# Subjectivity

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## The Plot

Natural language meaning, according to a prominent tradition in philosophy of language and linguistics going back at least to Frege and running through Montague, Davidson, Lewis and beyond, is to be explained in terms of truth-conditions. To say that gold has fewer stable isotopes than silver is to represent the world as being a certain way; to understand what has been said is to know what the world has to be like for what is said to be true (or false). Over the last few decades, truth-conditional semantics has proven to be an immensely fruitful research paradigm. And yet there exists a wide range of expressions that sit, on first sight anyway, somewhat uncomfortably with the idea that truth should be the key concept in modeling natural language meaning. That the question of truth or falsity arises for a sentence such as (1) should be uncontroversial, as it describes a state of affairs that either does or does not obtain. That the same can be said about a sentence such as (2) is less obvious: beauty, as the cliché goes, lies in the eye of the beholder, and hence there seems to be no fact of the matter resolving the question of whether (2) is true or false.

(1)    Jupiter is the largest planet in the solar system.

(2)    Jupiter is the most beautiful planet in the solar system.

Judgments about beauty, in other words, are matters of opinion rather than fact. The general point here is that many things we say and believe in our everyday lives, including aesthetic judgments but also judgments about taste and (perhaps) moral judgments, have SUBJECTIVE content: whether some planet is beautiful, activity is fun, or type of food is delicious is not settled by the facts on the ground but in some distinct sense "depends" on who you ask. The question then becomes how, if at all, we can make sense of such content from a broadly truth-conditional perspective on natural language meaning. This question has occupied a prominent place in the literature on philosophy of language and linguistics over the last twenty years or so.

I will begin by discussing, in Section 2, two prominent tests for a judgment being subjective, or having subjective content: (i) its capacity to figure in FAULTLESS DISAGREEMENTS and (ii) its capacity to be felicitously ascribable using SUBJECTIVE ATTITUDE VERBS. It then makes sense to ask whether these tests yield compatible results. I will then discuss, in Section 3, the two major proposals for analyzing the distinct perspectival dependence that subjective judgments seem to exhibit: (i) a type-theoretic approach and (ii) a family of analyses that model perspectival dependence as a special kind of contingency. Section 4 offers some concluding remarks.

# Testing for Subjectivity

## Faultless Disagreement

We have said that subjective judgments are matters of opinion rather than fact, and so it is natural to think that what makes some judgment subjective is that two or more individuals may have conflicting outlooks on the issue at hand without anyone being mistaken — subjective judgments, in brief, allow for what has become known as FAULTLESS DISAGREEMENT. Consider the following pair of judgment ascriptions:

(3)  a.  Alex thinks that tripe is tasty.

   b.  Mary thinks that tripe is not tasty.

Alex and Mary exhibit a disagreement in attitude, in the sense that they seem to have conflicting opinions about tripe: one thinks that tripe is tasty, and the other thinks it is not. But given suitable circumstances — and, in particular, if both Alex's and Mary's beliefs accurately reflect their differing tastes regarding tripe — neither is mistaken to hold the belief that they do.[1]

What is characteristic of (3) is that there is disagreement without anyone making a mistake. The case thus differs from (4), in which there is disagreement, but Alex does seem to be mistaken; and it also differs from (5), in which both Alex and Mary may both be right but do not disagree, as long as they live in different places.

(4)  a.  Alex thinks that tripe is vegetarian.

   b.  Mary thinks that tripe is not vegetarian.

(5)  a.  Alex thinks that tripe is served at a local restaurant.

   b.  Mary thinks that tripe is not served at a local restaurant.

The obvious suggestion would then be that the possibility of faultless disagreement tells us something important about the semantics of the predicates involved: *tasty*, but not *vegetarian*, is a PREDICATE OF PERSONAL TASTE and so its application conditions are sensitive to a perspective of some kind — hence whether tripe is tasty is a matter of opinion, but whether it is vegetarian is not. The contrast between (3) and (5) highlights, moreover, that the perspectival sensitivity of *tasty* (and related expressions) differs in kind from the context sensitivity that ordinary indexical expressions are known to exhibit. Thus Lasersohn (2017) suggests that the possibility of faultless disagreement is the hallmark of

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[1] Kölbel's (2004) classical discussion focuses on faultless disagreement in attitude, but the label may also be applied to disagreements in discourse, say situations in which one party asserts, while the other denies, that tripe is tasty. It is not obvious, however, that the two kinds of faultlessness phenomena carry exactly the same theoretical implications (see e.g. Lasersohn (2017, sec. 2.5) for critical discussion).

matters of opinion, and that a comprehensive account of subjective thought and talk ultimately calls for a revisionary RELATIVE notion of truth.

Whether faultless disagreements motivate relativism — or whether they even constitute the strongest case in favor of relativism — is a highly controversial issue that need not detain us here.[2] What matters for current purposes is the role of such disagreements as a test for subjectivity. Disputes about taste are, of course, prime examples of the subjective thus diagnosed, but the class of predications that can figure in intuitively faultless disputes goes beyond those involving predicates of personal taste, as the following examples highlight:

(6)   a.   Alex thinks that the Eiffel Tower is beautiful/interesting/tall/expensive to access.

      b.   Mary thinks that the Eiffel Tower isn't beautiful/interesting/tall/expensive to access.

(7)   a.   Alex thinks that John is fit/rich/strong/a graceful dancer.

      b.   Mary thinks that John isn't fit/rich/strong/a graceful dancer.

Faultless disagreements may thus involve not only predicates of personal taste (*tasty*, *fun*) but also gradable adjectives in the positive form (*tall*, *rich*), multi-dimensional adjectives (*fit*, *true gentleman*), as well as aesthetic adjectives (*beautiful*, *graceful*). What all of these expressions have in common is that they have a distinct "evaluative" flavor, in the sense that their application requires a decision as to what degree of height, wealth, beauty, or fitness an individual or object must meet to count as tall, rich, beautiful, fit, and so on.[3]

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[2] For relevant discussion see, among others, Kölbel 2004; Lasersohn 2005, 2017; Glanzberg 2007; Stephenson 2007, 2008; Stojanovic 2007; Moltmann 2010; Sundell 2011; Barker 2013; Pearson 2013; Plunkett and Sundell 2013; Zakkou 2019.

