

What's your opinion?

Negation and 'weak' attitude verbs

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Abstract Attitude verbs like 'believe' and 'want' exhibit neg-raising: an ascription of the form *a doesn't believe that p* tends to convey that *a* disbelieves – i.e., believes the negation of – *p*. In “Belief is Weak”, Hawthorne et al. (2016) observe that neg-raising does not occur with verbs like 'know' or 'need'. According to them, an ascription of the form *a believes that p* is true just in case *a* is in a belief state that makes *p* more likely than not, and so – excepting cases of complete indifference – *a* will either believe *p* or disbelieve *p*. I expand and revise this explanation: so-called “weak” attitude verbs are used in ascriptions of an opinion about some subject matter *S* – a kind of selection from among the elements of *S* – and these ascriptions are themselves responsive to conversational topics that presuppose that the subject of the ascription has an opinion about *S*. “Strong” attitude verbs denote more direct relationships between subject and world.

1 Introduction

Some attitude verbs display *neg-raising*, such that an ascription of the form:

(1) *a* doesn't *F* that *p*

will be interpreted to express the stronger:

(2) *a* *F*'s that not-*p*

This is apparent with doxastic attitude verbs like ‘think’ or ‘believe’:

- (3) Frank doesn’t think John is smart.
↪ Frank thinks John is not smart.
- (4) Maya doesn’t believe Hiroko is coming.
↪ Maya believes Hiroko is not coming.
- (5) Ann doesn’t think Arkady survived.
↪ Ann thinks Arkady is dead.

In “Belief is Weak” (Hawthorne et al. 2016), Hawthorne, Rothschild, and Spectre observe that neg-raising can occur in ascriptions involving a variety of “weak” attitude verbs like ‘want’, ‘like’, ‘advise’, in addition to ‘believe’, and ‘think’. However, the “stronger” verbs ‘know’, ‘need’, ‘love’, and ‘command’ do not give rise to neg-raising (p. 1399).

Hawthorne et al. offer a “partial explanation” (p. 1401) of why it is that neg-raising occurs in belief-ascriptions involving weak doxastic attitude verbs like ‘believe’ and ‘think’, but not stronger attitude verbs like ‘know’. Their explanation turns on a controversial proposal about belief: an ascription of the form *a believes that p* is true just in case *a* is in a belief state that makes *p* likely.¹

The aim of this paper is twofold: first, I seek to expand and revise the partial explanation of neg-raising for doxastic attitude verbs proposed by Hawthorne, Rothschild, and Spectre. Then I show how this explanation can be extended to

¹ Their paper has given rise to a subfield-sized ‘weak belief’ literature, but see Dorst & Mandelkern forthcoming, Mandelkern & Dorst forthcoming, Rothschild 2020 for exemplary recent examples; see Moss 2019, Williamson forthcoming for some criticism.

account for the neg-raising behavior of other weak attitude verbs. On my proposal, the controversial semantic assumption about ‘believe’ can – but need not – be dropped.

2 Belief and Disbelief

As Horn (1978) notes – following an observation of Quine’s (1960) – sentences involving negation above a weak doxastic attitude verb are typically interpreted as ascriptions of disbelief. In each of (3-5) the default assumption is that the subject of the ascription disbelieves (believes the negation of) the proposition denoted by the complement clause. The same is true for first-person and first-person-plural reports:

(6) I don’t think *Tim* is the best Replacements album.

(7) We don’t believe the emissions are a threat to this ecosystem.

And also for the following sorts of question and answer pairs:

(8) a. Do you think dinner is ready?

b. No.

The explanation that I offer in this paper is intended to provide philosophical motivation for existing accounts of neg-raising in linguistics. Specifically, accounts on which neg-raising is explained by an excluded middle inference, from $[a \text{ believes } p] \vee [a \text{ believes not-}p]$, and the (asserted) proposition $\neg[a \text{ believes } p]$, to the proposition $[a \text{ believes not-}p]$.² Therefore I begin (2.1) with a brief overview of theories of neg-raising in linguistics.

² See Bartsch 1973, Gajewski 2005, 2007, Heim 2000, among others.

2.1 Neg-Raising in Linguistics

Early syntactic accounts of neg-raising held that a negation in the complement clause can be ‘raised’ to the matrix clause in the surface grammar. Sentences of the form *a doesn’t F that p* are syntactically ambiguous between (9) and (10):

(9) *a* does NEG *F* [that *p*]

(10) *a* does *F* [NEG that *p*]

But (10) gets transformed at the level of surface grammar (Collins & Postal 2014):

(11) *a* does NEG₁ *F* [<NEG₁> that *p*]

Evidence for the syntactic account of neg-raising includes the behavior of neg-raising predicates with NPIs (negative polarity items) like ‘until’ (Lakoff 1969).³ Compare (12) and (13):

(12) #I don’t know he will arrive until tomorrow.

(13) I don’t think he will arrive until tomorrow.

It can also appear relatively arbitrary which lexical items give rise to neg-raising, and in many cases lexical items with very similar meanings in one language – or even the same meaning across different languages – will have different neg-raising behavior (though Horn & Bayer (1984) give this a pragmatic explanation, which I’ll return to later).

But a problem for syntactic accounts arises when we consider sentences like,

³ See Gajewski 2007 for discussion.

(14) Anne doesn't think Arkady survived, but Maia does.

