Evidence, Attitudes, and Counterstance Contingency
Toward a Pragmatic Theory of Subjective Meaning

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Abstract This paper focusses on two cross-linguistically robust interpretive and distributional characteristics of subjective predicates that have resisted a comprehensive analysis: subjective predicates introduce experiential evidential requirements, and they differ from objective predicates in their distribution under certain types of propositional attitude verbs. The goal of this paper is to argue that these features can be derived in a uniform way, without introducing special kinds of meanings or interpretive operations for subjective predicates, and within a broadly truth-conditional approach to semantic content, given a view of subjective language as an essentially pragmatic, context-sensitive phenomenon. Specifically, we propose that what renders an issue subjective in discourse is speakers' awareness of *counterstances*: alternative information states that reflect conflicting decisions as to how semantic underdetermination is resolved in context. We show how a characterization of subjective predicates as counterstance contingent expressions not only derives their distributional properties, but also explains why their use comes with distinct evidential requirements.

Keywords subjective meaning · semantic underdetermination · attitude verbs · evidential implications

1 The Plot

Predicates of personal taste such as *tasty* and *fun* carry an evidential aspect: speakers ascribing tastiness or fun typically suggest that they have first-hand knowledge

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of the item or event under consideration, in the sense that they have direct experience of it in an appropriate way. Following an utterance of (1) or (2) with (1a) or (2a), for instance, would likely cause raised eyebrows; if the speaker lacks the relevant first-hand knowledge of how sea urchin tastes or what participation in an event of downhill skiing is like, it would be much more appropriate for her to choose hedged variants such as (1b) or (2b).

(1)   I have never tried sea urchin.
    a.   # It's (not) tasty.
    b.   ✓ I hear it's (not) tasty.
(2)   I have never gone downhill skiing.
    a.   # It's (not) fun.
    b.   ✓ It must (can't) be fun.

This is noteworthy since many other predicates lack a similar evidential component: to wit, a straight assertion that sea urchin is orange does not at all require that the speaker has seen sea urchin for herself; it may express an opinion formed on the basis of testimony. These distinctions are discussed by MacFarlane (2014), Ninan (2014), Pearson (2013), and Muñoz (2019), and are in fact not peculiar to predicates of personal taste, but are also shared by aesthetic predicates such as *beautiful* (see, e.g., Mothersill 1984 and Wollheim 1980). The goal of this paper is to make some progress toward understanding why this is so.

Part of the explanandum here is that the observed evidential aspect carried by predicates of personal taste is not perfectly robust. Hedging, as we have seen, cancels the implication that the speaker has first-hand knowledge of the item under consideration. Similarly, to state that Kim was recently in Tokyo and enjoyed a tasty dish at her favorite izakaya is not for the speaker to suggest that she actually tasted Kim's meal. Such "exocentric" uses of taste predicates are tied to tastes and sensibilities other than the speaker's and thus differ from "autocentric" uses in which the item under consideration is evaluated based on the speaker's own tastes and sensibilities (see Lasersohn 2005). But the former still carry some kind of evidential aspect, since they suggest that the individual whose tastes and sensibilities matter has in fact sampled the dish.

A class of attitude ascriptions that we will refer to as SUBJECTIVE ATTITUDE ASCRIPTIONS are yet another aspect of the picture. Following (3) and (4) with utterances of (3a) or (4a) is clearly marked, while the continuations in (3b) and (4b) are just fine:

(3)   I have never tried sea urchin...
    a.   # ... but I find it tasty.
    b.   ✓ ... but I believe it to be tasty.
(4)   Kim has never tried sea urchin...
    a.   # ... but she finds it tasty.
    b.   ✓ ... but she believes it to be tasty.

One cannot find something tasty without actually having sampled it, but there is nothing strange about believing that something is tasty without having first-hand knowledge of the taste of the item under consideration. As such an account of

the evidential aspect of predicates of personal taste cannot be complete without a discussion of taste ascriptions.

Existing approaches to the previous observations all leave something to be desired, and to get the issue into better view it is helpful to see why. It will not do — without additional maneuvers anyway — to follow Pearson (2013) in simply treating the evidential aspect of predicates of personal taste as a presuppositional affair, the reason being that the former has a different projection pattern from the latter, as Ninan (2014) and Muñoz (2019) detail. For instance, although epistemic *must* is a presupposition "hole" in Karttunen's (1973) sense, so that the presupposition triggered by *stop* in (5a) projects, it blocks the evidential aspect of predicates of personal taste from projecting, as shown by (5b)

(5) a. # Lee has never smoked, but he must have stopped smoking.
     b. ✓ I have never tried sea urchin, but it must be tasty.

So if an utterance of "Sea urchin is tasty" merely presupposed that that speaker has actually tasted the dish, so should an utterance of (5b), which is clearly not the case.[1]

Ninan (2014) aims for a pragmatic explanation of the initial observations. Start with the knowledge norm of assertion defended at length by, for instance, Williamson (1996, 2000): one must assert a sentence ϕ in some context c only if one knows that ϕ is true as used in c. And add to this the following acquaintance principle: whenever a taste predicate is used in an autocentric context — whenever it is used autocentrically — knowing that x is tasty (or that it is not tasty) requires first-hand knowledge of x's taste. It then follows immediately that an utterance of (1a) is problematic: to be in a position to assert that sea urchin is tasty, one must know that sea urchin is tasty, which in turn requires having sampled it — exactly what the second conjunct denies. Since the acquaintance principle does not impose any constraints on hedged autocentric uses of predicates of personal taste — or of their epistemically modalized uses, for that matter — it is also not surprising that utterances of (1b) or of (5b) get a pass.

While the story outlined in the previous paragraph correctly identifies the evidential aspect of predicates of personal taste as a particular type of felicity condition on certain types of speech acts, it leaves some crucial questions unresolved. First and foremost, as Ninan himself observes, the acquaintance principle is itself in need of an explanation. After all, one is evidently able to know that x is tasty in exocentric contexts without having first-hand knowledge of x's taste. If this weren't the case, not only would we be at loss when it comes to explaining why such uses are tied to tastes and sensibilities other than the speaker's, we would be at a loss to account for the felicity of such assertions at all. The question then is *why* knowing the content of "x is tasty" requires first-hand knowledge of x's taste if uttered in an autocentric content, but not if uttered in an exocentric context.

Second, the acquaintance principle does not immediately generalize to address all the data surrounding subjective attitude ascriptions involving *tasty*. It states what it takes to know that x is tasty in autocentric contexts, but does not say what it takes to know that Mary (or oneself) finds x tasty. As such it does not

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[1] Pearson (2013) holds that epistemic *must* overtly signals that the speaker has not tasted the item under consideration. This sounds right but seems to be an articulation of the problem, not a solution.

predict the contrast between occurrences of *tasty* under *find* and *believe*. It is, of course, not unreasonable to claim that one cannot know that S finds x tasty without knowing that S has actually sampled x, and then to add that knowing that S believes x to be tasty comes with no such requirement. But this fact calls as much for an explanation as the one articulated by the original acquaintance principle, and in any case one would hope for a systematic explanation of the data rather than a mere list of basic principles about knowledge.

Our goal in this paper is to provide an account that allows us to better understand the acquaintance principle as an evidential requirement on taste judgments in particular and on "subjective" judgments more generally. To do so, we will let our response to the second explanatory challenge we mentioned — the need for an explanation of why *find*-attributions come with a special experience implication — inform our explanation of the acquaintance principle. In brief, attitude ascriptions involving *find* (or its interesting cousin *consider*) require their complement to be "subjective" in a particular way — a notion we propose to analyze as a sensitivity to distinct discourse alternatives that arise pragmatically from language users' sophisticated awareness of the underdetermination of linguistic practice by (what they take to be) matters of fact. We will show how the semantics of subjective attitude attributions thus understood derives the contrast between *find-* and *believe*-attributions that was highlighted by (3)–(4), and then move on to show how the same explanation can be extended to account for the evidential implications of subjective assertions.

The paper is structured as follows. Section 2 presents the key data involving subjective attitude verbs, and shows why existing accounts are inadequate. In Section 3 we explain and motivate our own analysis in informal terms and show how the framework predicts the complex selectional properties of subjective attitude verbs. Section 4 then provides the formal details and extends the account to handle more complicated types of examples, and section 5 shows how the framework derives the evidential aspects of subjective attitude verbs and unembedded uses of subjective predicates. Section 6 concludes with a discussion of the broader implications of our account for the subjective/objective distinction.

2 Subjective attitude ascriptions

Earlier we suggested that an explanation of the acquaintance principle will flow from an adequate story about the semantics of subjective attitude ascriptions, so let us begin by explaining what such a story should look like. What makes *find*-type subjective attitude verbs notable (across languages) is that they require their complements to be subjective in a particular way (see, e.g., Bouchard 2012; Bylinina 2017, Fleisher 2013; Kennedy 2013; Hirvonen 2014; Reis 2013; Sæbø 2009; Stephenson 2007; Umbach 2016; and Vardomsakaya 2018). Thus (6a) with the experiential adjective *fascinating* is acceptable, but (6b) with *vegetarian* is not, even though this is an expression for which there may be inter-speaker variation as to which criteria are relevant for determining whether the predicate applies.

(6)   a.   ✓ Kim finds Lee fascinating, because he is an expert on oysters.
         b.   # Kim finds Lee vegetarian, because the only animals he eats are oysters.

In this sense, *find* contrasts with the otherwise similar verb *consider*, which can be used with predicates like *vegetarian* (as well as *fascinating*):

(7)   a.   ✓ Kim considers Lee fascinating, because he is an expert on oysters.

      b.   ✓ Kim considers Lee vegetarian, because the only animals he eats are oysters.

At the same time, *consider* is like *find* in rejecting fully objective predicates (Fleisher 2013):

(8)   a.   # Kim finds the sum of two and two greater than four.

      b.   # Kim considers the sum of two and two greater than four.

Intuitively, all the sentences in (6)–(8) imply that it is somehow "up to Kim" whether the predicate in the complement can be truthfully applied to its argument, albeit in slightly different ways, as shown by the contrast between (6b) vs. (7b), which accords with our understanding of the meaning and use of *fascinating* and *vegetarian*, but not *greater than four*. It is in this sense that both *find* and *consider* express subjective attitudes, and it is in this sense that they differ from a "vanilla" doxastic attitude verb like *believe*, which accepts any kind of predicate in its complement:

(9)   a.   ✓ Kim believes that Lee is fascinating, because he is an expert on oysters.

      b.   ✓ Kim believes that Lee is vegetarian, because the only animals he eats are oysters.

      c.   ✓ Kim believes that the sum of two and two is greater than four.

Our immediate goal is to develop a semantics for subjective attitude verbs that captures this intuitive characterization of their difference from plain doxastic attitude verbs, and also captures the finer-grained differences between *find*-type and *consider*-type subjective attitude verbs that make the former more restrictive than the latter. In the remainder of this section, we briefly review the existing analytical landscape.

Subjective attitude verbs have received some attention in the literature, but none of the accounts currently on the market checks all of the analytical and empirical boxes. Stephenson (2007) treats *find* as a doxastic attitude verb that differs from *believe* (and *consider*) in that it imposes an additional direct experience requirement. This explains the contrast between (6a) and (6b) under the assumption that one can directly experience one's fascination with Lee but not his status as vegetarian; the latter can only be determined based on observation or testimony. As Sæbø (2009) observes, however, an analysis of *find* as a doxastic attitude verb with an additional direct experience requirement is not sufficient to explain the constraints it imposes on its complement. For example, under the reasonable assumption that direct experience is involved in an individual's assessment of propositions pertaining to his or her own dietary preferences, the direct experience requirement is satisfied in (10a), which unlike (10b–c) is not good:

(10)   a.   # Lee finds himself vegetarian.

       b.   ✓ Lee considers himself vegetarian.

     c. ✓ Lee believes himself (to be) vegetarian.