[3] One often hears is that uni-dimensional adjectives such as *tall* do not allow for faultless disagreement in the comparative: whether the Eiffel Tower is tall may be disputed without anyone being at fault, but not that it is taller than the Tower of Pisa. This stands in contrast with multi-dimensional adjectives, since one may not only faultlessly disagree over whether John is fit, but also over whether he is fitter than Charles. Still, this observation has to be taken with care: are the Petronas Towers taller than the Willis Tower? Alex says yes, Mary says no, and neither seems to be mistaken if, say, Alex follows the standard protocol of counting the spires but not the antennae while Mary thinks that neither or both should count. The underlying fact here is, of course, that the scale associated with a uni-dimensional predicate need not always be entirely uncontroversial. What remains true is that a multi-dimensional predicate such as *fit* requires the aggregation of multiple dimensions of measurements (strength, speed, body fat, etc.) into one and since people may differ on how to weigh these dimensions, multi-dimensional predicates introduce one potential source of (faultless) disagreement that their uni-dimensional cousins lack.

But it is important to notice that we cannot even stop here. Insofar as the possibility of faultless disagreement is concerned, subjectivity goes way beyond expressions that would pass as "evaluative" in any intuitive sense of the word. Ludlow (2014) relates to us a heated dispute as to whether the racehorse Secretariat is eligible for inclusion on *Sports Illustrated*'s "50 greatest athletes of the 20th Century." Some will insist that racehorses cannot be athletes; others may have a less restrictive conception of the meaning of *athlete*; and so it is possible for Alex and Mary to disagree on whether Secretariat is an athlete, even if both know perfectly well that Secretariat is a racehorse and are otherwise fully informed about the relevant facts on the ground.

(8)  a.  Alex thinks that Secretariat is an athlete.

     b.  Alex thinks that Secretariat is not an athlete.

Additional examples along these lines are easy to find. Is Pluto a planet? Is a hotdog an sandwich? Is Crimea part of Russia? People may — and in fact do — disagree on these and other issues, without anyone being obviously mistaken. And indeed, while it is hard to find a reasonable and fully informed person who would think that eating tripe is compatible with a vegetarian diet (and thus have any inclination to label the disagreement between Alex and Mary in (4) as potentially faultless), other questions about what counts as vegetarian are harder to resolve: what about licorice, if it is made with gelatine? Whether something qualifies as vegetarian or not may or may not be a matter of opinion, depending on the details of the case.

All of the previous observations are, of course, perfectly compatible with the suggestion that faultless disagreement phenomena will ultimately force us to rethink at least some of the classical assumptions that have dominated our semantic theorizing in the past. They do demonstrate, however, that the kind of subjectivity that the possibility of faultless disagreement seems to track cannot be tied to a distinct lexical category, such as predicates of personal taste or evaluative predicates more broadly.

## Subjective Attitude Verbs

Sæbø (2009) examines a distinct class of SUBJECTIVE ATTITUDE VERBS that includes English *find*, German *finden*, French *trouver*, and Swedish *tycka*. What is characteristic of these attitude verbs is that they require their complements to be subjective in a distinct way. Thus (9a) with English *find* is felicitous while (9b) and (9c) are not:

(9)  a.  Alex finds licorice tasty.

     b.  #  Alex finds licorice vegetarian.

     c.  #  Alex finds licorice plant-based.

Important to notice here is that English *find* does not felicitously embed *vegetarian* even though it is, as we have seen, in some respectable sense a matter of opinion whether licorice is vegetarian.

Kennedy (2013) draws attention to the fact that English *consider* is like *find* in rejecting fully objective predicates; at the same time, *consider* accepts predicates like *vegetarian* in addition to fully evaluative predicates like *tasty*:

(10) a.    Alex considers licorice tasty.

b.    Alex considers licorice vegetarian.

c. # Alex considers licorice plant-based.

Finally, observe then that a "vanilla" attitude verb like *believe* can be used to ascribe mere opinions as well as beliefs that seem to pertain to matters of fact. All of the following belief attributions are felicitous:

(11) a.    Alex believes licorice to be tasty.

b.    Alex believes licorice to be vegetarian.

c.    Alex believes licorice to be plant-based.

The proposal then is that a judgment is a matter of opinion just in case it can be felicitously ascribed using a subjective attitude verb such as English *find* or *consider*.

Two notes about this diagnostic for subjectivity are in order. First, it is more fine-grained than simply asking whether the issue under consideration can be the subject of a faultless disagreement. Reasonable and fully informed people may disagree as to whether licorice is vegetarian; but the opinion that licorice is vegetarian is not "subjective enough" to be felicitously ascribable using English *find*. The natural suggestion would then be that whatever can be the subject of a faultless disagreement is ascribable using *consider* — a matter of opinion — but that there is also a special kind of "deep" subjectivity that is tracked by English *find* and its cousins in other natural languages.

Second, there is some cross-linguistic variation in how restrictive the members of Sæbo's original list of subjective attitude verbs really are. According, to Ducrot (1980), the French example (12a) involving *trouver* is fine in a situation in which we are looking at a car so totaled that one cannot tell its make; the corresponding English construction is unacceptable, not least because English *find* requires its complement to be a small clause; but even the German analogue (12c) of Ducrot's example, which is at least grammatical, seems off.

(12) a.    Je trouver que c'est un Citroën.

b. # I find that this is a Citroën.

c. # Ich finde, das ist ein Citroën.

Such cross-linguistic variation is at least in principle unsurprising. We already saw, when discussing the contrast between English *find* and *consider*, that we have to distinguish between various kinds of subjectivity. So it may very well be that English *find* requires its complement to be deeply subjective, while French *trouver* is closer to (but not necessarily identical with) English *consider* in that it is subjective but less restrictive than *find*.

