

# Assertion, Expression, Experience\*

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## Abstract

It has been frequently observed in the literature that assertions of plain sentences containing predicates like *fun* and *frightening* give rise to an acquaintance inference: they imply that the speaker has first-hand knowledge of the item under consideration. The goal of this paper is to develop and defend a broadly expressivist explanation of this phenomenon: acquaintance inferences arise because plain sentences containing subjective predicates are designed to express distinguished kinds of attitudes that differ from beliefs in that they can only be acquired by undergoing certain experiences. Its guiding hypothesis is that natural language predicate expressions lexically specify what it takes for their use to be properly “grounded” in a speaker’s state of mind: what state of mind a speaker must be in for a predication to be in accordance with the norms governing assertion. The resulting framework accounts for a range of data surrounding the acquaintance inference as well as for striking parallels between the evidential requirements on subjective predicate uses and the kind of considerations that fuel motivational internalism about the language of morals. A discussion of how the story can be implemented compositionally and of how it compares with other proposals currently on the market is provided.

## 1 The Plot

This paper addresses a puzzling feature of PREDICATES OF PERSONAL TASTE, adjectives such as *tasty*, *fun*, and *frightening*. It has been frequently observed in the literature that assertions of plain sentences containing such adjectives give rise to a distinct ACQUAINTANCE INFERENCE: they imply that the speaker has *first-hand experience* of the item under consideration. For instance, an utterance of “*Sea urchin is tasty*” typically suggests that the speaker has actually tasted sea urchin, as the following dialogue in a Japanese restaurant illustrates.

- (1) Alex: You should get sea urchin. It’s tasty.  
Mary: Is that what you usually get?  
Alex: ?? No, I’ve never tried it.

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In contrast, a straight assertion that, for instance, goma dofu is gluten-free does not imply that the speaker has ever tried goma dofu; it may express an opinion formed on the basis of testimony.

Part of the puzzle here is that the acquaintance inference projects out of negation, as the following variant of our first example shows:

- (2) Alex: Don't get sea urchin. It's not tasty.  
Mary: When did you try it?  
Alex: ?? I've never tried it.

Hedging, however, cancels the inference, as (3) highlights; so do “exocentric” uses (cf. (4)) that are anchored 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 tastes and sensibilities (see [Lasersohn 2005](#)).

- (3) Apparently, sea urchin is tasty... ✓ but I've never tried it.  
(4) That cat food is tasty... ✓ though of course I have never tried it myself.

These data have been discussed by [Pearson \(2013\)](#), [MacFarlane \(2014\)](#), [Ninan \(2014\)](#), [Anand and Korotkova \(2018\)](#), [Franzén \(2018\)](#), and [Muñoz \(2019\)](#).<sup>1</sup>

This is not the first attempt to make sense of acquaintance inferences, and we will survey the field of play at a later stage. Along with [Franzén \(2018\)](#) — though differing substantially from his account in scope as well as at crucial moments of detail — we propose an explanation of the acquaintance inference that has a distinctly EXPRESSIVIST flavor: such inferences arise, we say, because of the kind of mental state that plain uses of *tasty*, *fun*, and *frightening* are designed to express. In fact, we suggest that acquaintance inferences should be completely unsurprising. Autocentric uses of predicates of personal taste (and their negations), we will claim, are tools for expressing experiential attitudes. Such states of mind, in turn, are acquired only by undergoing suitable experiences, and this is why an utterance like (5) sounds odd:

- (5) ?? Downhill skiing is fun, but I have never been.

(5) strikes one as peculiar, we suggest, because the speaker expresses a state of mind that one could only acquire by undergoing some distinguished experiential episode, only to deny that he or she has ever had an experience of the relevant kind. And of course, it is no more surprising that hedging or exocentric uses cancel the implication that the speaker has first-hand knowledge of the item under consideration: such constructions do not express experiential attitudes in the first place but rather (to a first approximation) beliefs — a type of mental state that can be acquired in a variety of ways, including testimony.