It is thus unclear whether Stephenson's constraint can fully explain the data surrounding *find*-attributions. Moreover, our goal is to derive the direct experience requirement rather than stipulate it as a semantic component, and so we will choose a different path.

    Sæbø's (2009) analysis of *find*-type subjective attitude verbs assigns semantic values relative to an index of evaluation (for current purposes, a possible world will do) and lets subjective predicates have an implicit judge argument that may be set by the subject of a *find*-construction:

(11)   a. $[\![\textit{find } \phi]\!]^{c,w} = \lambda x.\, [\![\phi]\!]^{c,w}(x)$

        b. $[\![\textit{fascinating}]\!]^{c,w} = \lambda x \lambda y.\, x$ is fascinating to y at w

        c. $[\![\textit{vegetarian}]\!]^{c,w} = \lambda x.\, x$ is vegetarian at w

This proposal explains the contrast between (10a) and (10b-c) in terms of a of a difference in semantic type. Specifically, $[\![$Lee (is) vegetarian$]\!]^{c,w}$ is of not of the right type to serve as an argument for *find*, while $[\![$Lee (is) fascinating$]\!]^{c,w}$ is.

    A considerable drawback of Sæbø's analysis is that it does not easily generalize to address more fine-grained distinctions between subjective attitude verbs. Consider, for example, adjectives like *dense, heavy* and *light*. These can have either a purely "quantitative" interpretation that characterizes the physical properties of a substance, as in (12a), or a more "qualitative" interpretation, that can be used to describe objects which have no physical properties, as in (12b); when an object can be assessed from either a quantitative or qualitative perspective, as in (12c), both interpretations are possible (Kennedy 2013).

(12)   a. This metal is dense/heavy/light.

        b. This story is dense/heavy/light.

        c. This cake is dense/heavy/light.

When we turn to subjective attitude verbs, we see that these adjectives embed under *find* only when they are interpreted qualitatively. Thus (13a) is unacceptable under *find*, (13b) is fine with under *find*, and (13c) is unambiguously qualitative under *find*; all examples are acceptable under *consider*.

(13)   a. # Kim finds this metal dense/heavy/light.

        b.   Kim finds this story dense/heavy/light.

        c.   Kim finds this cake dense/heavy/light.

(14)   a.   Kim considers this metal dense/heavy/light.

        b.   Kim considers this story dense/heavy/light.

        c.   Kim considers this cake dense/heavy/light.

While there is clearly some kind of meaning distinction between the quantitative and qualitative senses of adjectives like *dense, heavy* and *light* (and indeed this kind of polysemy appears to be quite productive), there is no obvious type-theoretic reflection of this difference: both senses are gradable, for example, and both have the same basic syntactic distribution, with the one exception of embeddability under *find*. So while *find* and *consider* are evidently sensitive to different ways

that a predicate can be "subjective," there is no independent evidence that this difference corresponds to a difference in semantic type.

More recently, Muñoz (2019) provides an analysis of *consider* that is similar to the one we present below, and argues for a treatment of *find* that is in some ways a hybrid of the Stephenson and Sæbø analyses. Like Stephenson, he takes the meaning of *find* to to be sensitive to the experiences of the individual denoted by its subject, and like Sæbø he argues that *find* fixes the meaning of the prejacent relative to this individual. Specifically, a *find* report entails that the subject's perceptual evidence entails the truth of the hyperintension of the prejacent at a model anchored to the subject. The unacceptability of examples like (10a) is then accounted for by an additional presupposition that no individual other than the subject can have perceptual evidence of the same sort, i.e. that entails the truth of the hyperintension of the prejacent at a model anchored to *the subject*. This is the case for predicates with experiential meanings, but not the case for non-experiential predicates. Muñoz's analysis has similar empirical coverage to ours, but draws a sharper line between *consider* and *find* than we believe to be justified. (See footnote 5 and the discussion of "Neg-raising" in Section 5.1). At the same time, this account links the acceptability of a predicate under *find* to experiential semantics in a way that may turn out to be too strong (see Vardomsakaya 2018).

3 Counterstance contingency

Our analysis of subjective attitude verbs, first articulated in Kennedy and Willer 2016 and further refined here, is closest in spirit to proposals developed by Coppock (2018) and Bouchard (2012). Coppock replaces possible worlds with "outlooks," which are refinements of worlds that settle not only matters of fact but also matters of opinion, and then lets all predicates — including predicates of personal taste — have ordinary extensions relative to these refined points of evaluation. Since opinions differ, a world will allow for different refinements and thus correspond to multiple outlooks, and it makes good sense to call a predicate "discretionary" if its extension varies across the outlooks corresponding to a single world. (Objective predicates, in contrast, will at best vary in their extensions across worlds.) A proposition is discretionary just in case its truth-value varies across the outlooks corresponding to a single world. Coppock's proposal for Swedish *tycka* — which patterns with English *find* in many ways — is that it presupposes that its complement is discretionary. A similar proposal for *find* is articulated by Bouchard (2012) when he suggests that it carries a "subjective contingency presupposition:" keeping all the non-subjective facts constant, it must be possible to judge the complement clause true, and it must be possible to judge it false.

Like Coppock and Bouchard, we suggest that what makes subjective attitudes special is that they carry a contingency presupposition. However, our proposal is specifically designed to account for the fine-grained differences between *find*- and *consider*-type subjective attitude verbs. There is, for instance, a distinct sense in which *vegetarian* is a discretionary predicate — indeed, it lives happily under the scope of *consider* — but as we have seen, it is not discretionary "enough" to embed felicitously under *find*. We will develop an account of the notion of contingency at play here that makes sense of exactly this observation.

Another distinguishing feature of our analysis is that it does not try to locate the distinction between subjective and objective predicates exclusively in the lexicon. Take, for instance, the difference between (15a) and (15b):

(15)   a.   ✓ Kim considers Crimea part of Russia.
       b.   # Kim considers Siberia part of Russia.

The intuitive explanation of the contrast is that the sovereignty over Crimea is disputed, hence the use of *consider* in (15a) seems appropriate, while Siberia being part of Russia would count as an objective fact, hence the use of *consider* in (15b) is odd. But this is not a matter of semantics; it is simply a matter of what background information the discourse context provides or can be accommodated. We thus suggest that the kind of contingency that licenses embeddability under subjective attitude verbs is pragmatically generated.

Specifically, our key proposal is that the contingency that licenses embeddability under subjective attitude verbs arises from language users' sophisticated awareness that (what they take to be) matters of fact only partly determine what we say and think. In all of the following examples, replacing *believe* with *consider* intuitively signals that (according to the attributer anyway) the formation of the attitude under consideration must have involved a leap from the facts:

(16)   a.   Kim believes herself to be Russian.
       b.   Kim considers herself Russian.
(17)   a.   Kim believes the glass to be full.
       b.   Kim considers the glass full.
(18)   a.   The ancient Greeks believed stars to be holes in the sky.
       b.   The ancient Greeks considered stars holes in the sky.
(19)   a.   Mathematicians believe Goldbach's conjecture to be unprovable.
       b.   Mathematicians consider Goldbach's conjecture unprovable.

For example, (16b) would be appropriate in a context in which Kim is neither a Russian citizen nor of Russian extraction, as far as she knows, but has formed the opinion that she is Russian based on her identification with the main character in Tolstoy's *Anna Karenina*. (17b) intuitively signals that whether the glass is full, at least as far as the speaker is concerned, a matter of some legitimate controversy. And so on. Plain belief attributions, to be clear, do not exclude that adopting the attitude under consideration is to take a leap from the facts; but it is the use of *consider* which explicitly signals that the attributor takes the attitude to be subjective in this specific way.

The more concrete proposal is that the attribution of a belief using *consider* presupposes the contingency of the belief across a set of contextually provided doxastic alternatives, all of which agree with the attributee on the salient facts of the matter, but disagree on matters of linguistic practice. We label these contextually provided doxastic alternatives COUNTERSTANCES and the contingency across them COUNTERSTANCE CONTINGENCY. Since the presence or absence of counterstances is a pragmatically determined feature of the discourse context, so is the distinction between "objective" and "subjective" predicates, at least insofar as this distinction answers to the embeddability under subjective attitude verbs.

Existential presuppositions have a tendency to be accommodated — whenever this is possible and within certain limits — and there is no reason to think that counterstance presuppositions form an exception to the rule. This explains why uses of *consider* imply a proposal to treat it as common ground that the attributee's belief under consideration involves a leap from the facts. But of course certain features about a conversation make some counterstance presuppositions easier to accommodate than others. Specifically, it makes sense to say that *consider* has an evidential flavor in that speakers are inclined to treat a belief as counterstance contingent — that is, to take it to be the case that there to be a counterstance that disagrees on the question — to the extent that they can see it as sensitive to the belief holder's contingent linguistic practices: one may disagree on the issue *simply* in virtue of being immersed in different but equally legitimate conventions of language use.

The key underlying fact here is that natural language meanings fail to determine sharp predicate extensions in context and that ordinary speakers are perfectly aware of this being so. Nothing about the meaning of *athlete*, for example, settles the issue of whether a race horse such as Secretariat is eligible for inclusion on a list of top athletes (see Ludlow 2014). This is not to say that rational agents refrain from forming opinions on this and other matters of linguistic practice; they regularly do, and often in coordination with other language users. The point is that the conventions one adopts in the course of resolving SEMANTIC UNDERDETERMINATION are not without alternatives and, moreover, that language users are aware of this being so. Counterstances, we propose, represent contextually salient alternative resolutions of semantic underdetermination; a belief in some proposition is counterstance contingent just in case the doxastic commitment fails to be preserved across those counterstances. This happens, for example, when we are dealing with opinions about borderline cases for vague predicates, since here various ways of drawing the boundary seems legitimate, as Sainsbury (2013) observes. It also makes sense for judgments about "hard" cases in which commonly accepted criteria of application of the predicate at play lead to conflicting verdicts as to whether or not it applies. And indeed, the use of *consider* in (20a) and (20b) strongly suggest that Lee is borderline tall and that Senator Jones' victory is not obvious (cf. Pedersen 2012).

(20) a. Kim considers Lee is tall.
      b. Kim considers Senator Jones the winner of the presidential debate.

In saying that meaning underdetermines whether it is true that Lee is tall or whether it is true that Senator Jones won the debate, one may remain agnostic about the exact source of this underdetermination. One straightforward thought would be that predicate extensions fail to be sharply defined: there sometimes simply is no fact of the matter as to whether or not a predicate applies. But one may also pursue a broadly epistemicist line (à la Williamson 1994) and treat the underdetermination of interest here as epistemic in nature: predicate extensions are sharply defined, but there sometimes is no way to tell what they are, even for a perfectly competent speaker. What matters for our story is the hypothesis that discourse represents alternative ways of fixing predicate extensions as "live" and that the presence or absence of such alternatives matters for the semantics of subjective attitude verbs and, we claim, for the subjective/objective distinction.