This appears to be an instance of VP-ellipsis, where some verb phrase in the second conjunct that is parallel to a semantically identical verb phrase is phonologically deleted (Crowley 2019). (14) is elliptical for something like,

(15) Anne doesn't think Arkady survived, but Maia does [think Arkady survived].

Thus the negation can't be in the subordinate clause in the logical form of the first conjunct. I'm going to assume that neg-raising is at least partially explained by a semantic or pragmatic mechanism.⁴

Semantic and pragmatic accounts treat neg-raising as an *inferential* phenomenon. In other words, there is some kind of inference from the assertion that it isn't the case that *a* believes *p* to the conclusion that *a* disbelieves *p* (believes its negation). The standard sort of inferential account treats neg-raising as the result of an opinionatedness assumption that gives rise to an excluded middle inference.⁵ The basic idea

⁴ Strictly speaking, everything I say in this paper is compatible with a syntactic account of neg-raising (see footnote 16). See Crowley 2019 for a recent argument that syntactic accounts are incomplete without pragmatic elaboration. Crowley argues that neg-raising has to be explained by syntactic neg movement, but that this neg movement only occurs in the presence of an excluded middle. According to Crowley, the neg movement is "conditioned by the presence of an excluded middle" (1).

⁵ I say 'assumption' rather than 'presupposition' or 'implicature' because these accounts all disagree about precisely what the nature of this assumption is. Bartsch (1973), for instance, takes it to be a semantic presupposition, whereas Horn & Bayer (1984) take it to be a conventionally regulated conversational implicature. Gajewski (2005, 2007) holds that it is a kind of pragmatic presupposition that gets triggered by specific lexical items (see also Heim 2000). It is not my aim in this paper to adjudicate between these views, instead I offer some possible philosophical motivation for neg-raising as arising from a presumption of opinionatedness.

is that we have a prima facie commitment to claims of the form: either *a* believes *p* or disbelieves *p* (or at the very least this is triggered by the use of certain attitude verbs). Given a background assumption that *a* either believes or disbelieves *p*, the assertion that *a* fails to believe *p* licenses the inference that *a* disbelieves *p*.

2.2 Neg-Raising, Belief, and Opinions

Explanations of neg-raising in terms of an excluded middle inference seem to depend on an assumption that when an individual *a* fails to believe something *p*, then *a* disbelieves *p* (believes not-*p*). As Horn & Bayer (1984) put it, that there is a “natural pragmatic assumption that the subject *x* has given some thought to the truth of the proposition *p* and come to some conclusion about it” (398). Horn (1978) holds that this results from a ‘slim functional difference’ between belief that *p* and belief in its negation. By analogy, consider *likelihood*. In general, if something is not likely, then it is unlikely (likely not). There is thus a ‘slim functional difference’ between something *p* being likely and its negation being likely.

If this is true about belief, it might serve as some clue as to how neg-raised readings can be avoided or cancelled: to embed belief ascriptions in contexts or constructions – or contrast them with sentences – that make indifference regarding *p* clear. But neg-raising is difficult to avoid, even in conversational contexts that appear designed to force an alternative reading. The sentences in (16), for instance, strikes me as awkward:⁶

⁶ Rory Harder has suggested to me that the awkwardness here is due to the speaker making a pedantic inference with casual language; he notes that *I have no opinion about whether Sax is coming; therefore, I do not think he is.* sounds more natural than the constructions in (16). I agree, but I think this is more or less what one would expect on a pragmatic account of neg-raising, in conjunction with a plausible view about the discourse function of terms like ‘therefore’: to indicate a logical relation

- (16) a. ?I have no opinion about whether Sax is coming, so I don't think he is.
b. ?I don't believe what the president said; I don't know what he said.
c. ?I have no opinion about what you said, so I don't believe you.

And even in contrived contexts, where it is common ground that the subject of an ascription is indifferent between prospects, neg-raising can occur. We are at a horse race, and according to the evidence provided by our bookie the horses Shadowfax, Montpellier, and Gerald each have a 1 in 3 chance of winning. After reviewing the bookie's findings, I assert:

- (17) I don't think Gerald will win.

But it is hard to understand (17) as an expression of indifference *relative to* the common ground of information. It appears to take for granted that the speaker *has some opinion* about whether Gerald will win, and moreover it could be taken to imply that they have additional evidence about the race (as this may be the only way to make sense of such an opinion). That is, belief-ascriptions generally appear to be made under something like a presupposition that the subject of the ascription is opinionated with regard to the subject matter, and even in an informational context where no opinion is evidently warranted, this presupposition is easily accommodated.

What such cases suggest to me is that neg-raising it is not just a product of our *default* stance towards individuals and their belief states. If it were, we should expect such a default assumption to be overridden by an avowed lack of opinion on the part

between clauses relative to a subject matter (see [Mandelkern 2019](#) for a related claim about 'must'). Some of these may also sound a bit better when the clauses are 'flipped': *I don't think Sax is coming, in fact I have no opinion about it* sounds better than (16a), though this may be because it sounds like a retraction (consider: *I don't think Sax is coming anymore*).

of the subject (as in (16)) or by a context in which it is common ground that the evidence does not favor believing any of a relevant set of propositions. Intuitively, a lack of belief in p does not make it the case that one believes not- p . This is only the case if one can antecedently assume that someone has an opinion about something, but then the claim is question-begging. Instead, something that happens in making the belief-ascription is giving rise to the neg-raised readings. Rather than the result of some default assumption arising from a general presumption of opinionatedness, we might think of neg-raised readings as arising in very particular linguistic contexts.