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<sup>1</sup>And they are not unique to predicates of personal taste. Aesthetic adjectives, in particular give rise to an acquaintance inference as well (see, e.g., [Mothersill 1984](#) and [Wollheim 1980](#)):

- (i) The Eiffel Tower is beautiful... ??but I've never seen it.

We will briefly comment on these adjectives — which introduce some additional but ultimately harmless complexities — at a later stage.

The suggestion that it matters what kind of attitude a certain utterance expresses has a distinct air of familiarity. Metaethical expressivists such as Blackburn (1984, 1988) and Gibbard (1990, 2003) hold that utterances involving normative predicates like “*Stealing is wrong*” differ from those involving descriptive predicates like “*Stealing is illegal*” in that the former express conative, desire-like states while the latter express beliefs (thus following the noncognitivist tradition in metaethics that goes back at least to Ayer (1936), Stevenson (1937, 1944), and Hare (1952)). As a hypothesis about the fragment of natural language containing normative predicates, expressivism is primarily driven by claims about the metaphysics and psychology of the normative rather than empirical concerns, and nothing we are about to say here is meant to suggest that textbook metaethical expressivism is correct. Nonetheless, we think there are striking parallels between the kinds of considerations that fuel an expressivist outlook on the language of morals and those issues that have dominated recent discussions of the acquaintance inference phenomenon. We will explore this issue in more depth in Section 2.

Despite its intuitive appeal, the claim that “*Sea urchin is tasty*” expresses an experiential attitude rather than an ordinary belief has met some resistance in the existing literature. Lasersohn (2005) and MacFarlane (2014) complain that expressivist approaches have trouble explaining the semantic behavior of taste predicates under embeddings and, relatedly, their potential to figure in valid arguments.<sup>2</sup> These reservations, while important, will not apply to the story told here, as we will show in detail in Section 3. Very roughly, we will say that assertions express distinct states of mind *insofar* as they introduce distinct normative constraints on the mental state that the speaker must be in for the propositional content put into play to be assertable. It is straightforward to articulate this idea in such a way that the relevant assertability conditions compose in the right way, in a way that is sensitive to how certain expressions are used in discourse, and in a way that is general to all predicate types, not tailored specifically to handle experiential language.

The resulting framework is suitably compositional and, in particular, explains why the acquaintance inference can be canceled — OBVIATED, as Anand and Korotkova (2018) put it — by certain operators such as *apparently*, *must*, and *might*. This fact constitutes one major difference between the upcoming story and the earlier mentioned expressivist proposal in Franzén 2018. Section 4 drives the point home and also takes a closer look at other existing approaches on the market. Section 5 concludes with a discussion of how our proposed framework bears on the phenomenon of (so-called) faultless disagreement.

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<sup>2</sup>Worries along these lines are one prominent incarnation of the Frege-Geach problem for expressivism and other accounts that stand in the noncognitivist tradition. The classical discussions are by Geach (1960, 1965), who credits Frege (1919), and by Searle (1962). Schroeder (2008c, 2010) offers a more recent perspective on the problem.

## 2 Expressivism

Reflecting on the kinds of mental states that taste judgments are designed to express, we suggest, promises to shed light on the acquaintance inference, not least because a lot of what has been observed about this inference is reminiscent of what metaethical expressivists have said about the language of morals. These parallels strike us to be of independent interest, so let us describe them in more detail.

Metaethical expressivism has a long history and draws support from a variety of considerations about the language and metaphysics of morals, but the intuition that matters most for current purposes is MOTIVATIONAL INTERNALISM: the view that there is a special conceptual or necessary connection between accepting a moral judgment and being motivated to act. [Stevenson \(1937\)](#), for instance, puts things as follows:

“[G]oodness” must have, so to speak, a magnetism. A person who recognizes X to be “good” must *ipso facto* acquire a stronger tendency to act in its favour than [*sic*] he otherwise would have had. This rules out the Humian type of definition. For according to Hume, to recognize that something is “good” is simply to recognize that the majority approve of it. Clearly, a man may see that the majority approve of X without having, himself, a stronger tendency to favour it. This requirement excludes any attempt to define “good” in terms of the interest of people *other* than the speaker. [p. 16]