Specifically, it makes sense to say that what licenses *trouver* in Ducrot's example is that the speaker is only guessing the make of the car wreck. That renders the judgment subjective in the sense that other guesses may be as good as the speaker's, albeit not subjective enough to license an embedding under English *find* or German *finden*.

But even if we focus on a single language such as English, it must be admitted that speakers' intuitions are not always clear-cut. Concerning English *find*, for instance, McNally and Stojanovic (2017) hold that it felicitously embeds *tall*, while Kennedy (2013) describes (13a) to be marked. Umbach (2021) holds that while English *find* does not felicitously embed *healthy*, its German translation is fine; according to this author (and his informants), in contrast, both (14a) and (14b) are marked.

(13)  a.  ?? Alex finds Mary tall.

  b.  ?? Alex findet Mary groß.

(14)  a.  ?? Alex finds Mary healthy.

  b.  ?? Alex findet Mary gesund.

What complicates the empirical landscape here is that at least some gradable adjectives have a "qualitative" as well as a "quantitative" reading (Kennedy 2013). A trip may be long in the sense that its duration (or the distance covered) exceeds a certain threshold; it may also (due to its monotony, say) be experienced as taking a long time, and it is on this particular qualitative reading that one can find a trip to the airport long and tiring. So, part of the issue is whether the adjectives in (13) and (14) afford qualitative readings and how salient those readings are for the individual speaker.

Nonetheless, and as Sæbø (2009) stresses, the clear negative facts we observed at the beginning of this section call for a semantic explanation in terms of something that an attitude verb such as *find* requires and that a predicate such as *vegetarian* and *plant-based* lacks; moreover, they highlight the need for an account that is fine-grained enough to track the similarities as well as the differences between attitude verbs such as *find* and *consider*. We will explore the most prominent candidate explanations in the next section, but let me briefly touch upon a few additional issues before that.

## Additional Observations

It is natural to ask how our two tests for subjectivity are related, and I already suggested that whatever can be the subject of a faultless disagreement is ascribable using *consider*. Is the reverse true as well? The answer is not entirely straightforward. Consider the following case:

(15)  a.    Alex thinks that Goldbach's conjecture is unprovable.

  b.    Mary thinks that Goldbach's conjecture is provable.

Alex and Mary are in disagreement when it comes to the provability of Goldbach's conjecture. And the disagreement is not obviously a faultless one: either Goldbach's conjecture is or is not provable — there seems to be a mathematical fact of the matter, even though we do not know about it yet, and perhaps never will — and so either Alex or Mary must be mistaken. And yet both Alex's and Mary's attitude can be ascribed not only using *thinks* (as in (15)) and *believe* but also using the subjective attitude verb *consider*:

(16) a.     Alex believes that Goldbach's conjecture is unprovable.

     b.     Alex considers Goldbach's conjecture unprovable.

     c.     Mary believes that Goldbach's conjecture is provable.

     d.     Mary considers Goldbach's conjecture provable.

The intuitive difference between (16a) and (16b) — and similarly for the contrast between (16c) and (16d) — is that the latter suggests that Alex's opinion involves, as Kennedy and Willer (2022) put it, a "leap from the facts." Using *consider* instead of *believe* would be appropriate, for instance, in case Alex's opinion is an educated guess about the prospects of proving Goldbach's conjecture, based on what he knows about past efforts to establish the theorem. The plain belief-attribution in (16a) is certainly compatible with such an interpretation, but it is the use of *consider* that signals the opinion to be subjective in a distinct way.

One possible conclusion to draw here is that *consider* is able to track a flavor of subjectivity — albeit one that is a hard to pin down — that goes beyond the possibility of disagreement without error. Another is that we have to reflect on what we mean when we say that a disagreement is "faultless." As indicated above, if the requirement for faultlessness turns out to be that none of the disputants ends up getting the facts wrong, then the label cannot apply to the disagreement in (15). If, instead, what is needed is that both Alex's and Mary's opinions were formed in accordance with (or at least not in violation of) the norms governing the formation and retention of beliefs, the issue becomes less straightforward: at a minimum, there is (as of now anyway) no definitive way to tell who amongst the two is mistaken.

Still, it should be noted here that accommodating the full range of cases involving *consider* would require a lot of flexibility in the notion of faultlessness, as the following felicitous examples highlight:

(17) a.     Joseph Priestly considered oxygen dephlogisticated air.

     b.     In the Early Modern period, red hair was considered a sign of witchcraft.

The beliefs attributed in (17) have little to recommend for them; certainly there is a robust sense in which they manifest an error in judgment. Nonetheless — and this seems to be what the use of *consider* highlights in these cases — the error is not simply factual but grounded in a deeper commitment toward a certain worldview or scientific paradigm: a set of (perhaps unarticulated) background principles that guide our opinion-forming practices through commonsense assumptions and a conception of what counts as exemplary inquiry.

From the "perspective" of phlogiston theory or Early Modern folklore, the beliefs ascribed in (17) are well-founded; a change of mind would not so much require new evidence — in fact, since conflicting evidence may always be accommodated by tweaking the background theory, it is hard to see what such evidence should be — but a Kuhnian paradigm shift. So, a broad sense of faultlessness may be preserved even in these cases, given the mundane fact that norms governing belief formation and retention are themselves relative to frames of reference.

The question of whether our two tests for subjectivity can be made to align is, accordingly, not entirely trivial — perhaps unsurprisingly so, given how slippery the notion of faultless disagreement turns out to be on closer inspection (see e.g. MacFarlane 2014). What remains is that, at least as far as subjective attitude verbs are concerned, subjective content does not *per se* rule out the existence of some genuine facts that render the opinion at play true or false.

## Two Theories of Subjective Content

What makes a judgment subjective? The natural suggestion is that judgments are subjective insofar as they have subjective content, and that some bit of content is subjective just in case whether it is true depends, as it were, on who you ask. Theories of subjective meaning can be categorized based on how they take this perspectival dependence to be grammatically encoded: (i) on a type-theoretic approach, subjective predicate expressions differ from their non-subjective cousins due to the presence of a special judge argument; (ii) on a modal approach, judge-dependence is analyzed as a distinct kind of contingency across points of evaluation or information carriers. I will discuss these proposals in turn.