If meaning fails to determine whether or not a certain predicate applies in some situation, it is up to the discourse participants to resolve the issue. This distinguishes the underdetermination at play here from plain indexicality, which is commonly resolved by facts about the discourse situation. But to say that it is up to the language users to sharpen underdetermined predicate extensions is not to say that it requires a conscious decision to use words one way or another: speakers often adopt conventions governing language use simply in virtue of being immersed in other norm-driven social activities. These activities include scientific or mathematical inquiry, and the important observation here is that what exactly counts as *sufficient evidence* or *justified* is no less underdetermined than who exactly counts as *tall*. This makes sense of (18b) and (19b), which intuitively signal that the Greeks based their judgment about the stars on shaky evidential grounds — presumably, on how the stars looked at night — and that the unprovability of Goldbach's conjecture is not a mathematical theorem but closer to an educated guess. What makes the opinions at play here sensitive to the resolution of semantic underspecification is not their subject matter, as in (16) and (17), but their salient dependence on negotiable standards of justification: stricter scientific or mathematical standards for what counts as as evidence would have prevented the ancient Greeks from drawing conclusions about what the stars are simply on the basis of how they look, and they would demand an agnostic stance on a perhaps plausible but ultimately unproven hypothesis such as the unprovability of Goldbachs's conjecture.

The notion of counterstance contingency proposed here is thus flexible enough to make sense of uses of *consider* in (16)–(19). It also has enough bite to explain the contrast between (15a) and (15b), repeated below:

(15)   a.   ✓ Kim considers Crimea part of Russia.

         b.   # Kim considers Siberia part of Russia.

It does not take much imagination to see how the proposition that Crimea is part of Russia (15a) could be counterstance contingent. Is a referendum sufficient for some region to become part of another country, or does the referendum need to be recognized by other states? If so, how many, and does the referendum also have to be in accordance with the local constitution? Nothing about the meaning of *part of Russia* settles these questions, but how one answers them obviously decides whether Crimea counts as a part of Russia or not. In contrast, it is much less easy to see how one's stance on these or other controversial issues about statehood could matter for the political status one is inclined to assign to Siberia, at least not without additional stage setting or accommodation.[2]

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[2] Accommodation can help us understand why the negation of (15b) is fine:

(i)   Kim doesn't consider Siberia part of Russia.

For reasons that we will explain below, (i) is interpreted with negation in the embedded clause. The proposition that Siberia is not part of Russia is of course no more counterstance contingent than the proposition that it is, in typical contexts, but characterizing Kim as committed to a proposition that is obviously false invites us to accommodate a basis for generating counterstances that would make sense of her judgment, e.g. differing opinions about the political legitimacy of boundaries that were the result of Russian conquest of the Khanate of Sibir.

Our basic proposal for explaining the contrast between *consider-* and *believe-* type subjective attitude verbs, then, is that the former, but not the latter, presuppose the counterstance contingency of the opinion at play, and that speakers are inclined to treat an opinion as counterstance contingent to the extent that they can see it as dependent on how semantic underdetermination is resolved. It remains to explain the more fine-grained differences between *consider*-type and *find*-type subjective attitude verbs. The key proposal is that the latter presuppose a distinguished kind of subjectivity that we label RADICAL COUNTERSTANCE CONTINGENCY and that flows from a distinguished kind of meaning underdetermination that resists what we call COORDINATION BY STIPULATION. Let us explain.

Earlier we said that language users commonly resolve semantic underdetermination in coordination with others. But not all such underdetermination is created equal. In particular, it sometimes — but not always — makes sense for speakers to propose to coordinate meaning by stipulation. This is what we see, for example, in (21a–b).

(21)   For the purposes of this discussion ...
    a. ✓ ... let's count Lee as vegetarian, since the only animals he eats are oysters.
    b. ✓ ... let's count these oysters as expensive, because they cost $36 per dozen.

But this move cannot be made with all predicates: (22a–b), for example, sound odd.

(22)   For the purposes of this discussion ...
    a. # ... let's count Lee as fascinating, since he is an expert on oysters.
    b. # ... let's count these oysters as tasty, because of their texture and brine.

These contrasts suggest that some instances of semantic underdetermination can be resolved via stipulative discourse moves, such as fixing what kinds of eating habits should be taken into account when considering whether an individual is vegetarian and what degree of cost determines whether something is expensive. But others cannot be, or at least not in a natural way, such as what kind of characteristic makes someone fascinating or what kind of texture and flavor makes something tasty. We may, of course, always try to make others see things just the way we do — but it only sometimes makes sense to simply propose to agree on some convention for the purposes of a conversation.

The previous observation suggests that given some set of counterstances K, we can ask which ones agree on exactly those predicates whose underdetermined extensions allow for coordination by stipulation. Partitioning K along these lines delivers a set of equivalence classes of counterstances, and we say that an opinion is *radically* counterstance contingent just in case it is counterstance contingent with respect to each of these equivalence classes. Clearly, this kind of contingency runs deeper than the one licensing embeddability under *consider*-type subjective attitude verbs, as it persists even if there is agreement on all the facts *and* on those underdetermined meanings that can be stipulated away.

Our proposal for *find*-type subjective attitude verbs is that they require the opinion at play to be radically counterstance-contingent. This presupposition is satisfied in (23a), because the application conditions for a predicate like *fascinating* are at least partly determined by experiences of interest/engagement/curiosity, which resist being brought into agreement by simple stipulation.

(23)   a.   ✓ Kim finds Lee fascinating.
        b.   # Kim finds Lee vegetarian.

In contrast, the application conditions for a predicate like *vegetarian* are subject to stipulation, as we have seen. The counterstance space can be partitioned based on particular choices about how to resolve them, and within each equivalence class of that partition the truth of the opinion ascribed in (23b) is invariant, depending on Lee's actual eating habits. The result is that the presupposition of *find* which requires radical counterstance contingency is not satisfied, even though the weaker presupposition of mere counterstance contingency imposed by *consider* is satisfied.

Subjective attitude verbs, according to the story told here, have their place in language because ordinary speakers know that linguistic meaning fails to conclusively settle predicate extensions: even if the facts are settled, opinions may differ because language users may resolve semantic underdetermination in incompatible ways. Whether this possibility is real may depend on what the facts in question are: we take Kim's belief that Crimea is part of Russia to be counterstance contingent, for instance, precisely because we know that the situation on the ground is complicated. Subjectivity as it is understood here becomes a pragmatic phenomenon, since language users generate counterstances and thus counterstance contingency in context using world knowlege. Subjective attitude verbs, in turn, receive an analysis that fits squarely within a broader set of analyses of the selectional properties of modals and attitude verbs that are based on the idea that such expressions introduce different kinds of contingency or "non-settledness" conditions on their complements or prejacents, including: von Fintel and Gillies' (2010) evidential analysis of epistemic *must*, Condoravdi's (2002) analysis of the distribution of future-oriented interpretations of possibility modals, Giannakidou and Mari's (2017) analysis of the future as an epistemic modality, and Giannakidou and Mari's (2015) analysis of the distribution of indicative vs. subjunctive mood in the complements of emotive attitude predicates. Let us now make the story a bit more precise.

4 Formal details

We begin with a few additional remarks on the specifics of semantic underdetermination (Section 4.1). We then offer a simplified proposal for subjective attitude verbs in order to get the key ideas into clearer view (Section 4.2) and then refine the account to handle more complex examples (Section 4.3).

4.1 Semantic Underdetermination

Our hypothesis that meaning is underdetermined can be elaborated in a variety of ways but to fix ideas, we start with the assumption that semantic values are

assigned relative to a context of utterance c and an index of evaluation s that supplies not only a possible world w_s and time t_s but also other parameters that matter for fixing semantic content. Kaplan (1989) famously suggests that an utterance of some sentence ϕ in context c is true just in case ϕ evaluates to true at some distinguished index of evaluation s_c that is fixed by c and which we may call, drawing some inspiration from Taylor (1998), the *home index* of c. One salient way of cashing out the intuition that meaning is underdetermined is then to say that the facts about discourse in fact *fail* to fix a unique distinguished index at which an utterance is to be evaluated for truth or falsity.

(24)   **Underdetermination** The facts about a discourse situation constrain but do not (transparently) determine a single home index of evaluation for an utterance context c.

As we indicated earlier, this claim may receive a very robust metaphysical gloss: we can say that an utterance is true (false) in context c in case c imposes constraints on what could be its home index that are sufficient to settle the issue in one way or another; otherwise, there is no fact of the matter. Or we may choose an epistemicist flavor: there always is a single home circumstance after all, but some of its aspects are impossible for us to determine due to certain epistemic limitations.[3]

The idea that context fails to transparently identify a distinguished index of evaluation determining what can be truly said in discourse makes sense of why some issues seem to depend on how you look at things: the issue (say, of whether Crimea is part of Russia) is answered in one way by some indices compatible with the constraints imposed by context, and in another way by other such indices. To (partially) resolve underdetermination is then to exclude some of the contextually available candidates for the home index from consideration; speakers are inclined to treat an opinion as counterstance contingent to the extent that they see it as dependent on the resolution of semantic underdetermination. What remains to be explained is why certain opinion types — taste judgments, for instance — are particularly amenable to being interpreted as counterstance contingent. To flesh out these issues, let us use the semantics of gradable adjectives, and evaluative adjectives in particular, as a case study.

Following standard protocol, we assume that a gradable adjective in the unmarked, positive form denotes a property that is true of an object in a context just in case the degree to which it possesses a lexically specified scalar quality (e.g., height) meets a threshold or "standard," for that kind of scalar quality in that context; see e.g. Lewis 1970; McConnell-Ginet 1973; Cresswell 1976; Klein 1980; von Stechow 1984; Bierwisch 1989; Kennedy 1999; Barker 2002 for different implementations of this idea. Here we assume a Lewis/Barker-style analysis, in which the standard for a particular use of *tall*, $\mathbf{stnd}_s([\![tall]\!])$, is fixed by the index of evaluation s. If we now say that a context c determines a common ground, we can take an assertion of ϕ in context c as a proposal to eliminate, from the common

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[3]   This way of spelling out what we mean with underdetermination is salient but not without alternatives: one may instead insist that each utterance context fully determines an index of evaluation, it is just underdetermined what context we are in — the underdetermination we are toying with here is effectively *contextual* underdetermination. Our key message is perfectly compatible with this way of spelling out the details. However, it chains the underdetermination that interests us to context sensitivity and it is not obvious to us that terms such *athlete* and *part of Russia* are context sensitive in the relevant sense, and so we choose a different path.

ground $\mathbf{cg}_c$, all indices s at which ϕ is false given s and c (cf. Stalnaker 1978). For instance, to say that John is tall in c is to rule out all s such that the height of John at s fails to be above $\mathbf{stnd}_s(\llbracket tall \rrbracket)$, the s-relevant threshold for height. As Barker (2002) observes, then, communication is an effort to coordinate not only on a view of what the world is like but also on conversational standards such as those fixing what it takes for an individual to count as tall. Against this background we may then say that predicates of personal taste, evaluative adjectives and other gradable adjectives that resist coordination by stipulation are sensitive not only to standards, but also to criteria of experience, judgment, or evaluation. Exactly how these criteria are incorporated into the meanings of these expressions is not important; for our purposes it would suffice to say that, for example, the semantics of *tasty*, is sensitive to what we may call an "experiential anchor" $\mathbf{e}_s$, which like $\mathbf{stnd}_s$ is provided by the index of evaluation s. (See Muñoz (2019) for a much more sophisticated analysis along these lines.)