Motivational internalism is not uncontroversial, but those who do think it is true — those who think moral thoughts have a special connection to motivation that non-moral thoughts do not — naturally wonder *why* it is true. The most influential answer to this question is that moral thoughts have a special connection to motivation that non-moral thoughts do not because moral thoughts are a different kind of mental state from non-moral thoughts. And the more concrete proposal is that while non-moral thoughts have a mind-to-world direction of fit — they represent the world to be a certain way and ought to be revised in case of a mismatch — moral thoughts pattern with desires in having a world-to-mind direction to fit: what matters is not what the world is like but what it *should* be like, and the world’s failing to do so is no reason to revise the attitude.

For our purposes, it does not matter whether motivational internalism entails psychological noncognitivism, and we certainly do not think it creates the need for a textbook expressivist semantics for the language of morals (as we will explain momentarily). What really interests us here is the prediction that, if moral internalism is correct, it should be incoherent to sincerely voice a moral judgment and at the same time deny having entered into a motivational state directed toward or against the action in question, however weak or defeasible that stance may be. It is not entirely straightforward to construct linguistic tests that target the motivational inference alone (and not also the at-issue content of normative terms). Here we use the collocation *I have no opinion about doing such-and-such*, which is meant to be heard as communicating that the speaker has taken no positive or negative stance to-

ward the described attitude.<sup>3</sup> And indeed, the following contrasts show that this test draws a clear empirical distinction between normative judgments and, for instance, legal judgments, suggesting that only the former give rise to implications about the motivational attitudes of the speaker.

- (6) a. Tax fraud is wrong... ?? but I have no opinion about committing it.  
b. Tax fraud is illegal... ✓ but I have no opinion about committing it.
- (7) a. Lowering carbon emissions is right... ?? but I have no opinion about doing it.  
b. Lowering carbon emissions is legal... ✓ but I have no opinion about doing it.

The first point that strikes us as worth mentioning, then, is that there seems to be an important parallel between the acquaintance inference and the kind of data that might move one toward embracing motivational internalism: just as it is strange to present oneself as judging something to be fun or tasty without having experienced it, so it is strange to present oneself as judging something to be right or wrong in the absence of some distinct motivational stance.

The point is bolstered if we note that like the acquaintance inference, the motivational inference is preserved under negation:

- (8) a. Taking advantage of tax loopholes isn't wrong... ?? but I have no opinion about doing it.  
b. Taking advantage of tax loopholes isn't illegal... ✓ but I have no opinion about doing it.
- (9) a. Emitting more carbon isn't right... ?? but I have no opinion about doing it.  
b. Emitting more carbon isn't legal... ✓ but I have no opinion about doing it.

The parallel between *tasty* and *wrong*, to be clear, is not perfect: if someone asserts that sea urchin is or is not tasty without ever having tasted it, one might wonder about the speaker's motivation (“*You try it!*”) or close-mindedness (“*Nothing that ugly could be tasty.*”); asserting that stealing is or is not wrong without giving a damn, in contrast, might sound like arguing for argument's sake. We will return to the need for such nuances below. For now, we take the parallel to be suggestive

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<sup>3</sup>A (reasonable, we take it) background assumption here is that while one may have opinions about many issues without being motivated to act in one way or another (say, about the legitimacy of the 2017 Catalan independence referendum), having an opinion about *doing* something is to have some basic motivational attitude toward that kind of action. The attitude at play here, we should add, need not always derive from the presence of a moral opinion: one can have an opinion about inviting Lucy to the party — be in favor of doing so, for instance — without thinking of party invitations as moral affairs. See also [Soria Ruiz 2019](#) and [Soria Ruiz and Stojanovic 2019](#) for related (but importantly different) empirical arguments to the conclusion that normative judgments come with motivational implications.

in the following sense: if motivational internalism holds because moral judgments are legitimate only in the presence of motivational attitudes, then it makes good sense to suggest that the acquaintance inference holds because taste judgments are legitimate only in the presence of experiential attitudes.