### The Type-theoretic Approach

#### The View

According to the type-theoretic approach, subjective predicates select for an *e*-type internal argument, e.g. given some index of evaluation $s$ (to fix ideas, let us say a world-time pair) and context $c$, *tasty* denotes a set of item-judge pairs — the set of $\langle x, y \rangle$ such that $x$ is tasty to $y$ at $s$ — while non-subjective predicate such as *gluten-free* simply denote a set of objects — those that do not contain any gluten at $s$, period.

(18) a.    $[\![tasty]\!]^{c,s} = \lambda x \lambda y . x$ is tasty to $y$ at $s$

 b.    $[\![gluten-free]\!]^{c,s} = \lambda x . x$ contains no gluten at $s$

Sæbø (2009) demonstrates that a type-theoretic approach thus construed can conspire with a simple and elegant analysis of English *find* (and its cousins in other languages such as German and Swedish) to explain some of the earlier observed selectional restrictions of subjective attitude verbs. The idea here here is that the semantic role of *find* is to feed its subject to the internal judge argument slot of its complement:

(19) $[\![find \phi]\!]^{c,s} = \lambda x . [\![\phi]\!]^{c,s}(x)$

This, of course, can only be done if there actually exists an internal judge argument slot left to be filled. We can then readily explain why a construction such as (20a) leaves nothing to be desired while (20b–c) are marked.

(20) a.　John finds sea urchin delicious.

　　 b. #　John finds sea urchin delicious to Mary/Charles/himself.

　　 c. #　John finds sea urchin gluten-free.

In all of these cases, according to (19), the attitude verb *find* supplies John as an argument to the complement. Given the semantics in (18a), the complement in (20a) happily accepts John as the still missing judge argument, and the whole judgement ascription then evaluates to true just in case sea urchin is tasty to John (at the relevant index of evaluation). In contrast, (20b–c) are marked due to a TYPE MISMATCH. In (20b) the judge argument has already been filled by the object of the prepositional *to*-phrase, and so there simply is no slot left to be filled by the subject of the *find*-attribution. And given (18b) the denotation of *sea urchin (is) gluten-free* in (20c) never had an open judge argument to begin with. All of this is excellent news.

## Problems of Scope

Type-driven approaches face two kinds of difficulties (see Willer and Kennedy 2022b for discussion). First, there is little evidence that embeddability under *find* requires the presence of some *e*-type internal argument, at least once the full range of relevant data has come into view. That *some* predicates which embed under *find* — specifically, predicates of personal taste — afford such an argument seems quite plausible, not least because here a judge can be can be expressed overtly (in English) using a *to*- or *for*-headed judge prepositional phrase. (That such overt judge phrases pattern with arguments rather than with adjunct phrases has been argued by Bylinina (2017).)

(21) a.　Sea urchin is tasty to John.

　　 b.　Indoor soccer is fun for Mary.

That *all* predicates that embed felicitously under *find* come with a judge argument is a claim that enjoys much less empirical support. Specifically, it seems as if English *find* happily embeds moral, aesthetic, and character trait predicates in addition to predicates of personal taste:

(22) a.　Pogba reminds me of Özil. I find him lazy and inefficient.

　　 b.　I find typical HDR images garish and cartoonish.

　　 c.　Mary finds cheating unforgivable.

Predications involving expressions such as *lazy*, *inefficient*, *garish*, *cartoonish*, and *unforgivable* have a distinctly subjective flavor, for sure; one may even propose that, together with predicates or personal taste, these expressions share the commonality that their use indicates the presence of a broadly affective attitude, i.e. an experience, sentiment,

emotion, or other cognitive episode that results from "being struck" by some object or event in a certain way.[4] But we cannot conclude on these grounds alone that all of these predicates come equipped with some internal judge argument. For starters, such an account is accompanied by some substantial philosophical baggage, as it suggests that the properties denoted by these expressions — including moral properties — never apply to objects simpliciter but only relative to some judge.

The issue is not only conceptual, but also empirical. In contrast with what we saw earlier for *tasty* and *fun*, no judge argument can be overtly expressed with grace when it comes to the predicates occurring in (22). None of the following constructions easily roll off the tongue:

(23) a. #  Pogba is lazy and inefficient to/for John.

   b. #  Typical HDR images are garish and cartoonish to/for me.

   c. #  Cheating is unforgivable to/for Mary.

Any attempt to tie embeddability under English *find* to the presense of an internal judgment argument must explain why no such judge can be overtly expressed for a large class of expressions that qualify as subjective in the relevant sense.[5]

Another relevant observation (already briefly noted in Section 2.2) is Kennedy's (2013) distinction between qualitative and quantitative readings of gradable adjectives. Thus the examples in (24a) involving *heavy*, *light*, and *dense* can be read as expressing two kinds of judgments: one on which some measurable quantity like the weight of the cake is above

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[4] Thus Franzén (2020) suggests that attitudes that can be ascribed using *find* are affective states of mind; these include, according to Franzén, moral attitudes. Stojanovic (2019) maintaints that while moral predicates can embed under *find*, speakers still have a preference for ascribing moral attitudes using less subjective attitude verbs, such as *believe* (see Stojanovic and McNally 2023 for a corpus study supporting this claim). McNally and Stojanovic (2017) note that in a study of the British National Corpus, embeddings of aesthetic adjectives under *find* are relatively uncommon. Why that should be so is an interesting question; for sure it is natural to think that matters of morals (or, perhaps, aesthetic affairs) have less of a subjective flavor than simple matters of taste. But these observations do not necessarily point to a semantic distinction but could be due to the fact that, for instance, there is greater pragmatic pressure to coordinate on moral issues than on matters of pure taste (Kölbel 2004).

