 Kenny's argument

Probability judgments also provide a way to defuse Kenny's argument for the control intuition, and against Success. Recall the case. Alice shuffles a deck of cards and places it face down. At

3 pm she will draw a card at random from the deck. She needs a hearts or a club to win the game. Whatever card she draws will be either red or black, so if success entails ability, either (6-a) or (6-b) is true:

(6-a) Alice can draw a red card at 3 pm.

(6-b) Alice can draw a black card at 3 pm.

But according to Kenny, these are both intuitively false, since she lacks control over the action in question.

Now what's clearly right in Kenny's case is that you shouldn't *say* either (6-a) or (6-b). But, of course, just because something isn't assertable, it doesn't follow that it's false. In particular, the problem with (6-a) and (6-b) might simply be that we don't know which one is true. Probability judgments let us distinguish these two statuses. If Kenny is right that (6-a) and (6-b) are false because Alice lacks the requisite control, then both have probability zero. But that is clearly wrong. What is the probability of (6-a)? Well, it is just the probability that Alice will draw a red card at 3 pm, conditional on trying to, which is just .5. Likewise for (6-b).

Similar points apply to Boylan's case. So probability judgments defuse the Kenny/Boylan objection to Success.

In sum, probability judgments show that ability does not require control; suggest that Success is valid, after all; and provides a way to defuse Kenny's influential arguments against Success.

6 Conditional analyses

In this final section, I will argue that probability judgments do even more: they help us choose between the two accounts described at the outset, the existential and conditional analyses. Insofar as probability judgments support Success, both these accounts fare well. But probability judgments in fact favor a conditional analysis over an existential analysis. I'll first explain how probability judgments support a simple form of conditional analysis. Then I'll address some obstacles to adopting the simplest form of conditional analysis and argue that probability judgments still support whatever more sophisticated account replaces it, and indeed help address a serious objection to conditional analyses.

6.1 In favor of the conditional analysis

Recall that Hume's conditional analysis says that ⌜S is able to φ⌝ has the same truth-conditions as ⌜If S tries to φ, S does φ⌝. So the conditional analysis predicts that the following are pairwise equivalent:

(20) a. Susie will be able to hit a bullseye at 3 pm.
b. If Susie tries to hit a bullseye at 3 pm, she'll succeed.

(21) a. Ludwig can play the Hammerklavier sonata through without making an error.
b. If Ludwig tries to play the Hammerklavier sonata through without making an error, he'll succeed.

(22) a. Ginger will be able to make this shot.
b. If Ginger tries to make this shot, she'll succeed.

(23) a. I can get Benjy into his carrier for this vet visit.
b. If I try to get Benjy into his carrier for this vet visit, I'll succeed.

And, strikingly, probability judgments support these equivalences: in each case, the pairs appear to have the same probabilities. So, for instance, (20-a) has probability .1%, as we have seen; and this is intuitively *also* the probability of the conditional in (20-b).

So probability judgments appear to support the pairwise equivalences that follow from the conditional analysis. They also tell against the existential analysis. What's the probability that there is *some world* compatible with Susie's circumstances and properties where she hits the bullseye? Intuitively, very high: we are sure, or nearly sure, that it's *possible* for Susie to hit the bullseye, given her circumstances and intrinsic properties. But this is not the probability that she will be able to his the bullseye, which is instead .1%—the probability that she will hit the bullseye if she tries.

We can say more about the patterns of probability judgment elicited above. In all the cases we looked at, the probability of $A_s\varphi$ was equal to the probability of $\varphi(S)$, conditional on $try(S, \varphi)$. So, for instance, if you think there is a 20% chance that Ginger will attempt a free throw, and a 10% chance that she will make the free throw conditional on trying, then the chance that she is *able* to make the free throw is equal to 10%—that is, the chance that she will succeed, conditional on trying.

The relation between conditional probabilities and probabilities of conditionals is famously complicated (see Khoo and Santorio 2018 for an excellent recent overview). But nearly everyone agrees that, for simple conditionals (conditionals which don't embed modals or conditionals), there is a prominent default interpretation on which their probabilities are equal to the conditional probability of their consequent conditional on their antecedent. Hence to give just one example, it seems that the probability of (24) equals the probability of heads conditional on the coin being flipped.