3 A Theory of Neg-Raising for ‘Believe’ and ‘Think’

3.1 The Weak-Belief Account of Neg-Raising

The explanation of neg-raising for ‘believe’ given by Hawthorne et al. (2016) depends on their account of belief, and its relation to the notion of something being likely: to believe that p just is to be in a belief state that makes p likely, where p is likely just in case it is (sufficiently) probable among salient alternatives.⁷ Here, then, is the (partial) explanation for neg-raising that they give:

[Viewing] thinking p as no stronger than thinking p likely yields a partial explanation of why neg-raising occurs with ‘think’ and ‘believe’. When p and not- p are relevant alternatives, the only case

⁷ They’re actually committed to something a bit weaker, I think, which is just that belief that p can be no more epistemically demanding than the belief that p is more likely than the relevant alternatives, but there’s nothing that turns on this. Theirs is perhaps best understood as a theory of what makes attitude ascriptions involving the verbs ‘believe’ and ‘think’ true. The relationship between such an account and what we might call a theory of belief is controversial. I will speak (as they do) as though these are interchangeable.

in which you don't think either p or not- p is likely are ones where you think they have roughly even chances (or have, in any case, no opinion one way or the other). Thus, as long as one assumes that you have any view at all about p versus not- p , not thinking p will entail thinking not- p . Since indifference between p and not- p cannot be guaranteed we do not have a full explanation of neg-raising, but we at least can explain why it is a plausible inference in many cases (p. 1401).

And here's Rothschild in a more recent paper:

The point is that if 'believe' is strong, then its negation is not going to be close to not believing. But if 'believe' has a weak reading (close to believing likely) than we get the slim functional difference Horn describes as characterizing the class of neg-raisers generally (Rothschild 2020: 1349).

Their explanation turns on the notion of indifference. There are contexts in which an individual a – the subject of an attitude ascription – has an opinion about p , where this just means they either believe or disbelieve it: $[a \text{ believes } p] \vee [a \text{ believes not-}p]$. So if $\neg[a \text{ believes } p]$, then $[a \text{ believes not-}p]$. The weak belief thesis does appear to make such contexts more common: after all, if believing p is no stronger than being in a belief state that makes p more likely than the relevant alternatives, then failing to believe p apparently just is being in a belief state that makes some relevant alternative (not- p) more likely than p . But this turns on a crucial, and controversial, assumption about the sorts of things we are in a position to take ordinary agents to have opinions about. It's true that if an agent's belief state assigns probabilities to

every proposition, we will be in a position to claim that such an agent meets the epistemic conditions for belief in every proposition or its negation. It's possibly also the case that agents whose belief states are fully settled in this way are useful theoretical posits; but are such assumptions part of our ordinary folk conception?

Hawthorne et al. (2016) acknowledge that in order for the weak belief thesis to account for neg-raising, we have to assume that the subject of an ascription has an opinion about the proposition in question. Building on their view requires explaining where, exactly, such an assumption comes from. Two questions, then: the first is why, in the context of attitude ascriptions, we default to the assumption that the subject has some opinion about whether p . The second is why even when we can reasonably assume that an individual has no opinion – they say as much, or their evidence makes all salient alternatives equally likely, for instance – neg-raised readings are still the default, as demonstrated in (16) and (17).

One explanation connects the default interpretation to a default general assumption about rational agents. Specifically, an assumption about some feature of agents that makes it plausible – or even mandates – that if someone doesn't believe something p , they must believe not- p . We might posit some psychological principle that agents are (or else that we consistently assume them to be) opinionated. That is, there is some nomological fact concerning believers (for any individual a and any proposition p , a should have an opinion about p) or interpreters (for any individuals i , a and any proposition p , i should take a to have an opinion about p).

The examples in (16) and (17) suggest that such a default assumption of opinionatedness will not be *sufficient* to handle our judgments about neg raising. But moreover, there are many issues about which it ought to be assumed that no one has

any opinion. For instance, whether there are an even number of stars in the universe, or what Shakespeare ate for lunch on his thirtieth birthday.

On the other hand, the presupposition that individuals are opinionated *is* – I think – appropriate to certain contexts. Further, these are the very contexts in which attitude ascriptions involving ‘believe’ and ‘think’ are felicitous (in other words, such ascriptions link us to this presupposition).

3.2 Subject Matter and Opinion

There are contexts where the default assumption is that someone has an opinion. I’m going to introduce these contexts by appeal to the notion of conversational subject matter (Roberts 1996, Yablo 2014). Discourse can be thought of as organized around topics, or subject matters, with particular discourse contributions interpreted in response to the conversational subject matter they address. And the basic idea is that belief ascriptions – even those that occur under negation – are by default interpreted as responsive to a particular *kind* of conversational subject matter: namely, one that concerns the subject of the ascription’s opinion about the foregoing conversational topic. If we’re talking about cheese then an assertion like,

(18) Michel hates mimolette.

indirectly relates to the topic at hand, (cheese) through the topic of Michel’s opinion.

Ascriptions of attitudes are sensitive to certain conversational topics, or subject matters. And further, these topics involve a presupposition connecting an individual’s lack of belief in *p* with a belief in not-*p*. Consider the following question:

(19) How do you get to school?