And the similarities do not stop here. Predicates of personal taste, recall, allow for exocentric uses that are anchored to tastes and sensibilities other than the speaker's. The same holds for moral predicates. After studying the behavior of her alien visitors for some time, for instance, the protagonist of the film *Arrival* might conclude that heptapod culture imposes distinct prohibitions on the use of the middle tentacle:

(10) Using the middle tentacle to communicate is wrong.

And she might sincerely do so, we may add, even given that she herself can have no opinion on whether or not to use the middle tentacle to communicate, lacking the relevant appendage.

In fact, the possibility of exocentric uses of moral predicates has essentially been suggested for moral predicates in response to a prominent problem for motivational internalism: the possibility of the sensible knave. Such a person — Professor Moriarty for instance — might conclude that stealing is a grievous wrong, and yet treat that judgment as in no way bearing on questions of whether to steal. And the knave may do so, it seems, without making a mistake in reasoning or being confused about the meaning of *wrong* — all it takes is that he or she does not care in the right way about a moral fact one fully recognizes. If sensible knaves are possible, motivational internalism is in trouble, since there does not seem to be a special conceptual or necessary connection between accepting a moral judgment and being motivated to act after all.

But this argument is not irresistible. Sensible knaves may exist but given the possibility of exocentric uses of moral vocabulary, their indifferent use of terms such as *right* and *wrong* is not a good guide to the meaning of such expressions. Thus Gibbard (2003) responds:

Suppose we debate just when avid and determined wooing crosses the line and becomes harassing. Anyone who “doesn’t give a damn”, for whom no question of action or attitude, actual or hypothetical, hinges on the classification, can’t join into the conversation as a full-fledged participant. His use of this kind of language can only be parasitic on the usage of those who do care. Would a serenade be harassing as well as quaint? The sensible cad might predict how people will classify serenades, or role-play at entering the discussion. But it is puzzling what he is doing if he earnestly tries to take sides. There is no such intelligible thing as pure theoretical curiosity in these matters; at stake is how to explain what to do. (p. 163)

This response has a familiar ring: like *fun* and *tasty*, *right* and *wrong* have exocentric uses. The former are anchored to tastes and sensibilities other than the speaker's, while the latter are parasitic on moral sentiments other than the speaker's. The truth of moral internalism thus appears perfectly compatible with the existence of sensible

knaves once we realize that moral predicates are alike to taste predicates in allowing for exocentric uses.

Finally, we noted that the acquaintance inference is canceled in certain embeddings; relatedly, it is a familiar observation that moral predicates can occur in various linguistic environments without indicating that the speaker has a distinct motivational stance toward the item under consideration. This is strikingly clear if we consider embeddings of moral and subjective predicates in conditional antecedents:

- (11) a. If sea urchin is tasty, I should try it.  
b. If lowering carbon emissions is right, everyone should do it.

The use of *tasty* in (11a) does not suggest that the speaker has tasted sea urchin; similarly, the use of *right* in (11b) is compatible with the speaker not being motivated to lower carbon emissions. And while straight moral judgments imply the presence of a suitable motivational state, their hedged cousins do not:

- (12) a. Apparently, it is wrong not to tip for bad service.  
b. It is probably wrong not to tip for bad service.

Neither (12a) nor (12b) seem to imply that the speaker disapproves (or approves, for that matter) of not tipping for bad service.

Embeddings under epistemic necessity modals are another interesting case. The observation that such modals cancel the acquaintance inference is perfectly familiar (see e.g. [Ninan 2014](#) and [Pearson 2013](#)). It also seems as if embedding moral predicates under epistemic *must* cancels the implication that the judgment goes together with some distinct motivational state.