(24) If I flip the coin, it will land heads.

Given this generalization, it follows that the conditionals of the conditional analysis, with the form $try(S, \varphi) > \varphi(S)$, will *also* have (as a default matter) the probability of $\varphi(S)$ conditional on $try(S, \varphi)$. In other words, given the well-established connection between conditionals and conditional probabilities, the conditional analysis can explain the present generalization about chancy abilities: that the chance of $A_s\varphi$ is the chance of $\varphi(S)$ conditional on $try(S, \varphi)$.

A natural thing to ask for at this point is a semantic model for the probabilities of conditionals which, together with some form of the conditional analysis, would yield all the judgments we've seen so far. Easy: just pick a model for the probabilities of conditionals which yields the generalization above—there are a number of viable contenders (e.g. van Fraassen 1976; McGee 1989; Bradley 2012; Kaufmann 2009; Bacon 2015; Goldstein and Santorio 2021; Khoo 2022)—and combine it with the conditional analysis. I won't go into this in any detail here, since these models are complex, and there is no need to commit to one of them for present purposes. (There are, of course, other analyses of the conditional on which it encodes a kind of necessity, and hence which do *not* vindicate a connection between conditionals and conditional probabilities. Adopting the conditional analysis of ability in concert with one of those analyses of conditionals would hence not do anything to make sense of probability judgments about abilities. So probability judgments favor the conditional analysis only if we spell out the latter with a conditional operator that can account for probability judgments about conditionals. But that's plausibly something we need to do in any case.)

6.2 Problems for the conditional analysis

There is a hiccup, however, which is that the conditional analysis in the form I've presented it has serious problems. However, as I will explain in the rest of this section, views in the spirit of the conditional analysis are still tenable; and so, as I'll explain, I think we should still take probability judgments to favor some form of conditional analysis, if not the simple version of the conditional analysis we have been working with so far. What follows gets more into the weeds of modal semantics, and won't affect the big picture upshots of the paper, so some readers may wish to call it a day here.

The conditional analysis faces an array of related problems (see Mandelkern et al. 2017 for an overview). I'll briefly summarize two key issues. First, the conditional analysis, although it validates Success, doesn't quite account for the incoherence data motivating success, which, recall, came from sentences like (25):

(25) #Susie might hit the bullseye, but she can't hit the bullseye.

In 2, I said that Success provides a natural explanation of the incoherence of (25), modulo some subtleties. Here is the subtlety: if you think that Susie might hit the bullseye *by trying not to hit the bullseye*, then Success alone, and the conditional analysis alone, cannot explain the incoherence of (25). That is, suppose you are sure that, if Susie tries to hit the bullseye, she'll fail. But you think, for whatever reason, that if she tries *not* to hit the bullseye, then she might actually hit the bullseye. Then, according to the conditional analysis, you should be sure that she can't hit the bullseye, while also being sure that she might hit the bullseye.

In other cases, the conditional analysis appears too strong. For instance, consider (26), based on Vranas 2010:[9]

(26) David can breathe normally for the next five minutes.

(26) is intuitively true—David is normal, breathing-wise—but if David *tries* to breathe normally, he'll focus on breathing normally and then will fail to do so; so the conditional analysis predicts that (26) is false.

These problems show that the conditional analysis in its standard form cannot be quite right. But Mandelkern et al. (2017), developing an idea of Chisholm 1964's, argue that the spirit of the conditional analysis can be saved with a relatively minor revision: namely, by putting the conditional in question underneath an existential quantifier over a contextually supplied set of actions. In particular, their view—the *act conditional analysis*, or *ACA*—says that S is able to φ just in case there is *some* contextually salient action ψ such that, if S tries to do ψ, she does φ. More carefully, where $\mathcal{A}_{c,s}$ is a set of actions which are in some sense contextually available to S in context c:

$$\textit{Act Conditional Analysis}\text{: } [\![A_s\varphi]\!]^{c,w}=1 \text{ iff } \exists\rho\in\mathcal{A}_{c,s} : [\![try(S,\rho) > \varphi(S)]\!]^{c,w}=1$$

There is much to say about the motivation for a view like this; for the sake of brevity, let me just highlight how this approach can solve the two problems just sketched, taking them in reverse order. How can David breath normally? Well, by trying to do something else, say, play piano for a few minutes. So the ACA rightly predicts there is a true reading of 'David can breathe normally', since there is *something* such that if he tries to do it, he breathes normally. By letting the action the agent tries to do come free from the modal's prejacent, the ACA can account for cases where you are able to do something by trying to do something else.