A question like (19) makes the topic of conversation: *How the addressee gets to school* (ignoring alternative interpretations of the question, e.g., as a request for advice). In a conversation, there's a great deal of information participants mutually take for granted, or presupposed. One of the things we can think of as taken for granted is something about the organizational structure of a conversation; its direction. And conversations with the same information getting presupposed can have different sorts of directional structure.

So, for instance, think about a conversation that's organized around a question like: How do you get to school? And answering the question will be a narrowing to certain subsets of the possibilities that our information state leaves open, specifically whatever subsets count as answers. We can think of such topics as generating a partition on the information state that characterizes the common ground (i.e., set of possibility states left open by everything mutually assumed by the participants) of the conversation. Each partition element is a set of worlds, a narrowing to which, via an assertoric commitment, would count as answering the question. In other words, these partition elements represent our conversational options.

And so if the question is 'How do you get to school?', the appropriate sorts of answers are going to be things like: 'I take the bus' or 'I bike' or 'Usually I take the bus, but sometimes I bike'. But when we adopt the topic of what you do to get to school as our conversational aim, we take something for granted: namely, that there *is some way* you get to school. So if the common ground included worlds in which you didn't go to school – which it might have – then this is something that we now take for granted is false.⁸ This is borne out by the fact that answers like,

⁸ See Murray 2014 for a way of modeling these presuppositions as not-at-issue updates that eliminate possible conversational states from the record. I assume, following Stalnaker, that presupposition is a

(20) I don't take the bus.⁹

(21) I stopped driving.

(22) Not by bus, and not by bike.

all apparently implicate that there is some other way the speaker gets to school. For instance, if it is common ground in (22) that the speaker's only other option is by walking, then it would be reasonable to take this as an implicature of their utterance. On the other hand,

(23) I don't go to school.

doesn't really address the question so much as change the subject, so to speak.¹⁰ The topic of a question like (19) can be thought of as something like *How the addressee gets to school*, and in adopting such a topic of conversation we take it for granted that there is some way the addressee gets to school (cf: Hoek 2018).

Belief-ascriptions relate to conversational topics: if the topic of conversation is how Nirgal gets to school I can address that topic indirectly by saying something like,

feature of agential activity, and this is why I say that it is the adoption of a topic by participants that generates such a presupposition – nothing turns on this assumption, however.

9 'I don't get to school by taking the bus' is an even more explicit way of making such a presupposition obvious.

10 In fact, I think (23) is naturally read with focus (on the 'don't', 'go' or 'school'), which indicates sensitivity to a different subject matter (Roberts 1996). For instance, *whether* the addressee goes to school, or *where* the addressee goes. We can also note that (23) can be addended with something like 'Hey waitaminute', which suggests that something has been taken for granted by the utterance to which it is responding.

(24) Jackie thinks he takes the bus.

But this is an indirect way of addressing the topic of conversation because the question of how Nirgal gets to school does not partition the space of possibilities along Jackie's thoughts (cf: Murray 2014). Such ascriptions are responsive to questions – i.e., address conversational topics – about the opinions held by the subject of the ascription. Assertions of the form *a believes that p* and *a doesn't believe that p* address the topic: *a's opinion about S*, i.e.,

(25) *What is a's opinion about S?*¹¹

where *S* is a conversational topic that discriminates *p* and not-*p* worlds. A question like (25) makes the topic of conversation: *a's opinion about S*, and the adoption of such a topic by conversational participants presupposes something about *a*: namely, that they have some opinion about *S*.

I propose that belief-ascriptions relate to conversational topics like those raised by (25). An opinion is, strictly speaking, also a relation to a subject matter: to ascribe an opinion to someone is to relate them to a structure on information.¹² An opinion about *p* (that *p* is true, for instance) is an opinion about *Whether p* or *Whether p is the case*. Indirectly, it is an opinion about what is the case, or what Roberts (1996), echoing Stalnaker, calls the 'big question'. Let us say that to have an opinion is

11 There are alternative ways of phrasing or expressing a question with the topic *a's opinion about S*; these might include 'What do you think about S?'.
12 The idea that belief and other attitudes are subject matter-sensitive has received a great deal of recent discussion (see Drucker 2020, Yalcin 2018 for example). Such accounts are not necessarily in tension with representationalist views on which an agent has a belief that *p* just in virtue of instantiating a *p*-denoting representation in something like a language of thought.

to stand in a relation to a subject matter *S* (I will clarify the nature of this relation shortly).

When we talk about a topic, like nuclear war with France (to borrow one of Stalnaker's examples),¹³ we need a way of relating agents to that topic (among other things, we need a way of doing this that allows us to predict and keep track of their behavior, including how they are likely to resolve the topic at issue). My claim is that belief ascriptions serve to specify those relationships, but in giving such a specification they presume – in some sense or other – that there *is* a relationship to be specified.

Merely knowing *whether* someone is related to a subject matter *S* actually tells us a lot: specifically, it tells us whether they're in a position to act on *S*. Continuing with Stalnaker's example, we can note that William III's belief that war with France can be avoided does not entail a belief that *nuclear* war with France can be avoided (see also Yalcin 2018). The fact that William III cannot relate to the subject matter of avoiding nuclear war with France tells us something about the sorts of decisions he is in a position to make. So we might think that it makes little sense to discuss someone's relationship to a topic unless there is a relationship worth discussing – otherwise there is a sense in which they lack agency with respect to that topic.¹⁴

An explanation for neg-raising starts to come into focus: first, as (20)-(22) demonstrate, even when the main verb is under a negation, sentences are sensitive to the subject of a conversation picked out by that verb. Further, an answer to (25), in the form of a belief-ascription, will at least implicate that the subject of the ascription has some opinion. And if that's the case, then we at least get an implicature from

¹³ See Stalnaker 1984.