- (13) I have never tried sea urchin, but since everyone else obviously enjoys it...  
✓ ...it must be tasty.  
?? ...it is tasty.
- (14) I have no opinion about not tipping for bad service, but since everyone else obviously disapproves of it...  
✓ ...it must be wrong.  
?? ...it is wrong.

Note that in these examples, the unhedged variant is odd unless we enforce an (anything but salient) exocentric reading of the predicate at play.

The upshot of the discussion in this section is that the acquaintance inference patterns in interesting ways with the kind of observations about moral language use that have fueled motivational internalism in metaethics: that plain assertions containing moral adjectives imply the presence of some motivation to act in a certain way. This point strikes us to be of independent theoretical interest, but we also take it to suggest that the most straightforward explanation of why motivational internalism is true — that moral thoughts differ from plain beliefs in being distinct pro-attitudes — might

generalize to an explanation of why the acquaintance inference arises: taste judgments differ from beliefs in being experiential states, that is, states one can only acquire by undergoing certain experiences.

We thus propose that a comprehensive taxonomy of the attitudes that ordinary speakers express in their assertions should not only include beliefs and moral thoughts but also experiential attitudes. We add that there is every reason to think that all of these attitudes may ultimately receive a respectable FUNCTIONALIST analysis: they are to be characterized in terms of the role they play in the cognitive system of which they are a part and, specifically, in terms of their causal relations to sensory stimulations, other mental states, and behavior. The point is perfectly familiar when it comes to belief attitudes (see, e.g., [Stalnaker 1984](#) and [Lewis 1994](#)) as well as when it comes to moral thoughts (see, e.g., [Bratman 1987](#) and [Gibbard 2003](#)). We propose to couple these analyses with the suggestion that for an agent to have an experiential attitude with  $p$  as its content is, *inter alia*, to be in a state that is caused by a characteristic experience that  $p$  and that induces a belief that  $p$  is the case.<sup>4</sup> While this is at best a sketch of a full-blown account, which must eventually be interwoven with a suitable functionalist analysis of belief and experience, it highlights the crucial fact that experiential attitudes are causally dependent on experiential episodes and cause distinct doxastic commitments, even while remaining distinct from plain doxastic attitudes. Since this is all that matters for our purposes, let us now turn to the details of the proposal.

### 3 Analysis

We will begin with an informal articulation of the basic ideas (Section 3.1) and then briefly spell out the formal details of the proposal (Section 3.2). A discussion of the output is provided in Section 3.3.

#### 3.1 Key Ideas

Our goal is to give a broadly expressivist explanation of the acquaintance inference and related phenomena in the language of morals, but we will do so without signing up to the details of a classical expressivist semantics. Such a setup would assign semantic values to sentences of the target language in terms of (abstract representations of) the states of mind those sentences express (beliefs, desires, etc.) and would interpret logical connectives as functions from states of mind to states of mind: the attitude expressed by, say, “*Stealing is not wrong*” is determined by the attitude expressed by “*Stealing is wrong*” together with a general semantic rule for how the negation operator

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<sup>4</sup>Experiential attitudes, on this view, require the presence of a corresponding doxastic commitment. Not all experiential episodes result in beliefs of the appropriate kind — I may experience the lines of the Müller-Lyer illusion to be of different lengths without believing that they are, for instance — and thus not all experiential episodes result in experiential attitudes in the relevant sense. Our analysis is perfectly compatible with a more complex account on which experiential commitments need not always translate into doxastic commitments, but exploring the theoretical and empirical implications of this alternative in the required detail would take us too far afield.



maps an input to an output state. And so the logical relations between elements of the target language, most notably the ones of entailment and inconsistency, would have to be explained in terms of relations between the states of mind expressed by those sentences.<sup>5</sup> Whether this explanatory project can really succeed or inevitably remains stipulatory — as critics of the expressivist agenda maintain — is a question that need not detain us here.<sup>6</sup> We do not aim for a psychologistic semantics; instead, what we shall say is that assertions express states of mind *insofar* as they require the speaker to be in a certain state of mind for the utterance to be in accordance with the norms for performing that speech act, and we shall couple this intuitive suggestion with some independently plausible hypotheses about the differences between, for instance, ordinary beliefs and taste judgments.<sup>7</sup> Let us explain.