And by existentially quantifying over actions, the ACA gets a strong enough meaning for negated ability ascriptions to account for incoherence data like (26). If Susie can't hit the bullseye, then there is *nothing* such that, if she tries to do it, she will hit the bullseye; in other words, you should be sure that she won't hit the bullseye, accounting for the incoherence of (25).[10]

So the extra quantificational resources of the ACA let it avoid the problems we just surveyed for the simple version of the conditional analysis (hence the *simple conditional analysis*, or *SCA*).[11] Of course, there is much more to say about the pros and cons of the ACA. My goal

[9] Compare Austin (1961)'s golfer.

[10] You might still worry about cases where someone might do φ, but only by inaction: anything that she tries will ensure that she won't do φ. I'm not sure if there are any cases like this, though.

[11] Thanks to an anonymous reviewer for suggesting this helpful terminology.

here is not to defend it extensively, but rather to argue that the problems for the SCA can be avoided with a view that still captures much of the spirit behind it, and, in particular, that the ACA, or some view like it, can still account for the probability judgments brought out here, in the same way as the SCA. The simplest point here is that the ACA coincides with the SCA whenever (i) φ is contextually available and (ii) none of the other contextually available actions are such that, if S tries to do them, she'll do φ. These assumptions are plausible in many cases (**?** describe them as natural defaults), and so the ACA agrees with the SCA in many cases—including, plausibly, the cases we've looked at here.

With this in hand, we can restate the upshot of our discussion more carefully. Probability judgments about ability ascriptions support an analysis of ability on which the probability of $A_s\varphi$ is, *as a default matter*, the probability of $\varphi(S)$ conditional on $try(S, \varphi)$. Hence they support any analysis that agrees with the SCA as a default matter. The ACA is one such theory; others may prefer some other variant on the conditional analysis, but everyone must account for the central generalization here.

6.3 Chancy abilities and the ACA

Still, while defending the ACA in particular is not my principal aim here, it is worth very briefly exploring whether probability judgments still support ACA when it *diverges* from the SCA. If yes, then that provides a new source of evidence for the ACA; if not, then my broader point in this section still stands, namely, that we need some theory of ability which, as a default matter, closely ties the truth of ⌜S is able to φ⌝ to the truth of ⌜If S tries to φ, S succeeds⌝.

In some cases, the divergences between the ACA and the SCA seem to clearly favor the ACA, from the point of view of probabilities. What's the chance that David can breathe normally right now? Around one: it's the chance that there's *something* such that if he tries to do it, he'll breathe normally, not the chance that if he tries to breathe normally, he will—in line with the ACA, contra the SCA.

In other cases, the ACA introduces an extra degree of context-sensitivity, which, again, seems evidenced in probability judgments. Suppose Louise is considering buying a ticket for a lottery. When you buy a ticket, you choose a number between 1 and 1,000. Then a winning number is chosen at random; anyone holding a ticket with that number wins. So what's the chance that Louise can win the lottery? It seems like there are two judgments available here:

(a) One in a thousand: that's the chance that Louise will win, conditional on trying, i.e., buying a ticket.

(b) One: after all, all that Louise has to do to win is buy a ticket with the winning number, but she can certainly do *that*, since she can buy any ticket.

The SCA predicts only the first judgment of $\frac{1}{1000}$. By contrast, the ACA predicts both judgments are possible, depending on the context. The first judgment will be obtained by treating the contextually available actions as {*buy a lottery ticket*, *don't buy a lottery ticket*}, since the probability that one of these actions is such that, if Louise tries to do it, she wins the lottery, is $\frac{1}{1000}$. The second judgment is obtained by taking a more fine-grained view of Louise's options, along the lines {*don't buy a ticket*, *buy ticket 1*, *buy ticket 2*, ... *buy ticket 1000*}: it is certain that one of these actions is such that, if Louise tries to do it, she'll win the lottery.