We take all of these semantic decisions about what goes into an index of evaluation to be fairly innocent; as detailed by MacFarlane (2014) and Muñoz (2019), these decisions are entirely neutral between a contextualist or a relativist outlook on natural language semantics. But they play especially well with our underdetermination thesis, for of course it is overwhelmingly plausible to say that context does not determine anything like "the" threshold for tallness or "the" experiential anchor for tastiness, and so if indices settle these matters, it is no wonder that context does not identify a unique home index. We also see why beliefs about who is tall or about what is tasty are potentially counterstance contingent: since the semantics of gradable adjectives appeals to parameters that are frequently underdetermined, it is easy to see how such opinions may depend on the resolution of such underdetermination.

We now have everything in place to sharpen the distinction between plain and radical counterstance contingency. Crucial to our view is that uses of gradable adjectives are not only proposals to coordinate on facts about the world, but are also proposals to coordinate on distinct discourse parameters beyond possible worlds and times: thresholds and, in the case of evaluative adjectives, experiential anchors or judges (Barker 2013). Specifically, we will say that a proposition p is *sensitive* to a discourse parameter π just in case its truth-value varies across indices that differ only on their choices for π. So for instance, the proposition that John is tall is sensitive to John's height (which we take to be fixed by w) but also to the standard for tallness. An utterance of ϕ in c is then a proposal to coordinate on a discourse parameter π just in case the proposition expressed by ϕ in c is π-sensitive.

Against this background, we then propose that discourse participants can coordinate on some discourse parameters by stipulation but not on others, and we add that attempts to coordinate on experiential anchors are of the latter kind. One way to vindicate this claim for the predicates that interest us here is the following intuitive principle:

(25) **Coordination** Whether a proposal to coordinate on an experiential anchor succeeds is dependent on the discourse participants' affective dispositions.

So for instance, whether one can agree to treat Lee as fascinating will depend on whether Lee strikes the discourse participants as fascinating. Since one cannot

just *stipulate* feelings of fascination — or affective dispositions more generally — predicates of personal taste introduce a semantic underdetermination that resists coordination by stipulation. In contrast, a proposal to coordinate on a certain standard for tallness will only require that the discourse participants are willing to set the standard accordingly for the purposes of the conversation. So the belief that John is tall may be counterstance contingent but not radically so — it embeds felicitously under *consider* but not under *find* — while the belief that sea urchin is tasty may very well be radically counterstance contingent and thus embed felicitously under *consider* as well as under *find*. What underlies this fact is that the semantics of the adjectives involved is sensitive to different kinds of discourse parameters. We thus submit that our distinction between plain and radical counterstance contingency makes perfect sense and that it can be articulated in a straightforward semantic and pragmatic framework for gradable adjectives.

In sum, we have articulated one way of saying that meaning is underdetermined — one that allows for underdetermination not only in matters of taste but also, for instance, when it comes to questions of territorial sovereignty. We have also explained why the use of certain lexical items — gradable adjectives in particular — is prone to introduce semantic underdetermination and why this underdetermination will resist coordination by stipulation — introduce radically counterstance contingent propositions — if evaluation is involved. Against this background, we will now spell out our proposal for subjective attitude verbs.

4.2 Subjective Attitude Verbs: Basics

We already introduced the notion of an index and we shall now say that an *information state* $i \in I$ is a set of such indices. Each index s comes with a possible world w_s that maps, among other things, each constant of our target language to its world-invariant denotation $d \in D$ (here and throughout we will not mark the difference between a constant and its denotation to simplify the notation). As usual W is the set of all possible worlds. We assume that our semantic models provide some doxastic accessibility relation. Fix some subset $D_a \subseteq D$ as the set of *doxastic agents*. Then Dox: $(D_a \times W) \mapsto I$ assigns to each doxastic agent a and possible world w the set of possible indices compatible with what a believes at w. We define the standard truth-conditions for belief attributions on that basis (here and throughout we assume that α denotes a doxastic agent):

(26) $[\![\alpha \text{ believes } \phi]\!]^{c,s} = 1$ iff $\text{Dox}(\alpha, w_s) \subseteq [\![\phi]\!]^c$

So far, so familiar. The key additional component is a contextually determined counterstance selection function that maps each information state to a partitioned set of doxastic alternatives:

(27) **Definition: Counterstance Selection Function**
   A counterstance selection function $\kappa : I \mapsto 2^I \times (I \times I)$ maps each $i \in I$ to a pair $\langle C, R \rangle$ such that:

   i. $i \in C$
   ii. no i' in C is such that $i' \subset i$
   iii. R is a reflexive, symmetric, and transitive relation over C.

Given some $\kappa(i) = \langle C, R \rangle$, we say that:

iv. a state i' *is in* $\kappa(i)$ iff i' is an element of C;

v. π is a *cell in* $\kappa(i)$ iff π is an equivalence class of C.

A counterstance to i agrees with i on what context treats as matters of fact but may otherwise disagree with i (and it cannot be strictly stronger than i). R partitions the set of counterstances into a set of equivalence classes, and counterstances within a single class (or cell) agree on all those resolutions of semantic underdetermination that allow for coordination by stipulation.

The two notions of counterstance contingency that we have alluded to can then be stated more precisely as follows.

(28)   **Definition: (Radical) Counterstance Contingency**
       Take any proposition p, let κ be the counterstance selection function provided by c:

    i. p is *counterstance contingent* with respect to i in context c iff $i' \subseteq p$ and $i'' \nsubseteq p$ for some i' and i'' in $\kappa(i)$.

    ii. p is *radically counterstance contingent* with respect to i in context c iff for all π in $\kappa(i)$: $i' \subseteq p$ and $i'' \nsubseteq p$ for some $i', i'' \in \pi$

It follows immediately from these definitions that whenever a proposition is radically counterstance contingent, it is also counterstance contingent, but not vice versa.

Let us illustrate the proposal using a very simple model consisting of four counterstances (ovals) containing two indices apiece (circles), grouped together in two equivalence classes (round-cornered rectangles). The actual information state i is located in the solid-edged oval in the top left corner and we use "p" and "$\overline{p}$" to mark that some proposition p is true or false at some index, respectively.
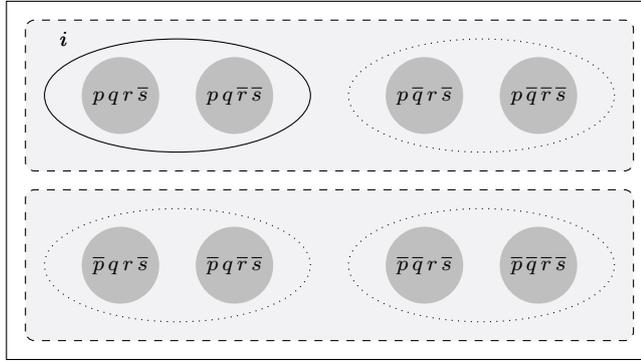

Fig. 1 A counterstance space

The proposition r as well as its negation fail to be counterstance contingent with respect to i since no counterstance is committed to them: i is agnostic about r, and so must be all of its counterstances. The proposition $\overline{s}$ fails to be counterstance contingent as well, but for a different reason: i's commitment to $\overline{s}$ is preserved

across counterstances — the subject's belief in the falsity of s counts as objective in context. The commitment to $\bar{s}$ of i thus differs from its commitment to p, which fails to be preserved across counterstances; at the same time, there is no variation in commitment to p across counterstances within a single cell: in the top one all stances accept p, and in the bottom one all states reject p. So p is counterstance contingent, but not radically counterstance contingent. Finally, q is radically counterstance contingent since even counterstances belonging to the same cell — agreeing on matters of semantic underdetermination that allow for coordination by stipulation — vary in their commitment to q.[4]

The basic proposal then is that *consider* and *find* are in their core at issue content just like *believe* — they express doxastic attitudes — but differ in their presuppositions.[5] The former presupposes that its complement is counterstance contingent, while the latter presupposes radical counterstance contingency. The following articulate these claims more precisely, assuming here that ϕ is atomic:

(29) a. $[\![\alpha \text{ considers } \phi]\!]^{c,s}$ is defined only if $[\![\phi]\!]^c$ is counterstance contingent with respect to $\text{Dox}(\alpha, w_s)$ in context c.

  b. If defined, then $[\![\alpha \text{ considers } \phi]\!]^{c,s} = 1$ iff $\text{Dox}(\alpha, w_s) \subseteq [\![\phi]\!]^c$

(30) a. $[\![\alpha \text{ finds } \phi]\!]^{c,s}$ is defined only if $[\![\phi]\!]^c$ is radically counterstance contingent with respect to $\text{Dox}(\alpha, w_s)$ in context c.

  b. If defined, then $[\![\alpha \text{ finds } \phi]\!]^{c,s} = 1$ iff $\text{Dox}(\alpha, w_s) \subseteq [\![\phi]\!]^c$

In ordinary contexts c, $[\![\text{Lee is vegetarian}]\!]^c$ is counterstance contingent but not radically counterstance contingent, while $[\![\text{Lee is fascinating}]\!]^c$ is radically coun-

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[4] The example under consideration sets aside the possibility of a counterstance to i being strictly weaker than i since it remains agnostic about an issue that i has resolved in some way. This would account for the acceptability of sentences such as "Mathematicians consider Goldbach's conjecture unprovable." The relevant counterstance is here one that adopts more restrictive standards of justification in mathematics and thus takes an agnostic stance on the issue.

[5] As noted in Section 2, Muñoz (2019) argues that only *consider* has doxastic at-issue content, not *find*, based on the putative contrast in (i).

  (i) Alphonse doesn't find/#consider licorice tasty, but he thinks that it is.

According to Muñoz, the *find* variant is acceptable in a context in which Alphonse is an autocentric evaluator who has forgotten what licorice tastes like, and so holds a false belief, but the *consider* variant is not. We agree that the *find* sentence can have this interpretation, but we don't see a strong difference between *find* and *consider* here, especially if we spell out the details of the context a bit more:

  (ii) Alphonse doesn't find/consider licorice tasty. But he's forgotten what it tastes like, and now he mistakenly thinks/believes that it *is* tasty.

On our account, these facts do not indicate that *find* and *consider* do not entail belief in the prejacent, but rather than one can come to believe a non-counterstance contingent proposition — e.g., the proposition that licorice is tasty, based on hearsay — but fail to believe the corresponding (radically) counterstance contingent proposition.

That said, our analysis is compatible with the at-issue content of *find* and *consider* being stated in terms of something other than vanilla doxastic attitudes, and our account of the selectional properties of subjective attitude verbs does not rely on any assumptions about their at-issue content at all. However, it is crucial to our analysis of their evidential properties that their at-issue meanings at least include a doxastic component, so for simplicity, we will continue to characterize this part of their meaning as identical to that of *believe*.

terstance contingent. This is why simple predications of *vegetarian* are acceptable under *consider* but not under *find*, and why simple predications involving *fascinating* are acceptable under both types of subjective attitude verbs. Relatedly, ⟦Siberia is part of Russia⟧^{c} fails to be counterstance contingent, whereas in contrast ⟦Crimea is part of Russia⟧^{c} is counterstance contingent (but not radically so), which explains why the latter, but not the former, is acceptable under the scope of *consider* (but not *find*). Since every radically counterstance contingent proposition is counterstance contingent (but not vice versa) we predict that whenever a *find*-statement is felicitous, so is its corresponding *consider*-statement (but not vice versa), a prediction that is in accord with the facts.[6]

4.3 Counterstance and composition

In this subsection, we highlight some limitations of the basic proposal and describe a refined analysis that overcomes these difficulties. So far we have focussed on cases in which the complement of a subjective attitude verb is atomic. This allowed us to get the basic ideas into proper view, but of course we also have to say what is going on when subjective attitude verbs have complex complements. And here the basic story runs into some difficulties that call for additional refinements. We begin with some observations that are inspired by Sæbø (2009). There is a striking contrast between (31a) and (31b) as well as between (32a) and (32b):

(31) a. ✓ Kim finds Lee handsome and pleasant to be with.

      b. # Kim finds Lee handsome and under 45.