¹⁴ See Beddor & Goldstein 2023, Hoek 2022 for related claims about the relationship between rational agency and question-sensitivity.

utterances of the form *a doesn't believe that p* to the effect that *a* has some *other* opinion about *p*, namely *a* disbelieves it. Further, it is so obvious that ascriptions of belief are reports on an agent's opinion about some topic that Hawthorne et al. (2016) take belief-talk and opinion-talk to be interchangeable (pp. 1398-99; in the next section we will see why I do not do the same, though I agree with them that belief is just as weak as opinion about the truth).

Focus effects, which I discussed briefly in footnote 10, are important evidence for this claim. For instance, Rory Harder has pointed out to me the following confirming evidence. The questions,

- (26) a. How does Nirgal get to school?
b. What does Nirgal take to school?

which takes for granted that there is some way Nirgal gets to school, can be answered with the sentence in (27) *with neutral focus*:¹⁵

- (27) Nirgal doesn't take the bus to school.

But a variety of similar questions (some of which lack the relevant presupposition of there being some way Nirgal gets to school) can only be answered with the sentence in (27) if the indicated focus is present:¹⁶

- (28) a. Where does Nirgal take the bus?
← Nirgal doesn't take the bus [to school]_F.

¹⁵ This is also the case for more general questions like 'What's up with Nirgal?'.

¹⁶ The example sentences in (28) and (29) come from comments delivered by Rory Harder in response to a presentation of this paper at the 2023 Eastern Division meeting of the American Philosophical Association.

- b. What does Nirgal do with the bus to get to school?
 ← Nirgal doesn't [take]_F the bus to school.
- c. Who takes the bus to school?
 ← [Nirgal]_F doesn't take the bus to school.

We see the exact same pattern with a typical neg-raising sentence:

- (29) a. What does Nirgal think?
 ← Nirgal doesn't think it's going to rain tomorrow.
- b. What does Nirgal think about rain tomorrow?
 ← Nirgal doesn't think it's [going to]_F rain tomorrow.
- c. What does Nirgal think will happen tomorrow?
 ← Nirgal doesn't think it's going to [rain]_F tomorrow.
- d. When does Nirgal think it will rain?
 ← Nirgal doesn't think it's going to rain [tomorrow]_F.
- e. Who thinks it will rain tomorrow?
 ← [Nirgal]_F doesn't think it's going to rain tomorrow.

Further, certain focus markers appear to cancel neg-raising, as in:

- (30) a. Nirgal doesn't [think]_F it's going to rain tomorrow.
- b. [Nirgal]_F doesn't think it's going to rain tomorrow.

All of this suggests that attitude ascriptions – at least when focus is neutral – function to address questions about the subject's opinion.

Why shouldn't we think of genuine indifference – cases where you think it is equally likely that p or not- p – as an opinion? Colloquial uses of 'opinion' appear to

take this reading, after all: I can say that my opinion is that the coin has an equal chance of landing heads or tails. This is an opinion, but it is not an opinion about the right topic. To have the opinion that the coin is equally likely to land heads or tails is to have an opinion about whether the coin is fair, or the nature of probability. But it is to refrain from giving an opinion about *whether the coin will land heads or tails*. If I ask you whether the coin will land heads or tails and you answer ‘It’s equally likely that it will land either’, you have not answered my question (consider that you can addend to your statement ‘therefore I cannot answer that question’ without contradiction).

So to summarize, we can think of attitude ascriptions as responsive to a question about an agent’s opinion. Such questions take it for granted that an agent has an opinion, in the same way that a question about how you get to school presupposes that there is some way you get to school. So, any answer to a question that entails that an agent’s opinion fails to be in one part of the partition will also entail that their opinion resides in another part of the partition.

3.3 Accommodation and the Functional Role of Attitude Ascriptions

This raises a question: why do we still get neg-raised readings in contexts where it can be presumed that the subject has no opinion about p ? Here’s one idea: when we communicate, it’s important that we communicate about things (Yablo 2014). In fact, it may be essential to our understanding of linguistic communication as a rational endeavor that our utterances be sensitive to the topic of inquiry. That topic determines the fineness of grain with which our utterances are understood (Hoek 2018, Yalcin 2018), as well as the information presupposed by them. Thus, even in contexts where it is mutually understood that someone has no opinion about

something, we might suppose that attitude verbs like ‘believes’ deliver the neg-raised reading because the use of those verbs triggers the accommodation of a question about the subject’s opinion.

A reviewer for this journal raises the following puzzle: why exactly does accommodation of a conversational topic like ‘What’s your opinion about S?’ occur in cases where an attitude ascription with a negation in the matrix clause is uttered in response to a *different* question, for which it is an adequate answer? For instance,

- (31) a. *Do you have* any opinion about whether Frank is coming to the party?
b. I don’t think he is.