So far, then, probability judgments seem to speak in favor of the ACA in cases where it diverges from the SCA. In some other cases, things are less clear, as Ben Holguín and an anonymous reviewer have both pointed out. Suppose that Ann is handed a fair deck of cards. What is the chance she will be able to draw a clubs from the deck without looking? Intuitively, $\frac{1}{4}$: it's the chance that she will draw a clubs, conditional on trying. That is the verdict of both the SCA and of the ACA, assuming that the available actions are {*draw a card*, *don't draw a card*}. But now suppose that Louise is instead handed *two* fair decks, Deck 1 and Deck 2. What is the chance that she can draw a clubs from one of the decks without looking? Intuitively, it is still $\frac{1}{4}$: it is the chance that she will draw a clubs, conditional on trying. This is the verdict of the SCA, and it is the verdict of the ACA on a coarse-grained resolution of the contextually available actions as something like {*draw a card from one deck*, *don't draw a card from either deck*}. But the ACA also predicts another judgment, when we fine-grain the available actions to {*draw a card from Deck 1*, *draw a card from Deck 2*, *don't draw a card from either deck*}. In this case, the ACA predicts that the chance that Ann will be able to draw a clubs is slightly higher than $\frac{1}{4}$: it is the chance that one of these actions is such that, if she tries to do it, she draws a club: in other words, the chance that either (i) if she tries to draw a card from Deck 1, she draws a club; or (ii) if she tries to draw a card from Deck 2, she draws a club; or (iii) if she tries to not draw a card, she draws a club. The third disjunct presumably has probability 0, so ignore it. Disjuncts (i) and (ii) have probability $\frac{1}{4}$ each. And, importantly, they are plausibly independent of each other—which means, by the laws of probability, that their disjunction has probability $\frac{1}{4} + \frac{1}{4} - (\frac{1}{4} * \frac{1}{4}) = \frac{7}{16}$. However, it seems hard to get a reading on which there is a $\frac{7}{16}$ chance that Ann will be able to draw a clubs.

This may be a serious problem for the ACA. But I am not sure. The ACA says that, on the fine-grained resolution of practically available actions, the chance that Ann will be able to draw a clubs is the chance that one of the decks is such that, if Ann tries to draw a card from it, she'll draw a clubs from it. What is the chance of that? Well, we have just seen an argument that it is $\frac{7}{16}$. But informal polling suggests that many have the intuition that it is in fact $\frac{1}{4}$. This is either because people are bad at calculating the probabilities of disjoined (or quantified) conditionals, or because disjunction/quantification interacts with conditionals in strange ways. In fact, there is independent evidence that one or both of these things is true: people have very strange judgments about the probabilities of disjoined conditionals (see Santorio and Wellwood (2023) for experimental evidence to that effect). So I am not sure that the ACA's predictions are wrong here. It is, I think, plausible that the chance Ann can draw a clubs is the chance that one of the decks is such that if Ann draws a card from it, she draws clubs. The oddness seems to arise, not from this purported equivalence, but rather from people's judgments about the chance that one of the decks is such that if Ann draws a card from it, she draws clubs. There is a puzzle here, but I am inclined to think it is a puzzle about how we evaluate the probabilities of quantified or disjoined conditionals, rather than for the ACA.

6.4 Non-agential ability ascriptions

In this final section, I'll argue that probability judgments not only provide support for a form of conditional analysis but also help answer an important objection to any broadly conditional analysis.[12] Conditional analyses essentially involve the notion of trying.However, there are cases where we apparently ascribe abilities to non-agents, as in (27) (from Irene Heim, attributed to Maria Bittner) or (28):

(27) This elevator is able to carry three thousand pounds.

(28) This black hole is able to absorb that galaxy.

I will argue here that probability judgments suggest that these cases are actually very different: (27) is an ability ascription, where the trying is done by a covert, generic agent, while (28) is a circumstantial modal. Neither is a problem for a conditional analysis.