(32) a. ✓ Kim finds everyone who is not vegetarian unpleasant.

      b. # Kim finds everyone who is pleasant vegetarian.

The basic proposal described so far does not predict the observed contrasts: a conjunctive proposition is (radically) counterstance contingent just in case at least one of its conjuncts is, and so (31a) and (31b) should both be fine. Relatedly, under the reasonable assumption that "everyone who is not vegetarian is unpleasant" and "everyone who is pleasant is vegetarian" are truth-conditionally equivalent, our basic proposal predicts that these sentences have identical distributions under SAVs. But this cannot be right, as the contrast between (32a) and (32b) shows.

Sæbø (2009) once again appeals to a type difference between subjective and objective predicates to explain the contrasts. Due to their type difference, *handsome* and *under 45* cannot be coordinated unless a covert pronoun fills the judge position of the former. But then the coordinated structure *handsome and under 45* fails to be judge-dependent and thus does not embed felicitously under *find*, predicting that (31b) is marked (since no judge position needs to be filled to coordinate *handsome* and *pleasant to be with*, we expect (31a) to be fine). For (32a), Sæbø assumes that the subject DP quantifier raises, leaving *unpleasant* with an

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[6] We have opted for a formal system that keeps track of counterstances by mapping simple information states (sets of possible worlds) to structured sets of doxastic alternatives. There is nothing wrong with this approach, but the setup is not essential, and we might have done things differently. For instance, we could model an information state as a proposition and add a fallback relation to keep track of which doxastic commitments are purely factual and which are sensitive to how semantic underdetermination is resolved. Let us not fuss over the difference.

open judge argument when it composes with *find*, as required. In (32b), quantifier raising will leave nothing judge dependent to combine with *find*, and even if there is no raising, the judge argument of *pleasant* would need to be filled to allow for composition with the determiner phrase.

For current purposes, we set aside specific concerns about Sæbø's analysis and focus on our key worry, which again pertains to the challenge of arriving at a suitably general explanation of what distinguishes subjective attitude verbs from their plain doxastic cousins. The key observation here is that *consider*-type subjective attitude verbs exhibit a pattern similar to their *find*-type cousins:

(33)   a.   ✓ Kim considers Lee vegetarian and intelligent.

       b.   # Kim considers Lee vegetarian and in the cast of *Hamilton*.

(34)   a.   ✓ Kim considers someone who is in the cast of *Hamilton* vegetarian.

       b.   # Kim considers someone who is vegetarian in the cast of *Hamilton*.

A type theoretic explanation of these contrasts à la Sæbø would need to assign to *vegetarian* a type so that this expression — unlike *in the cast of Hamilton* — embeds felicitously under *consider* but — unlike *fascinating* — fails to embed felicitously under *find*. For reasons stated earlier, it is hard to see what could motivate such a maneuver.

The fact remains that if we simply look at the (radical) counterstance contingency of the proposition expressed by the complement, we will not be able to explain the observed contrasts in acceptability. The intuitive response to the problem is that the proposition at play must not only exhibit the right kind of contingency, but also do so for the right reasons. For a conjunction to embed felicitously under a subjective attitude verb, for instance, the (radical) counterstance contingency of the conjunction must flow from the (radical) counterstance contingency of both conjuncts: this is why (31a) and (33a) are fine while (31b) and (33b) are marked. For a quantified construction to embed under *find* and *consider*, in turn, the relevant contingency must flow from the contingency of the scope, not the restrictor. To say that Kim finds everyone who is not vegetarian unpleasant is to say that Kim's attitude speaks to the question of who is unpleasant—a question that allows for a radically counterstance contingent resolution. To say that Kim finds everyone who is pleasant vegetarian is to say that Kim's attitude speaks to the question of which pleasant people are vegetarian — a question that fails to allow for a radically counterstance contingent resolution. Hence the difference in acceptability between (32a) and (32b) and between (34a) and (34b).

The basic observation then is that subjective attitude verbs not only require that their complements exhibit a distinct kind of contingency: complex complements, in addition, tend to impose distinct constraints on the set of doxastic alternatives that may witness the contingency at play. The good news is that one can come up with a simple and intuitive compositional semantics that predicts these constraints in just the right way. As a preparation, and since our analysis now includes quantifiers, let us assume explicitly that our language provides a set of variables x, y, z, ... and that context fixes a variable assignment g_c. We say that $\text{Alt}(c)$ is the set of contexts just like c except for their variable assignments. If α is a singular expression, then $d_c(\alpha)$ — the *denotation* of α in c — is $w(\alpha)$ in case α is some constant, and is $g_c(\alpha)$ in case α is a variable. Indices effectively

map predicates to extensions: as usual, we say that $[\![F\alpha_1 \ldots \alpha_n]\!]^{c,s} = 1$ just in case $\langle d_c(\alpha_1), \ldots, d_c(\alpha_n) \rangle \in s(F)$.

To get things going, we generalize the notion of a (radically) counterstance contingent proposition to the notion of a (radically) counterstance contingent *issue*. We associate with each sentence an issue by defining a question operator "?" as follows (cf. Groenendijk and Stokhof 1984):

(35) $[\![\phi?]\!]^{c,s} = \{s' : [\![\phi]\!]^{c',s} = [\![\phi]\!]^{c',s'}$ for all $c' \in \mathrm{Alt}(c)\}$

The semantic value of "$F\alpha_1 \ldots \alpha_n$?" at some index s is the set of indices at which the same n-tuples of individuals satisfy ϕ as in s. If $\alpha_1, \ldots, \alpha_n$ are all constants, then $[\![F\alpha_1 \ldots \alpha_n?]\!]^c$ effectively partitions logical space into two sets of indices: those at which the sentence "$F\alpha_1 \ldots \alpha_n$" is true and those at which it is false. The open sentence "Fx?" denotes the set of true and complete answers to the question of who is F, and so on. If we think of $[\![\phi?]\!]^c$ as the issue raised by ϕ in context, then it makes sense to expand the notion of (radical) counterstance contingency as follows:

(36)   **Definition: (Radical) Counterstance Contingency (Issues)**
      Take any partition Q of the set of indices, let κ be the counterstance selection function provided by c:

      i. Q is *counterstance contingent* with respect to i in context c iff for some $p \in Q$, p is counterstance contingent with respect to i in context c

      ii. Q is *radically counterstance contingent* with respect to i in context c iff for some $p \in Q$, p is radically counterstance contingent with respect to i in context c

The simple intuition here is that an issue is (radically) counterstance contingent just in case one of its resolutions is (radically) counterstance contingent.

To make our refined analysis more precise, we will take some inspiration from the dynamic literature and state what it takes for an information state to be updated with some bit of information. Counterstance contingency is now a constraint on updating, and the claim is that we can rely on a simple system of update rules to make good predictions about how and when complex complements embed under subjective attitude verbs.[7] The key move here is to distinguish between ordinary, counterstance contingent, and radically counterstance contingent updates, and we do so on the basis of what it takes for a context to admit an update of each respective type.

(37)   **Definition: Admission**
      Consider arbitrary information carrier i, context c, and formula ϕ:

      i.   the <u>o</u>rdinary update of i with ϕ in c, $i[\phi]_o^c$, is admitted

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[7] Some popular dynamic semantics: Discourse Representation Theory (Kamp 1981; Kamp and Reyle 1993; Kamp, van Genabith, and Reyle 2011), Dynamic Predicate Logic (Groenendijk and Stokhof 1991), File Change Semantics (Heim 1982), Update Semantics (Veltman 1985, 1996). There is a distinct sense in which our proposal will not be essentially dynamic, since updating will always amount to adding a proposition to the input state. What interests us here is how a system of update rules can capture the counterstance contingency of complex formulas.

  ii. the <u>c</u>ounterstance <u>c</u>ontingent update of i with ϕ in c, $i[\phi]^c_{\mathtt{cc}}$, is admitted iff $[\![\phi?]\!]^c$ is counterstance contingent with respect to i in c

  iii. the <u>r</u>adically <u>c</u>ounterstance <u>c</u>ontingent update of i with ϕ in c, $i[\phi]^c_{\mathtt{rcc}}$, is admitted iff $[\![\phi?]\!]^c$ is radically counterstance contingent with respect to i in c

In brief, a certain type of update with some formula is admitted just in case the issue raised by that formula carries the right kind of contingency in context.

If counterstance contingency is a presupposition and if presuppositions are definedness conditions on updating, then it makes good sense to say that admission failures result in an update being undefined. And if an update is admitted, we proceed in a fashion that is very familiar from the existing dynamic literature. Here is the proposal:

(38) **Definition: Updates**
Consider arbitrary information carrier i, context c, formula γ, and update type $\mathtt{f}$. If $i[\gamma]^c_{\mathtt{f}}$ is admitted, then updating with γ proceeds according to the followin rules (as usual, $c[x/a]$ is just like c except that $d_{c[x/a]}(x) = a$):

$(\mathcal{A})$ $i[F\alpha_1 \ldots \alpha_n]^c_{\mathtt{f}} = \{s \in i \colon \langle d_c(\alpha_1), \ldots, d_c(\alpha_n)\rangle \in s(F)\}$

$(\neg)$ $i[\neg\phi]^c_{\mathtt{f}} = i \setminus i[\phi]^c_{\mathtt{f}}$

$(\wedge)$ $i[\phi \wedge \psi]^c_{\mathtt{f}} = (i[\phi]^c_{\mathtt{f}})[\psi]^c_{\mathtt{f}}$

(Q) $i[Q_x(\phi)(\psi)]^c_{\mathtt{f}} = \{s \in i \colon \{a \in D \colon \{s \in i[\phi]^{c[x/a]}_{\mathtt{o}}\}R_Q$
$\qquad\qquad\qquad\qquad\qquad \{a \in D \colon \{s \in i[\phi]^{c[x/a]}_{\mathtt{o}}[\psi]^{c[x/a]}_{\mathtt{f}}\}\}$

Else, $i[\gamma]^c_{\mathtt{f}}$ is undefined and we write $i[\gamma]^c_{\mathtt{f}} = \bot$, where $\bot \notin I$ is the *undefined state* such that $\bot[\phi]^c_{\mathtt{f}} = \bot$ for all c, ϕ and $\mathtt{f}$.

An update with a closed atomic sentence simply adds the proposition expressed to the input state by eliminating all possible worlds at which the proposition is false — assuming that the issue put into play by the sentence has the right kind of contingency for the update to be admitted in the first place. If not, the update is undefined.

Negation and conjunction work as expected in a dynamic system: an update with a negation just takes the complement of the result of updating with what is negated, and an update with a conjunction proceeds by updating with the first and then with the second conjunct. Note here that we immediately predict that a (radically) counterstance contingent update with a conjunction is defined only if both conjuncts are (radically) counterstance contingent.[8]

The semantics for quantifiers builds on the proposal from Chierchia (1992, 1995), where R_Q is the second-order relation appropriate to the determiner Q: the subset relation for "every," the non-empty intersection for "some," and so on. What is important here is that the update with the restrictor is ordinary and so effectively free of any counterstance contingency presupposition. As such the

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[8] To see this, suppose that $[\![\phi?]\!]^c$ fails to be, say, radically counterstance contingent with respect to i in c. Then $i[\phi]^c_{\mathtt{rcc}}$ is not admitted and so $i[\phi]^c_{\mathtt{rcc}}$ is undefined. Hence $i[\phi]^c_{\mathtt{rcc}} = \bot$ and so $(i[\phi]^c_{\mathtt{f}})[\psi]^c_{\mathtt{rcc}} = \bot$, and so $i[\phi \wedge \psi]^c_{\mathtt{rcc}}$ is undefined. For parallel reasons, any radically counterstance contingent update of i with $\ulcorner\psi \wedge \phi\urcorner$ is undefined in c. The fact that these results hold even if the entire conjunction $[\![\phi \wedge \psi]\!]^c$ is radically counterstance contingent is one respect in which the current framework improves upon the more basic proposal.

counterstance contingency of a quantified construction is fully determined by the counterstance contingency of (the issue raised by) its scope.