[5] This also seems true for the suggestion that *find* coerces its complement in having an experiencer-argument (McNally and Stojanovic 2017; Stojanovic 2019): why, one would ask, is such coercion not possible in (23a–c)? It is worth noting here that natural language provides the means to communicate that the judgments in question are someone's opinion or point of view. To do so, however, one must resort to periphrastic constructions such as "according to John" or "in my opinion." For related discussion, see Bylinina 2017 of the contrast between thematic and non-thematic "judges" in Russian.

some threshold; and one on which the cake has a certain quality such as being being heavy or light to the taste. Importantly, due to the embedding under *find*, only a qualitative reading is available in (24b), while the example involving *consider* in (24c) is compatible with both.

(24) a.  This piece of cake is heavy/light/dense.

b.  I find this piece of cake heavy/light/dense.

c.  I consider this piece of cake heavy/light/dense.

But again there is no reason to think that a qualitative reading of *heavy* could differ in semantic type from a quantitative one, as both have essentially the same syntactic distribution, with (lack of) embeddability under *find* being the one exception. So while qualitative and quantitative readings are distinct in a way that is highlighted by the subjective attitude verb *find*, we have no reason to think that the difference is type-theoretic in nature.

The second issue with a type-theoretic approach is that its explanatory scope appears a bit limited, in that it can hardly be generalized to account for the full variety of subjective attitude verbs that natural languages provide. Earlier we observed that a predicate such as *vegetarian* is subjective "enough" to embed felicitously under English *consider* but not under *find*. At the same time, *consider* is like *find* (and unlike *believe*) in rejecting fully objective predicates.

(25) a. #  Alex finds licorice vegetarian.

b.  Alex considers licorice vegetarian.

c.  Alex believes licorice to be vegetarian.

(26) a. #  Alex finds licorice plant-based.

b. #  Alex considers licorice plant-based.

c.  Alex believes licorice to be plant-based.

A syntactic or type-theoretic approach does not easily generalize to capture the more fine-grained differences between *find* and *consider*. It would need to assign to *vegetarian* a type so that this expression — unlike *plant-based* — embeds felicitously under consider but — unlike *tasty* or *fun* — fails to embed felicitously under *find*. The concern is that we end up with an implausible proliferation of semantic types.

One important factor here is that embeddability under English *consider* is a heavily context-sensitive affair. Take the contrast between the following two cases:

(27) a.  Kim considers Western Sahara part of Morocco.

b. #  Kim considers Anjou part of France.

While (27a) is a quite natural thing to say, (27b) is likely to cause raised eye-brows. The intuitive explanation here is that the sovereignty over Western Sahara is disputed, while Anjou being part of France qualifies as an objective fact in context. But this difference does not seem to be a matter of semantic type but rather a question of what kind of world knowledge discourse makes available.

## Modal Proposals

### Basics

MODAL proposals model perspectival dependence as a special kind of contingency. This idea has been articulated in a variety of ways; it can be easily illustrated in a setting that assigns semantic values relative to a separately provided judge parameter (as in, e.g., Lasersohn 2005, 2017). Suppose then that propositions are true at triples consisting of a world, time, and judge: we may then ask whether the truth of the proposition is actually sensitive to the choice of a particular judge.

(28) A proposition $p$ is JUDGE-INVARIANT just in case for all worlds $w$, times $t$, and judges $j$ and $k$: $p$ is true at $\langle w, t, j \rangle$ just in case $p$ is true at $\langle w, t, k \rangle$.

So intuitively, the proposition that Jupiter is the largest planet in the solar system is judge-invariant, since its truth depends on the choice of a world and time of evaluation, but not on who the judge is. The proposition that Jupiter is the most beautiful planet in the solar system, in contrast, does appear to be a judge-sensitive affair.[6]

Suppose then, again following a proposal explored (but, ultimately rejected) by Sæbø (2009), that the job of English *find* is to fix the subject as the judge who is relevant for evaluating the truth of the complement:

(29) $[\![ \text{find } \phi ]\!]^{c, \langle w,t,j \rangle,} = \lambda x. [\![ \phi ]\!]^{c, \langle w,t,x \rangle}$

Then the proposal would be that what makes a construction such as "Alex finds licorice plant-based" odd is that *find* makes a vacuous semantic contribution: it shifts the judge, but who the judge is does not matter for the question of whether licorice is plant-based. "Alex finds licorice tasty," in contrast, is fine since matters of taste are judge-sensitive affairs.

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[6] It is worth noting explicitly at this point that a modal approach does not *per se* rule out postulating a type-theoretic difference between subjective and non-subjective predicates. Stephenson (2007, 2008) indeed proposes that predicates of personal taste come with a dedicated argument that other predicates lack and that can be fixed by the judge parameter of an index of evaluation. Such hybrid approaches naturally have more explanatory resources at their disposal than their "pure" alternatives but also inherit all of their intrinsic challenges. Specifically, hybrid approaches would still have to address the previously discussed empirical problems with claiming that all subjective predicates afford an internal judge argument.

The key idea here is that what makes an attitude verb subjective is that it presupposes the judge-sensitivity of its complement. Insofar as embeddability under a subjective attitude verb is the hallmark of subjective content, subjectivity thus understood becomes a matter of contingency analogues to the more familiar sensitivity of truth to the particular choice of some world and time of evaluation.

Modal analyses of perspectival dependence have various incarnations, and need not assume that judges are respectable parameters of evaluation — more on this momentarily. For now, it is useful to elaborate the existing approach further to highlight one advantage of a modal approach over its type-theoretic alternative. Earlier we saw that the difference exhibited by English *find* and *consider* in their selectional restrictions suggests that subjectivity is a matter of degree: some predicates are subjective enough to embed happily under *consider*, but not under *find*. This is not surprising from a modal perspective: modality comes in various flavors, and so in principle we would expect subjectivity to do the same. Here are some initial steps toward a concrete proposal, building on (28).