Assertions express judgments, and judgments about taste or morality differ in kind from judgments about states of affairs, i.e. ordinary beliefs. We will translate the first part of the dictum into a proposal about the relation between expression and assertion.

**Expression and Assertion.** The mental state that an assertion of some proposition  $p$  expresses in some context  $c$  is the attitude that the speaker must hold toward  $p$  in order for  $p$  to be assertable in  $c$  given the norms of assertion of the language community.

And we will elaborate on the second part of the dictum by putting forward the following two claims.

**Expressing Experiential Attitudes.** If  $p$  is the propositional content of a plain assertion  $A$  containing a predicate of personal taste, then the norms of assertion governing  $A$  (defeasibly) require the speaker to hold a certain type of experiential attitude toward  $p$ .

**Experiential Attitudes and Experiences.** Holding an experiential attitude requires having undergone experiential episodes of the relevant kind.

We take all of these claims to have intuitive appeal. For sure, the hypothesis that certain assertions express mental states other than beliefs is anything but trivial, and we will say more about when they do so, and why, in a moment. Still, it strikes us as uncontroversial that there are mental states — the ones we have labeled “experiential” attitudes — that can be distinguished from beliefs in that they can only be acquired

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<sup>5</sup>For this take on the core commitments of the expressivist agenda, see Dreier (2009), Horgan and Timmons (2006), Rosen (1998), Schroeder (2008a, 2008b), Unwin (2001), and Wedgwood (2007). Charlow (2014) and Silk (2013) develop non-standard outlooks on the semantics of expressivism, though their stories are still very different from ours.

<sup>6</sup>Dreier (2006, 2009), Schroeder (2008a, 2008b, 2008c), Schueler (1988), Sinnott-Armstrong (2000), and Unwin (1999, 2001) have all argued that at least in its standard incarnation expressivism is fatally flawed. Gibbard (2013), Silk (2015), and Willer (2017), among others, respond to these objections.

<sup>7</sup>We focus in this paper on the case of assertion, but the core proposal should generalize to other kinds of illocutionary acts.

in virtue of having had certain experiences. And it makes good intuitive sense to say that natural language provides tools for directly expressing such states of mind rather than some belief state that serves as their proxy. So we take the proposal we are about to elaborate, which provides a formal framework that derives these claims as consequences, to rest on stable intuitive grounds.

To say that predicates of personal taste are used to express experiential attitudes is to make a claim about their meaning, but one that is compatible with the standard protocol of truth-conditional semantics, given the view on the relation between expression and assertion that we presented above. Predicates have extensions at possible worlds and ordinary declarative sentences have propositions as their semantic values in context. Assertions of propositions are made in a context (Stalnaker 1978), and context and what is said frequently affect each other. Since language has context-sensitive expressions, which proposition an assertion expresses may very well depend on the context. At the same time, assertions in turn affect the context, and they do so by adding the proposition expressed by that assertion to the context. So far, so familiar.

The additional wrinkle we propose starts with the familiar dictum that one should — normatively speaking — assert that  $p$  only if one actually finds oneself to be in a particular state of mind. Williamson (1996) suggests that one should only assert what one knows; Bach (2008) makes belief the norm of assertion (precisely, he adds, because assertions are expressions of belief). These familiar characterizations of the sincerity conditions on assertion actually combine two distinct normative constraints that we wish to tease apart. To say that one may assert  $p$  only if one knows or believes  $p$  to be true is to say, on the one hand, that one should be committed to the truth of  $p$ ; it also is to say, on the other hand, that one should be in a particular epistemic or doxastic state, namely one that distinguishes worlds in which  $p$  is true from worlds in which  $p$  is false. We assume as usual that the first condition, which we refer to as INTEGRITY, is either constitutive of the speech act of assertion, or perhaps just reflects a commitment to Grice’s Maxim of Quality. Our key move is to say that the second condition, which we call GROUNDING, is linked to the lexical semantics of predicates, and so is dependent in particular ways on the lexical items used to make an assertion. Specifically, while all predicates introduce the requirement that assertions involving them be grounded in the speaker’s mental state, they may differ in the kind of mental state involved, in specific ways that are determined by that predicate’s meaning. This hypothesis, together with the principles above, derives the following principle as a corollary.