We can then wrap things up by refining our semantics of subjective attitude verbs as follows (as before, let κ be the contextually determined counterstance selection function):

(39)   a. $[\![\alpha \text{ considers } \phi]\!]^{c,s}$ is defined only if $\text{Dox}(\alpha, w_s)[\phi]^c_{\text{cc}}$ is defined

      b.   If defined, $[\![\alpha \text{ considers } \phi]\!]^{c,s} = 1$ iff $\text{Dox}(\alpha, w_s) \subseteq [\![\phi]\!]^c$

(40)   a. $[\![\alpha \text{ finds } \phi]\!]^{c,s}$ is defined only if $\text{Dox}(\alpha, w_s)[\phi]^c_{\text{rcc}}$ is defined

      b.   If defined, $[\![\alpha \text{ finds } \phi]\!]^{c,s} = 1$ iff $\text{Dox}(\alpha, w_s) \subseteq [\![\phi]\!]^c$

The proposal continues to make good sense of subjective attitude verbs whose complements are atomic: $[\![\text{Mary finds Lee fascinating}]\!]^c$, for instance, is defined only if the issue of whether Lee is fascinating allows for a radically counterstance contingent resolution. In addition, we now also make the right predictions when a subjective attitude verb has a complex complement. To see this, go back to the earlier observed contrasts involving *find*, repeated below:

(31)   a.   ✓ Kim finds Lee handsome and pleasant to be with.

      b.   # Kim finds Lee handsome and under 45.

(32)   a.   ✓ Kim finds everyone who is not vegetarian unpleasant.

      b.   # Kim finds everyone who is pleasant vegetarian.

In ordinary contexts c, the issue of whether Lee is under 45 fails to be radically counterstance contingent, and so a radically counterstance contingent update with "Lee is under 45" will be undefined with respect to Kim's doxastic state — it follows immediately that a radically counterstance contingent update with "Lee is handsome and under 45" will be undefined with respect to Kim's doxastic state, and so (31b) is undefined, as required. (31a), in contrast, is fine since both both the issue of whether Lee is handsome and the one of whether he is pleasant to be with allow for a radically counterstance contingent resolution. The proposal under consideration also makes sense of the data involving quantified constructions. The issue of who is vegetarian fails to be radically counterstance contingent, explaining why (32b) is unacceptable, while the radical counterstance contingency of the issue of who is unpleasant licenses (32a).

The explanatory strategy pursued here easily generalizes so that we can also explain the corresponding data involving *consider* in (33) and (34). The proposal, moreover, allows us to draw some fine-grained but nonetheless intuitive distinctions. For instance, given the standard definition of disjunction in terms of negation and conjunction, the proposition that Crimea is part of Russia or Ukraine fails to be counterstance contingent in ordinary contexts, since every doxastic alternative agrees on that proposition. If some student is clearly tall while others are borderline, then the proposition that some student is tall fails to be counterstance contingent, whereas the proposition that every student is tall is counterstance contingent and the relevant doxastic alternatives disagree on the issue of who is tall, and so on.

We thus conclude that it is possible to refine the basic analysis so that it makes sense of a number of trickier examples. And the resulting proposal can be

further elaborated in a number of ways. Let us mention one important direction before we move on. We have said that subjective attitude verbs require their complement to be subjective in a distinct way. A complicating observation from Sæbø (2009) is that material which fails to be properly subjective may nonetheless embed felicitously under *find* as long as it can be interpreted as presupposed (see also Bouchard 2012). Compare:

(41) a. # Mary finds it certain that Charles is married.

      b. ✓ Mary finds it regrettable that Charles is married.

While (41a) is marked, (41b) is fine, the obvious explanation being that in the latter case the complement presupposes, rather than asserts, that Charles is married. Thus in (41b) Mary's attitude speaks to the issue of whether Charles's being married is regrettable — an issue that allows for a radically counterstance contingent resolution. (41a), in contrast, is marked since the issue of whether Charles's being married is certain fails to be suitably contingent.

    We can easily accommodate the above observations by adding the following update rule for presupposed material to the system:

(42) (∂) $i[\partial \phi]^c_{\mathtt{f}} = \begin{cases} i & \text{if } i[\phi]^c_{\mathtt{o}} = i \\ \bot & \text{otherwise} \end{cases}$

In words, presupposed material imposes a definedness condition on updating (see Beaver 2001 and Heim 1982, among others) but the presupposition operator neutralizes all existing counterstance contingency constraints. The difference between (41a) and (41b) is then explained in the expected way: whether something is regrettable is a radically counterstance contingent affair; whether something is certain is not.

4.4 Summary

Nothing we have done so far shows that the key ideas of our proposal for subjective attitude verbs cannot be elaborated in other ways. But it is not trivial to get the details right, especially if we care for a framework that gets not only the facts about *find* but also those about *consider* straight, and does so in a principled way. Coppock (2018), for instance, suggests that the distinction between counterstance contingency and radical counterstance contingency can be captured in an outlook based framework as follows. Recall that a proposition is objective if its truth-value does not vary across outlooks, and that it is discretionary just in case it fails to be objective. We may then say that a proposition is counterstance contingent if it is discretionary, and we can say that it is radically counterstance contingent just in case it is strongly discretionary in the following sense: for every possible world, there is an outlook at which the proposition is true and an outlook at which it is false (Coppock 2018, pp. 133-4).

    Coppock's distinction may track something important but it does not capture counterstance contingency the way it is used here to explain the full set of embedding facts about *consider*. First, consider examples like (43a-b), discussed in Section 3.

(43) a.   The ancient Greeks considered the stars to be holes in the sky.

b.   Mathematicians consider Goldbach's conjecture unprovable.

Since possible worlds are complete statements of what is a matter of fact, and since it is arguably a fact whether or not the stars are holes in the sky, and whether or not Goldbach's conjecture is provable, we do not expect the truth-value of the complements of *consider* in (43a-b) to vary across outlooks corresponding to a single possible world. So these propositions turn out to be non-discretionary, leaving it unexplained why they embed under *consider*. Here the appeal to a proposition being counterstance contingent with respect to some information state proves advantageous: what makes a proposition thus contingent is that a commitment to it is sensitive to salient decisions about linguistic practice — which may include decisions about what it takes for some body of evidence to justify a certain conclusion. Even statements of what is a matter of fact may thus count as subjective in a proper contextual setting.

Second, recall the contrast between (15a) and (15b), repeated below.

(15) a.   ✓ Kim considers Crimea part of Russia.

b.   # Kim considers Siberia part of Russia.

The outlook based approach can model this data by stipulating that the proposition that Siberia is part of Russia varies only across worlds, while the proposition that Crimea is part of Russia varies within worlds, across outlooks. But as Coppock herself acknowledges (2018, p. 134), the formal framework has nothing to say about why this is so — for this or any other case. The counterstance approach, in contrast, provides the answer: the truth of the proposition that Crimea is part of Russia varies with different outcomes of unresolved socio-political decisions about sovereignty; the truth of the proposition that Siberia is part of Russia does not.

Finally, as we will argue in the next section, the counterstance approach provides a basis for answering the question we began with: how to explain the evidential flavor of subjective predicates. We begin with our account of the evidential presuppositions of subjective attitude verbs, and then turn to the case of unembedded subjective predicates.

5 Evidentiality

We began this paper with the observation that predicates of personal taste such as *tasty* and *fun* carry an evidential aspect: speakers ascribing such properties typically suggest that they have first-hand knowledge of the item under consideration in the sense that they have actually tasted it or experienced it. Recall the constrast between (1a) and (1b), repeated below:

(1)   I have never tried sea urchin.

a.   # It's (not) tasty.

b.   ✓ I hear it's (not) tasty.

When it is common knowledge that a speaker lacks the relevant first-hand knowledge of how sea urchin actually tastes, it is strange to simply assert or deny that

it is tasty. Even if one has other good reasons to believe that sea urchin is tasty — say, testimony from a trusted friend — choosing a hedged variant such as (1b) is much more appropriate. And the fact that the first-hand acquaintance implication disappears in (1b) indicates that it is not a presupposition, but rather a kind of evidential condition on the assertion (Ninan 2014).

   We also pointed to corresponding observations about attitude reports involving *find*. (3a) and (4a) are clearly marked while (3b) and (4b) are just fine (repeated):

(3)   I have never tried sea urchin...
      a.   # ... but I find it tasty.
      b.   ✓ ... but I believe it to be tasty.

(4)   Kim has never tried sea urchin...
      a.   # ... but she finds it tasty.
      b.   ✓ ... but she believes it to be tasty.

The observation is that *find* imposes stronger demands on the kind of evidence that the attributee needs to possess than *believe*. And as the following examples show, *consider* carries distinct evidential requirements as well:

(44)   Lee has never seen Kim...
       a.   # ... but he considers her tall.
       b.   ✓ ... but he believes her to be tall.

(45)   I can't read the gas gauge...
       a.   # ... but I consider the gas tank full.
       b.   ✓ ... but I believe the gas tank to be full.

We conclude that it is a shared feature of both *consider*- and *find*-type subjective attitude verbs that their evidential basis is stronger than the one for vanilla doxastic attitude verbs like *believe*. And we claim that our analysis of these attitudes as presupposing the (radical) counterstance contingency of their complements goes a long way toward explaining not only why this is so, but why bare assertions of predicates of personal taste and other subjective predicates have the evidential implications that they do. We begin in Section 5.1 with our account of the evidential aspect of subjective attitude ascriptions, and then show in Section 5.2 how it leads to an explanation of the evidential inferences of plain assertions involving subjective predicates.

5.1 Subjective Attitude Verbs

What makes a doxastic commitment counterstance contingent, recall, is that it fails to be preserved across alternative resolutions of underdetermined meaning: one may agree on all the relevant facts and still disagree on the issue, simply in virtue of being immersed in different but equally legitimate conventions of language use. What remains true across all doxastic alternatives is that one's stance on the issue under consideration and one's view about the relevant facts are mutually dependent. For example, given certain conventions of language use, a belief that

Kim is tall rationally commits one to certain views about Kim's height, specifically, to the belief that Kim's height meets or exceeds the relevant standard for tallness. Conversely, what one takes Kim's height to be obviously matters for one's stance on the issue of whether Kim is tall: how one answers this question depends on whether one believes that Kim's height meets or exceeds whatever standard for tallness one takes to be in play, in a systematic way: the greater the height Kim is believed to have, the greater the credence in the proposition that Kim is tall.