Assume that context provides us with (at least) two kinds of (for our purposes reflexive, symmetric, and transitive) accessibility relations $R_1$ and $R_2$ between judges such that $R_1 \subseteq R_2$; given some accessibility relation $R$, define $R[j] = \{k: jRk\}$ as the set of judges accessible from $j$. We then slightly revise the initial proposal in (28) as follows:

(30) a.  A proposition $p$ is SHALLOWLY INVARIANT with respect to some judge $j$ just in case for all worlds $w$, times $t$, and judges $k, k' \in R_1[j]$: $p$ is true at $\langle w, t, k \rangle$ just in case $p$ is true at $\langle w, t, k' \rangle$.

b.  A proposition $p$ is DEEPLY INVARIANT with respect to some judge $j$ just in case for all worlds $w$, times $t$, and judges $k, k' \in R_2[j]$: $p$ is true at $\langle w, t, k \rangle$ just in case $p$ is true at $\langle w, t, k' \rangle$.

Invariance is now defined relative to a judge parameter that fixes a domain of quantification in context, and since $R_1 \subseteq R_2$ by design it makes sense to distinguish between shallow and deep invariance with respect to $j$, depending on whether we quantify over $R_1[j]$ or over $R_2[j]$.

For convenience, we may also define two distinct kinds of contingency.

(31) a.  A proposition $p$ is SHALLOWLY CONTINGENT with respect to some judge $j$ just in case for some worlds $w$, times $t$, and judges $k, k' \in R_2[j]$: $p$ is true at $\langle w, t, k \rangle$ but false at $\langle w, t, k' \rangle$.

b.  A proposition $p$ is DEEPLY CONTINGENT with respect to some judge $j$ just in case for some worlds $w$, times $t$, and judges $k, k' \in R_1[j]$: $p$ is true at $\langle w, t, k \rangle$ but false at $\langle w, t, k' \rangle$.

Since $R_1 \subseteq R_2$, contingency over $R_1[j]$ goes deeper than contingency over $R_2[j]$.

The natural proposal then is that English *find* and *consider* are alike in that they fix the subject as the judge with respect to which the truth of the complement is to be evaluated. They differ in their presuppositions in that *find* requires the complement to be deeply

contingent with respect to the subject, while *consider* merely requires shallow contingency with respect to the subject.[7]

## Contingency and Coordination

So far we have merely arrived at a formal response to the question of how *find* and *consider* differ in their selectional restrictions. The pressing question now becomes how discourse grounds the difference between shallow and deep subjectivity and thus fixes $R_1$ and $R_2$ in context. Kennedy and Willer (2016, 2022) propose to analyze the difference using the notion of COORDINATION BY STIPULATION. Start with the following observation about issues that carry a distinctly subjective flavor: that at least some of them can be resolved using stipulative discourse moves.

(32)  For present purposes,

     a.    let's count race horses as athletes.

     b.    let's count licorice as vegetarian.

Here "for present purposes" refers to some salient practical task whose execution somehow requires categorization of objects according to whether they satisfy the predicate, such as the compilation of a list of top athletes or deciding what edibles to serve at a party.

But, Kennedy and Willer suggest, coordination by stipulation is not always possible even when the issue under consideration is clearly subjective, as the following examples indicate.

(33)  For present purposes,

     a.  #  let's count licorice as delicious.

     b.  #  let's count cheating as unforgivable.

     c.  #  let's count this player as lazy.

     d.  #  let's count HRD images as garish.

While one may always try to make others "see things" the way oneself does, it is plain odd to propose to simply stipulate some criterion as the basis for establishing a conversational convention for predicates such as *delicious*, *unforgivable*, *lazy*, or *garish*.

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[7] One direct implication here is that what proposition counts as purely world-dependent is a matter of context and specifically in the right context, a proposition about the (un)provability of Goldbach's conjecture must pass as shallowly contingent if the data in Section 2.3 are robust. This is in principle unproblematic given the abstract nature of the apparatus — though alternative articulations of the modal paradigm (to be discussed in Section 3.2.4) may be more illuminating. But it does suggest that we need to flesh out what the apparatus is tracking, exactly, which is the task of the next section.

The suggestion would then be that it is the hallmark of predicates that embed under English *find* that they resist coordination by stipulation thus understood. If this proposal is on the right track, we may suggest that context fixes accessibility between judges along the following lines.

(34) a.  In context $c$, $k \in R_2[j]$ just in case $k$ agrees with $j$ on all salient matters of fact in $c$.

b.  In context $c$, $k \in R_1[j]$ just in case $k \in R_2[j]$ and $k$ agrees with $j$ on all matters of opinion that can be resolved by stipulative discourse moves in $c$.

One may still wish to ask: why is an expression's meaning underdetermined in a way that allows, or does not allow, for coordination by stipulation? What is it about the predicates in (32) that leads to the possibility of coordination by stipulation, and what is it about the predicates in (33) that rules it out? Muñoz (2019, 274, fn. 44) suggests that those aspects of meaning that cannot be stipulated are precisely those that relate to individual experience, but we have seen that not all expressions that embed under *find* are experiential — at least not in a way that does not strip that notion of any theoretical value beyond its utility for accounting for subjective attitude verbs.

A more general approach would suggest, drawing some inspiration from Lasersohn (2017), that while discourse contexts determine a world and time of evaluation, they fail to fix a particular judge. In fact any individual, regardless of whether or not they are participating in the conversation, counts as a potential candidate for filling that role, from which it follows that no utterance situation uniquely determines the extension of a judge-dependent predicate: there are as many possible ways of answering whether something counts as tasty in a concrete utterance situation as there are possible judges. In contrast, other kinds of underdetermination are only incidental. Take vagueness: whether an individual counts as *tall* depends on whether their height exceeds a contextual threshold; whatever fixes that threshold — the salient comparison class, the interests or expectations of the discourse participants, etc. — is not uniquely determined in context; but the facts about the discourse situation, together with general principles of informativity, nevertheless constrain the threshold in systematic and predictable ways (see e.g. Lassiter and Goodman 2013; Qing and Franke 2014). A particular context may, for instance, leave it underdetermined whether 6 feet is tall but definitively settle 7 feet as tall and 5 feet as not tall.