(31b) partially addresses (31a), but is strictly speaking compatible with either a yes or no answer to (31a). One explanation is that this generates a kind of conversational implicature (Grice 1975). The speaker has provided more information than is necessary if the answer to (31a) is ‘no’ – if the answer is ‘no’, then whether or not the speaker thinks Frank is coming is irrelevant extra information, already contained in the (more informative) ‘no’ answer. Information that the speaker does not think Frank is coming is only relevant given a ‘yes’ answer.

Consider,

- (32) a. Do you have any change?
b. I don’t have any nickels.

To my ear, (32b) implicates that the speaker does have change of some other kind,¹⁷ though it is an implicature that can obviously be cancelled as in,

- (33) I don't have any nickels ...
- a. ... or dimes, quarters, or pennies for that matter!
 - b. ... because I don't have any change at all!

(32b) is entailed by a no-answer, and so if the answer is 'no' then uttering (32b) is useless elaboration (it violates Grice's maxim of Quantity). Likewise, (31b) is entailed by a no-answer to (31a).

Is this what's going on in the case of (31)? One thing we might think, following from the earlier claim that the function of attitude ascriptions is to relate agents to the topic of inquiry via questions about opinions, is that what you're doing when you answer (31a) with (31b) is you're addressing a subquestion of (31a), one that presumes an (affirmative) answer has been given to (31a). This can happen even when the content of your claim is strictly speaking compatible with a different answer to the main question.

For example, imagine if we're waiting for the train to work, and you're curious about the absence of our friend Desmond. You ask,

- (34) Does Desmond go to work?

And I respond,

¹⁷ This effect is heightened when there is focus put on 'nickel', which lexically triggers accommodation of a question like, 'What sorts of coins do you have?', which plausibly presupposes that the addressee has coins of some kind.

(35) Desmond doesn't take the train to work.

What I have said is strictly speaking compatible with a 'no' answer to (34), but it clearly presupposes a 'yes'. This is because the subquestion it addresses is located – so to speak – among the 'yes' answers to your question.

I've been noncommittal about the precise way in which belief-ascriptions relate to these conversational topics.¹⁸ Such topics may be contextual presuppositions of the utterance, as Hoek (2018) appears to argue, or they may be linked by pragmatic principles (Roberts 1996), or even by inference to the best explanation (Buchanan & Schiller forthcoming). In fact, how we spell out this link – between belief-ascriptions and the questions or topics to which they are canonically responsive – will generate different commitments for our theory of the nature of neg-raising (for instance, whether it is a semantic or pragmatic phenomenon, and if the latter, whether it is a kind of implicature or presupposition – see Romoli 2013).¹⁹

There is some evidence, at least, that this relationship is not one of presupposition. Consider, for instance, the (lack of) projection behavior of the presupposition that John is opinionated in:

(36) If John doesn't think that Maia is coming, then we should reschedule.

¹⁸ Though I maintain that the relationship between a conversational topic like *What is a's opinion about S?* and the excluded middle assumption is one of presupposition.

¹⁹ It has been suggested to me by Paolo Santorio that this view can even be extended to a syntactic account of neg-raising. Each attitude verb can be such that a topic partition is built into its lexical semantics.

(36) does not presuppose that John has an opinion about whether Maia is coming.²⁰

I can coherently state:

(37) *He might not have an opinion about it*, but if John doesn't think we should do it, we shouldn't.

But notice that we see the same pattern occur with other question-sensitive constructions:

(38) *He might not be coming*, but if Paul doesn't take the bus, he'll be late.

The conditional in (38) does not project an implication that there is some way Paul gets here, any more than the previous claim projects an implication that there is some opinion John has. In other words; the ascription itself is a canonical answer to a question – the question is what presupposes that the subject of the ascription has an opinion, but the link between the assertion and the question is as of yet unspecified on our theory. This is an issue for a much more substantive discussion about neg-raising.

4 Opinions: Doxastic and Non-Doxastic

In order to extend this explanation of neg-raising to other attitudes, we need to be a bit more precise about opinions. On the view I endorse, to have an opinion about a topic is to make a selection. To paraphrase Drucker's (2020) presentation of this view, just as doing something ϕ may be rational relative to one set of options, and

²⁰ Thanks to Matt Mandelkern for this example. Of course there's a very natural way of reading such an assertion as following up from someone's claim about John's opinion that Maia is not coming.

irrational relative to another, so too is forming a belief that p . Drucker explains the selection of an option in terms of “a process by which a person selects an option from an option set, on the basis of reasons, where the rationality of the choice itself depends directly on how the option set was constituted” (ibid: 32).

This notion of choosing is compatible with a non-voluntaristic approach to belief formation. **The process by which a person selects an option need not be a process under their voluntary control, in order for that selection to be based on a reason.** A selection of an opinion can be thought of as the formation of a relation R between a subject a and an option o , where R holds between a and o in virtue of a being in a particular attitude state (some internal configuration of a), and where o is a member of an option set O , and where a different attitude state (a different internal configuration) of a 's could result in the formation of R between a and o' , for any other member $o' \in O$.

To have an opinion *qua* making a selection is not necessarily to possess a credence distribution that makes one option most likely (though of course this is *one way* of being internally configured such that you bear a relation R – in this case, a relation of being most likely – to a selected option). It may be a matter of something like arbitrary selection or guessing (Holguín forthcoming), for instance, or something significantly more robust (qua Drucker 2020). Thus, it is not quite right to say that simply in virtue of being equally sure that the coin will land heads or tails, one is thereby indifferent to how it will land. There are very different routes one might take to indifference. It might be that I am confident in the 50/50 chance, or it might be that I am so deeply ignorant about coin tosses that I cannot make a choice, rationally.