To illustrate this point, recall our proposal that to believe that Kim is tall is to believe that Kim's height meets or exceeds whatever the relevant standard for tallness is. The interplay between facts about Kim's heights and the truth of the proposition that Kim is tall would then look as in Figure 2. Conventions of language use thus mediate between potentially counterstance contingent commitments and beliefs about matters of fact.
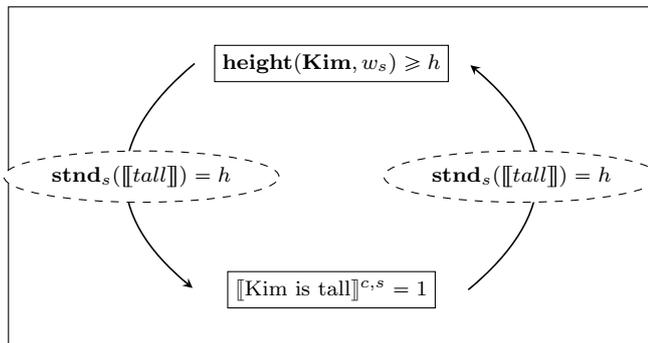

Fig. 2 Height, tallness, and conventions

The key point here is that an agent's counterstance contingent beliefs also come with distinct commitments to the facts on the ground, and whenever this is so we will say that the former is "more basic" than the latter if it is also the case that the agent has no *independent* evidence about the relevant facts. So for instance, if Lee believes that Kim is tall because a reliable source uttered "Kim is tall" with assertive force, then this testimonial belief is more basic than her commitment to Kim having a particular height. This is not so if Lee has formed the belief that Kim is tall because she has seen (or even just been told by a reliable source) that Kim has a height of, say, five feet eight inches. In fact, here it seems right to say that Lee's factual belief about Kim's height is more basic than her commitment to Kim being tall.

The first key hypothesis that matters here is that discourse participants do not only ascribe beliefs to others but also have some conception of which among an agent's doxastic commitments are more basic than others. The relevant structure can be modeled by associating with each doxastic agent a at some possible world w not only a belief set $\mathrm{Dox}(a, w)$ but also a revision function r keeping track of the result of withdrawing a commitment to some proposition p from a's belief state at w. And whenever we have two propositions p and q such that $\mathrm{Dox}(a, w) \subseteq p$ and $\mathrm{Dox}(a, w) \subseteq q$, p is more basic than q (for a at w) just in case we can retract the commitment to q without retracting the commitment to p, but not vice versa:

$r(a, w, q) \subseteq p$ but $r(a, w, p) \nsubseteq q$. This is just to say that the commitment to q depends on the commitment to p but not vice versa. In that case we will say that p is a's EVIDENTIAL BASIS for q at w.

The second key hypothesis is that the evidential structure of an agent's doxastic state constrains its doxastic alternatives. A doxastic commitment, we said, goes away in case its evidential basis goes away. We now add that counterstances respect this constraint as well:

(46) **Counterstances and Evidence**
Suppose that p is a's evidential basis for q at w and let κ be the contextually provided counterstance selection: then for all i in $\kappa(\mathrm{Dox}(a, w))$, if $i \nsubseteq p$ then $i \nsubseteq q$.

Counterstances, like all doxastic alternatives, are well-behaved in the sense that they reflect the evidential structure of the information state at play. If a counterstance challenges a commitment to one of some agent's beliefs, it thereby challenges all other beliefs that depend on it. What really matters for us is that by contraposition, if a counterstance does not challenge a commitment to q, it also must preserve its commitment to q's evidential basis. The following is an immediate consequence:

(47) **Counterstance Contingency and Evidence**
Suppose that p is a's evidential basis for q at w: if q fails to be counterstance contingent with respect to $\mathrm{Dox}(a, w)$ in c, then p fails to be counterstance contingent with respect to $\mathrm{Dox}(a, w)$ in c.

This should be easy to see: if an agent is committed to q and q is not counterstance contingent, then the commitment to q is preserved across all counterstances. And when q's evidential basis is p, so must the underlying commitment to p be preserved across all counterstances, in which case p is not counterstance contingent either.

It is now straightforward to explain why the truth of a subjective attitude ascription carries distinct implications about the attitude holder's evidential situation. Earlier we observed that every commitment to a potentially counterstance contingent proposition goes together with a commitment to the facts on the ground being a certain way. Lee's belief that Kim is tall, for example, entails a commitment to Kim's height meeting or exceeding what Lee takes to be the standard for tallness (for the comparison class to which Kim belongs), say, five foot eight. And in ordinary contexts anyway, the proposition that Kim is at least five foot eight in height is not counterstance contingent. So if Lee's belief that Kim is at least five foot eight depends on his belief that Kim is tall — if the latter is the evidential basis for the former — then the proposition that Kim is tall cannot be counterstance contingent either. This will be the case whenever Lee has no independent evidence about Kim's height, so in a context such as the one described in (44), the definedness conditions on *consider* cannot be satisfied, and the sentence is infelicitous. Conversely, whenever the definedness conditions on *consider* are satisfied — whenever the prejacent is counterstance contingent — it must be the case that the attitude holder's corresponding factual commitments provide the evidential basis for their counterstance contingent beliefs, which in turn means that they must have independent evidence for those factual commitments. In the case of a

commitment to the counterstance contingent proposition that Kim is tall, then, this cashes out as an additional inference that the attitude holder has independent evidence about Kim's height.

The key contribution that we are making here is that we explain why subjective attitude attributions presuppose that the attributee has independent evidence about the relevant facts on the ground: insofar as factual commitments are not counterstance contingent, p is counterstance contingent only if the agent has direct evidence about the facts that matter for the truth of p.[9] This rules out that subjective attributes are inferred from premises that do not appeal to these facts, on testimony, or are more basic in some other way, and explains the contrasts in (48).

(48)   Lee has never eaten sea urchin, and has never seen anyone else eat it, but based on how much he likes other kinds of seafood, ...

    a.   # ... he finds it tasty.

    b.   # ... he considers it tasty.

    c.   ✓ ... he believes it to be tasty.

The crucial difference between (48a-b) and (48c) is that the latter does not presuppose that the proposition that sea urchin is tasty is counterstance contingent. The proposition that Lee is claimed to be committed to, then, is one that may remain constant across counterstances, e.g. the proposition that characterizes worlds in which the taste of sea urchin is in agreement with Lee's taste preferences. This is a proposition that can find evidential support from facts about Lee's experience with other kinds of seafood, in contrast to the counterstance contingent variants presupposed in (48a-b).

The remaining question is why, when it comes to *find* attributions, it is crucial that the relevant facts on the ground are experienced rather than, say, known by observation:

(49)   Lee has never eaten sea urchin, but based on his observation of the pleasure that all his friends clearly derive from eating it ...

    a.   # ... he finds it tasty.

    b.   ✓ ... he considers it tasty.

    c.   ✓ ... he believes it to be tasty.

(49c) is fine for the same reason as (48c) — the prejacent is not presupposed to be counterstance contingent in the first place — and the contrast between (49b) and (49a) shows that the experiential presupposition does not arise generally for taste predicates in the complements of subjective attitude verbs, but is rather a property of *find* embeddings in particular. In other words, it is a property of radical counterstance contingency rather than mere counterstance contingency.

And in fact, the acceptability of (49b) is consistent with what we have said so far. The proposition that sea urchin is tasty will count as merely counterstance

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[9]   A wrinkle: as shown by examples like (18) and (19) in Section 3, factual commitments can be counterstance contingent if they are based on shaky evidential grounds. But even here we do have a salient set of uncontroversial facts — how the stars looked at night, what is established about Goldbach's conjecture, and so on — and the attributee must have independent evidence about these for the subjective attitude attribution to make sense.

contingent, satisfying the definedness conditions on *consider* in (49b), if, for example, its truth varies across counterstances strictly as a function of different thresholds for *tasty*, and not (also) as a function of variation in experiential criteria of gustatory pleasure. As with the examples discussed above, the claim that Lee is committed to the truth of such a proposition comes with a commitment to facts on the ground that would support it; Lee's observations of his acquaintance's reactions to eating sea urchin counts as such evidence.

In contrast, the proposition that sea urchin is tasty will count as radically counterstance contingent, in accord with the definedness conditions on *find* in (49a), only if its truth varies as well across partitionings of the counterstance space based on factors that permit coordination by stipulation, which include thresholds of application. According to what we said above, to say that Lee is committed to the truth of a proposition that is counterstance contingent in this way is to also say that he has a corresponding set of factual beliefs as evidential basis, which in this case are factual beliefs about the taste of sea urchin. The final step in deriving the experiential inferences of *find* is then just the assumption that one cannot come to know how something tastes without tasting it, which we assume (along with other related assumptions about what it takes to know that such-and-such is the case) to be part of world knowledge that is not in need of further explanation by the semanticist.

Before moving to our account of the evidential inferences of unembedded assertions of taste and other subjective predicates, let us briefly discuss embeddings of subjective attitude verbs. So far we have focussed on positive belief attributions involving subjective attitude verbs, but as the following examples show, the negations of such attributions carry evidential requirements as well:

(50)   Kim has never tried sea urchin because...
    a.   # ... she doesn't find it tasty.
    b.   ✓ ... she doesn't believe it to be tasty.

(51)   Lee has never seen Kim, but he won't put her on the team because...
    a.   # ... he doesn't consider her tall.
    b.   ✓ ... he doesn't believe her to be tall.

The first thing to observe about these examples is that the evidential implications arise on so-called "Neg-raising" interpretations, whereby negation of the attitude verb is understood not as a denial that the attitude holder has the relevant attitude, but as an assertion that the attitude holder has the relevant attitude about the negation of the complement (see e.g. Fillmore 1963; Bartsch 1973; Horn 1989; Gajewski 2007; Collins and Postal 2014). Thus — when felicitous — (50a) communicates Kim's judgment that sea urchin is not tasty, and (51b) communicates Lee's judgment that Kim is not tall. This fits in well with our analysis, in which the at-issue content of *find* and *consider* is the same as *believe*, which — like doxastic attitude verbs in general — is also a Neg-raising predicate: (50b) is most naturally heard heard to communicate Kim's belief that sea urchin is not tasty, and (51b) to communicate Lee's belief that Kim is not tall.

The evidential implications of (50a) and (51a) therefore arise for the same reasons as the other examples we have been discussing, since these sentences characterize the attitude holders as being committed to belief in the counterstance-contingent propositions that sea urchin is not tasty and that Kim is not tall,

respectively. If we construct a context that promotes a non-Neg-raised interpretation — i.e., an interpretation in which what is denied is that the attitude holder has the relevant attitude towards the proposition expressed by the complement — then the evidential implications disappear:[10]

(52)   Kim has never tried sea urchin, so of course...
    a.   ✓ ... it's not the case that she finds it tasty.
    b.   ✓ ... it's not the case that she believes it to be tasty.

(53)   Lee has never seen Kim, so of course...
    a.   ✓ ... it's not the case that he considers her tall.
    b.   ✓ ... it's not the case that he believes her to be tall.

The complements in (52a) and (53a) are still required to be (radically) counterstance contingent (e.g., replacing *tasty* with *orange* in the former leads to unacceptability), but since these examples involve denials that the attitude holders are committed to the truth of the (radically) counterstance contingent propositions that the complements express, they do not give rise to the corresponding evidential implications about the attitude holders' having the appropriate evidential basis for those commitments.

More generally, what these examples show is that the evidential implications of subjective attitude verbs are not presuppositions, as examples like (50) and (51) initially suggest, but are rather parasitic on their doxastic commitments. This is shown quite clearly by the pair of examples in (54).

(54)   a.   If Kim finds sea urchin tasty, Lee will order some.
    b.   If Kim finds sea urchin tasty, Lee will order more.