The suggestion then is that some predicates resist coordination by stipulation since they are essentially underdetermined: alternative stances are salient no matter the context, and thus any such discourse move is bound to fail. In contrast, transitioning to a context with a single determinate stance on the matter is at least a possibility if the underdetermination at play is a merely incidental affair.

A coordination-based approach may not be the only (or even best) way of grounding the phenomenon that *find*- and *consider*-style subjective attitude bring into view. But any comprehensive linguistic theory must recognize and account for the two kinds of subjectivity that these lexical items track.

## Composition

Sæbø (2009) observes a set of empirical contrasts that prove to be problematic for any modal account and, on first sight anyway, seem to favor a type-driven approach. The problem, in brief, is that subjective contents do not compose in the way we would expect if a modal approach were on the right track. Consider the following set of cases, in which the complement of the *find*-construction sometimes shows a greater degree of syntactic complexity than what we have seen before.

(35)  a.    Kim finds Lee attractive.

     b.    Kim finds Lee attractive and pleasant.

     c.  #  Kim finds Lee attractive and unmarried.

(36)  a.    Kim finds everyone/someone/Lee pleasant.

     b.    Kim finds everyone who is unmarried pleasant.

     c.  #  Kim finds everyone who is pleasant unmarried.

The problem here is that if *Lee is attractive* is deeply contingent with respect to Kim — as required by the felicity of (35a) — then so will be any conjunction involving that expression as a conjunct (if consistent in the first place). So, if *Lee is attractive and pleasant* is true at some $\langle w, t, k \rangle$ at all, then it expresses a proposition that is deeply contingent with respect to $k$ just in case *Lee is attractive* expresses such a proposition. Accordingly, a modal approach predicts that *Lee is attractive and pleasant* embeds felicitously under English *find*, contrary to the facts (compare (35c)).

Similarly, given that *everyone who is pleasant* expresses a deeply contingent proposition (compare (36a)), so should *everyone who is unmarried is pleasant*, which is borne out empirically. But the same is true for *everyone who is pleasant is unmarried*, and this is not a correct prediction (compare (36c)).

Sæbø 2009 furthermore shows that a type-theoretic account promises to provide an explanation of these contrasts. A subjective predicate like *pleasant* is type-wise distinct from a non-subjective one such as *unmarried*, and so assuming that conjunction requires likeness of semantic type, the internal judge argument of the former must be saturated before it can conjoin with the latter. But this means that unlike *attractive and pleasant* — which can compose before their respective internal arguments are saturated — *attractive and unmarried* in (35c) is of the wrong semantic type to compose with *find*. To account for the contrasts in (36), Sæbø assumes that the subject DP undergoes Quantifier Raising (QR): then the judge argument of *pleasant* is still missing when the embedded clause meets the subjective attitude verb, as required, in (35b); but *unmarried* does not have such an argument slot to begin with, and hence (36c) is predicted to be marked. (If there were no QR in (36c), the judge argument of *pleasant* would have to be filled to coordinate with *unmarried* before it can compose with *find*, once again leading to a type clash.)

Willer and Kennedy (2022b) propose a strategy for addressing the challenge from composition from a modal perspective. On their story, (deep or shallow) contingency is a necessary condition for embeddability under *find*, but it is not sufficient: the proposition expressed must also be contingent for the right reasons. In the case of conjunction, both conjuncts must be suitably contingent; if a quantifier is involved, the relevant contingency must flow from the contingency of the scope, not the restrictor, i.e. from the at-issue content rather than the not-at-issue content. Using ideas from the dynamic semantic literature, one can provide update rules for quantifiers and propositional connectives that correctly predict when subjective content "projects" and when it does not, in a way that captures the contrasts like those in (35) and (36).

While addressing the problem of composition in a modal setting introduces additional complexities — unlike in a type-theoretic account, which promises to deliver the right results almost for free — doing so has (once again) the advantage of increased scope. In particular, the problem of composition is just as real for *consider* as it is for *find* (Willer and Kennedy 2022b).

(37)  a.      Kim considers Lee vegetarian.

      b.      Kim considers Lee vegetarian and intelligent.

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

(38)  a.      Kim considers everyone/someone/Lee vegetarian.

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

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

The cases in (37) and (38) involving *consider* exhibit the same pattern as those involving *find* in (35) and (36). Assuming that shallow and deep contingency project in the same way, this is just what we expect in a modal setting. In contrast, insofar as embeddability under *consider* cannot be a matter of semantic type (cf. Section 3.1.2), a type-theoretic analysis does not generalize to explain the similarity.

### Implementations

I have chosen to illustrate the modal approach using an account that assigns to sentences truth-values relative to some judge parameter. Setting things up this way has the advantage of being quite familiar from the relativist literature on faultless disagreement and predicates of personal taste, and allowed us to put a familiar gloss on the thesis that perspectival dependence is a kind of contingency using notions such as points of evaluation and accessibility relations. But it is not the only way of spelling out the modal paradigm.[8]

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[8] In addition to the authors noted below, Bouchard (2012), Reis (2013), and Silk (2019) also suggest that *find*-type subjective attitude verbs require their complement to be contingent in a distinct way.

Kennedy and Willer (2016, 2022), in particular, start with the observation that ordinary agent's doxastic states have a pragmatic dimension to them, in the sense that some beliefs flow from the agent's pragmatic stance on how certain facts are to interpreted.[9] To capture this feature of everyday belief states, they suggest that context provides a function $\kappa$ that tracks the contingency of the pragmatic decisions involved in achieving an information state. $\kappa$ takes an information carrier $i$ and derives a set $\kappa(i)$ of $i$'s COUNTERSTANCES: alternative information states which agree on a contextually salient basis of matters of fact but take conflicting pragmatic stances on these matters. So for instance, a state $i$ and its counterstances would agree on some food's ingredients but may disagree on what it takes for an ingredient to count as vegetarian or on which of those ingrediens are tasty, and so on. A proposition $p$ is COUNTERSTANCE CONTINGENT with respect to $i$ just in case its commitment is not preserved across $\kappa(i)$; it is RADICALLY counterstance contingent with respect to $i$ just in case it remains contingent over the counterstances to $i$ that agree on issues that may be resolved by stipulative discourse moves.