Start with (27). Suppose that I tell you that, conditional on loading the elevator with three thousand pounds of cargo, there is a 30% chance that the cord will snap, and a 70% chance that the elevator will work as normal. In that case, what's the probability of (27)? Intuitively, 70%. That is, credences in this case still seem to track conditional probabilities, in exactly the way that the conditional analysis suggests: the conditional probability of the elevator succeeding at carrying three thousand pounds, if you try to make it carry three thousand pounds. Of course, it's not the elevator that's trying. But (generic) *you* can try loading the elevator, and that seems to be what (27) is talking about: what happens *if you try*. That suggests an analysis of sentences like (27) along the lines of a conditional analysis, but with a covert generic agent.[13]

Now turn to (28). Appealing to a covert generic agent obviously won't help here: the sentence clearly has nothing at all to do with agents, generic or otherwise, trying to do things. So this is, on the face of it, a harder case for any form of the conditional analysis.

[12]Thanks to [redacted] for suggesting this line of argument.

[13]This is something Mandelkern et al. (2017) suggest about cases like this.

But now note that this case also seems totally unlike all the cases of ability ascriptions we've looked at so far vis-à-vis probabilities. In all the cases we've looked at, there is a very salient probability judgment about the ability ascription in question which matches a salient *conditional* probability judgment. But this doesn't seem to be true in this case. Suppose that the black hole has a 70% chance of swallowing the galaxy conditional on such-and-such physical processes taking place in the galaxy, and no chance otherwise. I don't see any way of filling in 'such-and-such' that makes it intuitive for your credence in (28) to be 70%.

What *should* your credence in (28) be? Well, it seems like it should just track your credence that there is *some* possibility that the black hole absorbs the galaxy. As always, there is context-sensitivity here, but (28) seems to just be saying that it is consistent with the black hole and galaxy's physical properties, and the laws of physics, that the former absorb the latter. Suppose for instance that you are sure that physical law and the black hole and galaxy's structure are consistent with the black hole absorbing the galaxy. Then it seems you should be sure of (28). Suppose instead that we are *unsure* what kind of black hole it is; your credence that it is big enough to absorb the galaxy is 70%. Then intuitively your credence in (28) should be 70%. Conditional probabilities don't seem to essentially enter the picture. Instead, the meaning of 'able' in (28) really seems to be that of an existential modal—the diamond of modal logic.

Given that modal words are generally polysemous (in English, as well as many other languages), it would be unsurprising to find that 'able' has readings where it is used as a circumstantial modal, in addition to those where it is used as an agentive modal. Adverting to polysemy like this would be theoretically unsatisfying if we were just using it to explain away counterexamples to a conditional analysis of the agentive reading. But probability judgments seem to provide clear evidence in favor of the hypothesis that there is something very different going on in (28) than in the cases we have looked at: these judgments suggest that, when 'able' is used to talk about scenarios where no agent is (or could be) involved, it is interpreted as an existential modal, along the lines of standard analyses of circumstantial modals, while when it is used to talk about agency, it is interpreted along the lines of the conditional analysis.

7 Conclusion

Many have thought that ability requires control, so that for Susie to be able to hit a bullseye, hitting bullseyes must be somehow in her control. But probability judgments about ability ascriptions in cases like this show that this thought, intuitive as it is, is wrong: ability is compatible with lack of control. In particular, success, no matter how fluky, suffices for ability. Moreover, probability judgments support some form of conditional analysis of ability, since, as a default matter, the probability that S can φ appears equal to the probability that S will φ, conditional on trying to.

Of course, all this is compatible with there being indirect connections between ability and control. Being in a position to *assert* or *know* a future-oriented ability ascription may only be possible if you know that the agent has control over the relevant action. Likewise, *generic* ability ascriptions—the kind of thing we express with 'Susie is generally able to hit bullseyes', or 'Susie has the ability to hit a bullseye'—very plausibly involve control. But probability judgments show that these connections between ability and control are not encoded in the truth-conditions (or presuppositions) of ability ascriptions. Ability does not entail control; success does entail ability.

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