(54a) would sound natural in a discussion about a future meal, as a description of one way in which Lee's plans are contingent on Kim's preferences. This utterance takes for granted that Kim already has a belief about the truth or falsity of the proposition that sea urchin is tasty, and triggers an evidential implication that Kim has direct experience with the taste of sea urchin. (54b), in contrast, might be uttered during a meal, after sea urchin has been ordered but before Kim has tried it, as a description of how Lee's further decisions are contingent on a belief that Kim has yet to form. This utterance does not trigger the implication that Kim has direct experience with the taste of sea urchin.

5.2 Assertion

In the previous section, we explained why counterstance contingent doxastic commitments come with distinct evidential requirements. Such commitments, in brief, require independent evidence about the relevant facts on the ground since every subjective stance entails the presence of some factual beliefs, and the latter must

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[10] Note that the existence of such interpretations provides a further argument against analyses of subjective attitude verbs in which they simply fix a parameter of evaluation of the embedded proposition to the denotation of the surface subject, as in Sæbø (2009). Such analyses incorrectly derive only the Neg-raising interpretation, since the subjective attitude verb has no semantic content.

serve as the evidential basis of the former (rather than vice versa) for the stance to be counterstance contingent in the first place. The evidential aspect of subjective attitude ascriptions thus flows from the evidential requirements of the kind of attitudes that these constructions are designed to ascribe, and it is straightforward to further elaborate on this story so that it also makes sense of the evidential aspect of plain assertions involving subjective predicates. Let us explain.

Ninan (2014), recall, accounts for the acquaintance inference of plain assertions involving subjective predicates by appealing to the principle that one should only assert what one knows. The principle is perfectly plausible but for our purposes we will go for the following, no less intuitive slogan:

(55)   **Assertion and belief**
        An assertion of ϕ in context c is an expression of belief in ϕ in c.

We remain agnostic on whether this principle just is what it means to be an assertion (see e.g. Bach and Harnish 1979), or whether it is a consequence of, or addition to, some other characterization of assertion (see MacFarlane 2011 for discussion). What we wish to add is that assertions may express counterstance contingent beliefs, and when they do, the speaker's opinion must be counterstance contingent as well. In particular, we claim that so-called "autocentric" assertions of subjective predicates are assertions of counterstance contingent beliefs. And since counterstance contingent beliefs impose certain evidential requirements on the attitude holder — for by now familiar reasons — the fact that subjective assertions carry a distinct evidential flavor follows right away.

The current proposal effectively reduces questions about the evidential flavor of subjective assertions to questions about the evidential flavor of subjective attitude ascriptions. Consider:

(56)   I have never tried sea urchin.
        a. # But I (don't) find it tasty.
        b. # It's (not) tasty.

The key claim here is that an assertion of (56b) expresses the very same doxastic state that is self-ascribed in (56a): a belief in a radically counterstance contingent proposition. Such beliefs, we have said, come with a distinct evidential requirement. Specifically, they require that the attitude holder have independent evidence about those facts on which the truth of the proposition depends — in the current case, how sea urchin tastes. Since one cannot know how sea urchin tastes without having tasted sea urchin, (56a) and (56b) are infelicitous.

Whether an assertion counts as subjective — and whether making it carries distinct evidential commitments in its wake — thus depends on whether it is interpreted as expressing a counterstance contingent belief. This makes the subjectivity of an assertion a context sensitive affair, and rightly so. Take as an example the two cases in (57).

(57)   a. Kim is Russian.
        b. Senator Jones won the debate.

An assertion of (57a) may be a simple statement of fact, but it will carry a distinct subjective flavor if Kim is, say, from Crimea. (57b), in turn, may articulate a

subjective impression of how Senator Jones performed in the debate; or it may state a plain fact about the post debate poll results. Doing the latter requires that one knows the polls, but not that one actually watched the debate; voicing the subjective opinion without knowing how the debate went, in contrast, would be a bit odd. And so on. What matters in all of these cases is whether the belief expressed counts as counterstance contingent or not — whether one thinks it possible to agree on all the facts with the speaker and yet disagree about the issue.

The question now is why an utterance of (56b) expresses a radically counterstance contingent belief as opposed to a just plain belief in the proposition that sea urchin is tasty. Our response, generalizing proposals by Barker (2002, 2013), is that assertions are proposals to coordinate on discourse parameters as well as proposals to coordinate on facts about the world. Assertions involving subjective predicates in particular are proposals to coordinate on discourse parameters some of which resist coordination by stipulation, and any such proposal will bring a suitable set of counterstances to the speaker's belief state into view. More precisely:

(58)   **Assertion, belief and coordination**

     a. An assertion of ϕ in context c expresses a counterstance contingent belief just in case it is a proposal to coordinate on a discourse parameter that is underdetermined in c.

     b. An assertion of ϕ in context c expresses a radically counterstance contingent belief just in case it is a proposal to coordinate on a discourse parameter that is contextually underdetermined in c and that resists coordination by stipulation.

On this picture, then, assertions express potentially counterstance contingent beliefs in virtue of their discourse effects. Since an assertion of (56b) coordinates on an experiential anchor and since such a parameter resists stipulation by coordination, it follows that (56b) expresses a radically counterstance contingent belief that sea urchin is tasty. Our principles about assertion then imply that the speaker has such a belief, which in turn triggers the evidential inference. The principles outlined in this section thus show how an explanation of the evidential requirement of subjective assertions is reducible to the evidential requirement of subjective attitude ascriptions.

We can also explain why the acquaintance inference may be canceled in exocentric uses or under the scope of the epistemic necessity operator. Neither (59a) nor (59b) suggest that the speaker has tasted the item under consideration.

(59)   a. My cat is happy because her new food is tasty.

     b. I have never tried sea urchin. But it must be tasty.

The simple and intuitive explanation here is that while both (59a) and (59b) articulate beliefs about taste, neither one of them expresses a counterstance contingent belief. (59a), in particular, anchors the application criteria of *tasty* to the cat's taste. This intuition can be elaborated in a variety of ways; what matters for us is that to disagree with the judgment is not to resist a proposal to refine some underdetermined experiential parameter, rather it is to deny that a certain type of food accords with the cat's tastes. Since this is a purely factual affair, no counterstance

contingent belief is expressed and hence there is no basis for deriving any distinct evidential requirements on behalf of the speaker.

A similar point can be made about (59b). While the exact analysis of epistemic *must* ($\Box_e$) is the subject of an ongoing debate, it is commonly accepted that this operator is a universal quantifier over a set of possible worlds compatible with with some salient body of information (see Kratzer 2012 and references therein for a recent discussion). A simple proposal is the following, where we once again will let this parameter to be provided by the index of evaluation:

(60) $[\![\Box_e \phi]\!]^{c,s} = 1$ iff for all $s' \in \mathbf{info}_s$: $[\![\phi]\!]^{c,s'} = 1$

Uses of epistemic *must* do not coordinate on an experiential anchor but an informational parameter. As such we do not expect the corresponding belief to be radically counterstance contingent, and insofar as it counterstance contingent, the issue is what counts as good indirect evidence for something being tasty.

There are two implications of this account are worth pointing out here. First, the way epistemic *must* plays with predicates of personal taste leads to cases in which ϕ is not assertible but its epistemically necessitated cousin $\ulcorner\Box_e\phi\urcorner$ is assertible (as noted by Ninan (2014)). This may just mean that epistemic necessities are logically weaker than the their plain cousins (see again Kratzer 2012, among others). Or it may mean that assertibility is not closed under logical entailment. To elaborate the latter view, we might define logical consequence over *proper* points of evaluation such that $s \in \mathbf{info}_s$, which guarantees that epistemic *must* is strong (as proposed by von Fintel and Gillies 2010). Importantly, the discourse context between discourse participants need not exclusively consist of proper indices, and so there are cases in which the truth of evaluative judgment is established in discourse — true at all proper indices — without the discourse participants having fully coordinated on the claim. Specifically, none of the discourse participants may be in a position to make the unhedged evaluative judgment.

The second implication is that one may believe that, for instance, sea urchin is tasty without being able to simply assert that sea urchin is tasty. This is because the belief may be based on indirect evidence and thus fail to be counterstance contingent. The assertion that sea urchin is tasty, in contrast, requires that the speaker has a radically counterstance contingent belief and thus must be in a distinguished evidential position. Only a hedged assertion is in accordance with the norms of assertion. This is empirically borne out, since there are cases in which a Kim can truthfully say that she believes sea urchin to be tasty but not just that sea urchin is tasty. All of these complicated data nicely fall in place in the framework developed here.

6 Conclusion

In this paper, we have proposed to model speakers' awareness of the arbitrariness of decisions about how to resolve uncertainty of meaning in terms of counterstances: sets of worlds which differ from an information carrier only in how such decisions are made. We have used this model to explain several key properties of subjective predicates: their distribution in the complements of subjective attitude verbs, the implications of direct experience that subjective attitude verbs introduce, and the

direct experience evidential conditions associated with assertions of unembedded subjective predicates. If our proposal is on the right track, it leads a reassessment of contemporary views on the nature of subjective language. Subjectivity does not correlate with semantic type or a formal feature of semantic interpretation, such as a designated perspectival argument, parameter, or mode of assessment. Instead, subjectivity is a fundamentally pragmatic phenomenon that emerges from the use of a descriptive but incomplete semantics by agents who are aware of the arbitrariness of the decisions they make to resolve uncertainty about meaning for the purpose of communication.

One topic that we have omitted from our discussion in this paper, which has played a prominent role in the literature on subjective meaning, is the phenomenon of so-called "faultless disagreement." This refers to the intuition that if Kim says that sea urchin is tasty and Lee responds that it is not tasty, they disagree and, moreover, neither of them need be "at fault" (see, for instance, Kölbel 2004; Lasersohn 2005, 2017; Glanzberg 2007; Stephenson 2007, 2008; Stojanovic 2007; Moltmann 2010; Sundell 2011; Barker 2013; Pearson 2013; Zakkou 2019). We have set this aside partly because it is a non-trivial question how exactly this kind of disagreement is to be characterized in theoretical terms (see, for instance, Plunkett and Sundell 2013 and MacFarlane 2014 for discussion), and partly because it is unclear whether the possibility of faultless disagreement has any distinct semantic implications once we allow for a sufficiently rich conception of the dynamics of conversation (see, for instance, Barker's (2013) model for negotiating contextual parameters and Khoo and Knobe's (2018) account of moral disagreements for such a conception). Here we just point out that our concept of counterstance contingency is clearly relevant for the broader understanding of faultless disagreement: treating an issue as counterstance contingent is just to say that the objective facts (whatever those are, according to the conversational context) do not select for a unique resolution of that issue, and intuitively it is exactly the absence of a single correct view on an issue that underwrites intuitions of faultless disputes. One important implication of this approach is that since counterstance contingency is a matter of what alternatives a discourse context provides, we predict faultless disagreement to be an essentially context sensitive phenomenon — just like the acceptability of certain predicates in the scope of SAVs. This prediction is supported by observations in Vardomsakaya 2018 and experimental results reported by Khoo and Knobe (2018) which show that whether a disagreement counts as faultless is crucially dependent on context and not tied to lexical items.

A comprehensive articulation of the implications of our proposals for faultless disagreement does not only require a precise account of what this phenomenon is supposed to be. Prior to that, we need a comprehensive story of the way that counterstances — and discourse alternatives more generally — interact with the norms that govern how we assert, reject, and evaluate utterances in everyday discourse. We must leave such a story for another day, but conclude that it is a story worth telling: if the proposal developed here is on the right track, the notion of a counterstance is bound to play an important role in our best theory of linguistic meaning.

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