In contrast to all of the proposals we explored in the previous section, Kennedy and Willer insist that subjective attitude verbs do not merely fix a judge parameter (or provide some judge argument) but are at their at-issue content just like *believe*. Subjective attitude ascriptions are thus at their core belief attributions. They differ from *believe* in their presuppositions: *consider* presupposes the counterstance contingency, and *find* the radical counterstance contingency, of its complement with respect to the attributee's doxastic state.

Coppock (2018) 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. 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 to be discretionary, i.e. vary in truth-value across the outlooks corresponding to a single world. Coppock's proposal does not explicitly address the more fine-grained differences between *find*- and *consider*-type subjective attitude verbs, but nothing about it rules out the possibility of a suitable refinement (see Willer and Kennedy (2022b Section 5) for a story about how to do this).

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[9] See also the discussion by MacFarlane (2016), who suggests to give the familiar slogan that "vagueness is semantic indecision" (see e.g. Lewis 1986) a thoroughly pragmatic gloss: the indecision at play here — and, accordingly, any resolution of such indecision — is a practical state that concerns plans and intentions rather than ordinary beliefs.

# Conclusion and Outlook

I have treated the phenomenon of faultless disagreement as a diagnostic for subjective content but remained silent on its analytical implications, not least because the phenomenon by itself leaves it radically underdetermined what those implications should be and whether they are best understood to be semantic or pragmatic in nature. All of the analyses that have been explored here in depth are, in fact, compatible with a wide variety of approaches that have been developed in the literature. For a type-theoretic approach, for instance, the question might be whether internal judge arguments are fixed by the context of assessment (the standard relativist move) or, alternatively, by the context of utterance, but in a way that is fluid enough to account for faultless disagreement intuitions. For an analysis such as Coppock's (2018), it is natural to model disagreement as a matter of incompatibility between propositions understood as a set of outlooks, and then add that such disagreement has the air of faultlessness if the propositions at play are discretionary in nature. Clearly, similar maneuvers are available for other modal accounts.

In general, the literature now provides various ways of making sense of subjectivity that are compatible with the truth-conditional research paradigm in philosophy of language and linguistics. Introducing some form of judge-sensitivity (with judges entering the game as arguments or parameters) is one way to go, but in frameworks such as Kennedy and Willer's (2016, 2022) subjective predicates have ordinary extensions at possible worlds and their subjectivity is modeled using contextually salient doxastic alternatives.

Let me conclude by touching upon one further issue of prominence: the observation that using a subjective predicate to describe an object gives rise to an ACQUAINTANCE INFERENCE in that it typically conveys that the speaker has a certain kind of direct connection to relevant features of the object (see, e.g., Mothersill 1984; Pearson 2013; MacFarlane 2014; Ninan 2014; Franzén 2018; Muñoz 2019). Speakers who lack the relevant experience should choose a hedged over a straight assertion.

(39)  I have never tried *trippa alla romana*.

    a.  # It's (not) tasty.

    b.  I hear it's (not) tasty.

(40) I have never played indoor soccer.

    a.  # It's (not) fun.

    b.  It must (can't) be fun.

This is noteworthy since many other predicates lack a similar direct experience component: a straight assertion that *trippa alla romana* is (or is not) vegetarian can be formed on the basis of testimony, for instance.

The acquaintance inference also arises if a predicate of personal taste is embedded under English *find* but not under *believe* (or *think*).

(41)  I have never tried *trippa alla romana*.

    a.  #  I don't find it tasty.

    b.      I don't believe it's it tasty.

(40) I have never played indoor soccer.

    a.  #  I (don't) find it fun.

    b.      I don't think it's fun.

Kennedy and Willer (2022) add the observation that felicitous uses of English *consider* also imply that the attributee is suitably opinionated about relevant features of the object, though in ways that differ from *find*.

Acquaintance inferences have received quite a bit of attention in the literature, at least when it comes to the basic phenomena surrounding statements about taste. Part of the interest here stems from the fact that these inferences pattern in some but not all respects with ordinary presuppositions: like presuppositions, they project under the scope of negation, as highlighted by (39a) and (40a); unlike presuppositions, they disappear under the scope of epistemic *must*, as highlighted by (40b). Ninan (2014) tries to make sense of all this by appealing to general epistemic constraints on what can be asserted in discourse; Pearson (2013), Anand and Korotkova (2018), Ninan (2020), and Willer and Kennedy (2022a) offer accounts that treat acquaintance inferences as an essentially presuppositional affair after all. Finally, Kennedy and Willer (2022) derive the familiarity implications of subjective attitude attributions from their characteristic contingency presuppositions, and then propose to explain the phenomena surrounding subjective assertions on that basis.

Philosophers and linguists have traditionally been drawn to subjective thought and talk due to its potential implications for foundational questions about natural language semantics and pragmatics. In recent years, the range of research questions has expanded beyond the significance of faultless disagreement and toward the analysis of subjective attitude verbs and of the acquaintance inference. While much progress has been made, a lot of important issues remain to be addressed. Specifically, while we now better understand how acquaintance inferences can be presuppositions and still project (or fail to project) the way they do, we still do not fully understand how these inferences arise in the first place and why they arise specifically for subjective predications.

Another path for further research is whether all natural languages contain lexical items that are sensitive to subjective content, and to what extent, if any, all natural languages care about the distinction between the two kinds of subjective content that we have identified for English and other Germanic languages. Relatedly, it remains to be seen whether the categorization of subjective attitude verbs into *find*- and *consider*-type expressions is truly exhaustive.

The subject matter of this handbook article makes it fitting to conclude on a subjective note: I strongly commend the phenomenon of subjectivity to further reflection and empirical investigation.[10]

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