In fact, the reduction of opinions to probabilities (i.e., belief states) appears to be the wrong way to go: opinions may be formed even in circumstances where they ought not be formed, such as when the chances are equivalent among different options. Opinions cannot be read off of the probabilities one assigns to some partition, though these make having an opinion more or less rational. But opinions should be thought of as choices, and to ask someone's opinion with respect to *S* presupposes that they have made such a choice. A statement like,

(39) Jon doesn't take the bus to school.

relates to a subject matter that takes it for granted that there is some other way that Jon gets to school. This can be recovered from the fact that utterances about how Jon gets to school are typically sensitive to the topic of a conversation. My claim, then, is that a statement like,

(40) Jon doesn't think it's going to rain tomorrow.

relate to a subject matter that takes it for granted that there is some opinion Jon has about the topic: *Whether it will rain tomorrow* or *Tomorrow's weather*. And this can be recovered from the fact that utterances about what Jon thinks are typically sensitive to the question of what Jon's opinion is about this topic.

But now I extend this claim: attitude verbs that are 'weak' all denote opinions. I will focus my attention here on 'wants', 'likes', and 'advises'. First note that all three are naturally used to express opinions. (a-c) can all be used to answer (41):

(41) What is your opinion about ice cream?

a. I always want ice cream.

- b. I like vanilla!
- c. I don't advise we get any.

But why should verbs like 'wants', 'likes', or even 'advise' give rise to neg-raising? Believing not- p is incompatible with believing p , and that is why a failure to believe p , combined with a presupposition that a selection has been made (an opinion formed), implicate you in believing not- p . But desiring not- p is not thought to be incompatible with desiring p . For instance, I might want some carrot cake. If I get carrot cake, then I don't get any salad. Therefore, I want something that is not getting salad – I seem to want not to get salad. On the other hand, I may very well want carrot cake and salad (see [Blumberg & Hawthorne forthcoming](#) for some discussion). This is especially apparent with 'likes': if I like both carrots and carrot cake, that doesn't mean that I both like and dislike carrot cake (or carrots).

All this shows, however, is that we have to be a bit more careful about how our opinions are specified, with respect to a subject matter. Saying that someone likes carrots, or wants vanilla ice cream, may indicate their opinion (an answer to a question) about food, or dessert, but it is ultimately the answer to a question whose subject matter is carrots, or vanilla ice cream, specifically.

5 Strong Attitudes

I'll conclude with some remarks about so-called 'strong' attitudes, with a special emphasis on knowledge. Strong attitude verbs do not exhibit neg-raising:

- (42) I don't know if Arkady is coming.
- (43) Art doesn't need any more java.

(44) I don't command that you stop.

In none of these cases is it implied that the attitude in question is had to a negated complement clause.

It might seem unlikely that anything general could be said, given that not all of these attitudes are stronger than their 'weak' counterparts in the same way. Knowledge is epistemically stronger than belief, and represents a higher justificatory status. But this is not how need is stronger than desire: to need something is not to be more justified in wanting it.²¹ Knowing, however, is at least plausibly a cognitive relation of some kind. How does our conception of knowledge differ from our conception of belief, such that ascriptions of the former but not the latter give rise to the neg-raising phenomenon?

I have said that belief reports describe a subject's opinion about some topic or subject matter. And I have tried to give a general account of opinion in terms of option selection, where selection is defined as a relation between agent and option, governed by the internal configuration of the agent. This relation can be 'flipped' in the sense that a change in the agent's attitude state – a change in the internally-specifiable mental processes that constitute their set of attitudes – can change which option they have selected.

Belief that *p* is at least often helpfully elucidated in terms of belief that *p* rather than *q*: I can say something like,

(45) I think Joe, rather than Jim, will win the election.

(46) I think it's going to rain, rather than not.

²¹ Thanks to Allan Hazlett for pointing this out.

In each of these cases, something about my internal configuration could be changed such that it would be the case that I believe the negation of the proposition I actually believe. But the same cannot be said for cases of knowing. To ascribe knowledge to someone is not to ascribe a relation of *selection* between them and an option. Why not? Why is *a knows that p* not an answer to a question about *a's* opinion concerning some subject matter that discriminates *p* from not-*p* states of affairs?

If we think of opinions in terms of what I called selection, then knowledge lacks one of the features required for something to count as an opinion. Namely, there is no reconfiguration of the internal state of the subject of the ascription that would guarantee that they know some other proposition. If you know that Joe won the election, then it's not strictly speaking true that you know that Joe – rather than Donald – won the election, because no change in your internal cognitive configuration could bring about such knowledge. (Of course the latter, being false, also is not available for knowledge. But this is not strictly speaking the immediate thing that fixes the non-optionality of knowledge.)

So belief, and other weak attitudes, count as opinions because the relation an agent bears to an element in an option space is configured in a certain way on the basis of the agent's state of mind. And knowledge does not count as an opinion because – in spite of the fact that knowledge plausibly relates an agent to a proposition – there is no reconfiguration of the subject's attitude state that would bring them from one selection to another.²² What strong 'attitudes' all have in common is that none of

22 To be sure, it is not inappropriate to think of knowledge-ascriptions as question-responses. If we understand knowledge in terms of knowledge-wh ascriptions, then knowing something might be thought of as knowing the answer to a question (i.e., being faced with a particular question activates discriminatory capacities – Schaffer 2007, Williamson 1990). To borrow an example from Schaffer, we might think of knowledge as question-sensitive insofar as knowing the answer to Q1 is different

them represents a selection in the way defined above. You believe p rather than q ; you want ice cream rather than some other desert; you like – rather than dislike – pineapple. A change in your attitude state would be sufficient to ‘flip’ any of these attitudes: belief that q , desire for anything other than ice cream, dislike of pineapple.

But if you know p , there is not some configuration of your attitude state that would produce knowledge that not- p . Things *in the world* could have been such that you would know not- p , but the point is that there is no change to your attitude state that could produce such knowledge. It might be noted that needs are determined by an agent’s internal configuration. But it is clear that this is not quite the same thing. An agent’s attitude towards something represents an internal configuration – perhaps a choice, perhaps a credence, perhaps a psychofunctional role – and there is no change in attitude that mediates your relationship with something p in a case of need. (It might also be noted that needs are determined by physical or even emotional states of an agent, but that these things – though inside the agent’s head in some sense – are not part of an internalist conception of the rational self.)

from knowing the answer to Q2, in that it is not the case that a knows the answer to Q1 iff a knows the answer to Q2:

Q1: Is there a goldfinch in the garden or a raven?

Q2: Is there a goldfinch in the garden or at the neighbor’s?

This is in spite of the fact that the proposition known – that there is a goldfinch in the garden – is the same in each case. But the agent-level explanation for why this is must make appeal only to facts about the agent’s objective position. To say that a knows whether there is a goldfinch in the garden or a raven, is not just to say something about a , but to implicate something about their relationship to the world. For instance, that whether the actual world is a goldfinch world or a raven world, a is able to act on that fact (perhaps given certain ways of activating their discriminatory capacities are put into motion).

To summarize the proposal: the function of belief talk is to relate us to a conversational topic in a way that explains our capacity for addressing that subject matter. Weak attitude verbs relate us to open prospects – elements of questions for which the answer has not yet been decided. We have a way of doing this because we need a way of keeping track of relevant agents’ possible actions; neg-raising occurs because we want to specify the relationship between an agent and an option, and a failure to instantiate any such relationship typically renders such ascriptions irrelevant. Knowledge ascriptions, on the other hand, allow us to track agents’ relationship with what we take for granted as true. One function of *knowing* is to enable us to (rationally) contribute information to a discourse. Knowledge functions to relate us to a body of discourse itself, not merely elements within it; knowledge and belief may play similar explanatory roles when it comes to rational action, but ‘knows’ and ‘thinks’ relate us to different bodies of information.

6 Concluding Remarks on Other Neg-Raising Predicates

I want to conclude with some remarks about neg-raising predicates that are not obviously opinions. [Collins & Postal \(2014\)](#) give a helpful list of neg-raising predicates in English:

- (47) advisable, advise, appear, believe, choose, expect, feel, feel (like), figure, find, guess (dialectal), imagine, intend, likely, look (like), mean, plan, reckon (dialectal), recommend, seem, sound (like), suggest, suppose, supposed, tend, think, turn out, used to (temporal form), want, wish ([Collins & Postal 2014: 4](#)).

What sorts of upshots does this view have for neg-raising predicates in general? There are basically two options here: the first is to accept a kind of heterogeneity about the features of a conversation that can give rise to neg-raising. Earlier I noted that *not-likely*(p) and *likely*($\neg p$) are functionally equivalent (Horn 1978). So by asserting,

(48) It's not likely that Jeff is coming to the movie.

one asserts that it is *unlikely* Jeff is coming. It's an open question whether this can be the whole story. Other predicates that evidently display a slim functional difference between positive and negative cases do not behave like classic neg-raisers. The predicate 'good' has a slim functional difference evident from the fact that an assertion like,

(49) The movie is not good.

by all accounts asserts that the movie is bad. The same seems to be true of 'happy'. But note the following difference between 'good' / 'happy' and 'likely',

(50) It's not likely that Jeff will come until tomorrow.

(51) #It's not good / I'm not happy that Jeff will come until tomorrow.

The second option is to identify non-opinion neg-raising predicates with some other class of interrogative presuppositions, following the same basic structure as my proposal. For any non-opinion neg-raising predicate, F , there is a canonical discourse question $wh-p$, such that $wh-p$ implies $a F's p \vee a F's not-p$. This makes my story a recipe of sorts for a general story about neg-raising.

As Collins & Postal (2014) note, whether a predicate will exhibit neg-raising almost seems to be an idiosyncratic feature of that predicate.²³ But even very similar predicates can have very different typical uses in discourse. Collins & Postal's (2014) example 'figure out' is a success term but the nearby 'figure' (and its cousin 'reckon') operate more like opinions as in,

- (52) a. I don't reckon he'll show up.
b. I don't figure you're interested.

If we accept a very formal notion of an opinion as a relation between a subject and an option set that is specified by certain functional features and properties, then opinions will abound.

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²³ The most famous examples of this are the fact that the English predicate 'hope' is not a neg-raiser but the German equivalent 'hoffen' is one, and also that the neg-raising behavior of many nearby predicates in English seem to differ, such as 'figure' and 'figure out'.

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