**Expressive Variability.** Assertions differ in the *kind* of mental state that they require to be present for the act to be in accordance with grounding, and so in the kind of mental state that they express. What kind of state that is depends on what predicates are employed.

The concrete proposal then is that predicates — including predicates of personal taste — have ordinary extensions relative to possible worlds. An utterance of “*Sea*

*urchin is tasty*” with assertive force, for instance, is a proposal to add the proposition that sea urchin is tasty to the common ground. In addition, however, we say that the predicate *tasty*, as a matter of lexical specification, introduces the condition that this proposition is assertable only if it is grounded in the speaker’s experiences, in the sense that the speaker’s experiences must distinguish between the contextually relevant worlds at which the proposition that sea urchin is tasty is true and those at which it is false.

To get the notion of grounding into clearer view, start with the familiar notion of two worlds being DOXASTICALLY INDISTINGUISHABLE for some agent just in case they agree on every proposition that the agent believes — in other words, just in case nothing that the agent believes tells these two worlds apart. We may expand this notion in the obvious way by saying that two worlds are EXPERIENTIALLY INDISTINGUISHABLE for some agent just in case nothing in the agent’s experiences tells the two worlds apart. And so on. To say that an assertion of  $p$  is grounded in the speaker’s experiences is to say that the speaker can experientially (and not just doxastically) distinguish the  $p$ -worlds from the  $\neg p$ -worlds.

For an assertion that sea urchin is tasty to be in accordance with the norms governing assertion, then, the speaker must, on the basis of his or her experiences — and not merely on the basis of his or her beliefs — be able to distinguish between those worlds at which sea urchin is tasty and those at which it is not.<sup>8</sup> But being able to do so requires — and this just seems to be basic common sense — having experienced sea urchin as tasty (or not), and thus (in ordinary circumstances anyway) to have tasted sea urchin. Given that speakers are taken to be cooperative by default — they do not intentionally violate the norms of assertion — it follows that plain assertions involving taste predicates will express experiential attitudes, and so will give rise to acquaintance inferences.

And it does not take a lot of imagination to see how the proposal establishes the similarity between the language of taste and the language of morals. Gibbard (1990) suggests that normative judgments express the acceptance of systems of norms — rules that sort actions under naturalistic descriptions into those which are forbidden, permitted, and required. We can derive this result within a standard truth-conditional semantics by saying that worlds assign extensions to predicates such as *right* and *wrong*, and adding that such predicates further require that assertions involving them be grounded in a speaker’s norm acceptance. Propositions are compatible and incompatible with systems of norms in the obvious way, and two worlds are normatively indistinguishable if there is no proposition that is incompatible with some accepted norm and that is true at the one and false at the other world.<sup>9</sup> Assuming with Gibbard that norm acceptance entails having entered into a motivational state directed toward or against the relevant action or actions, the fact that moral judgments imply

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<sup>8</sup>We note here that a proposition may fail to be properly grounded in the speaker’s state of mind — and thus fail to be assertable — without this being transparent to the audience. What gives an assertion of “*Sea urchin is tasty, but I’ve never tried it*” the distinct air of *infelicity* is that the speaker *transparently* violates the norms of assertion.

<sup>9</sup>Gibbard (1990, 2003) assigns semantic values relative to world-norm pairs but doing so is not essential to get our story off the ground.

the presence of such a stance follows straightaway from the fact that plain assertions involving moral predicates express norm acceptance, in virtue of their lexically determined grounding conditions.

To say that a particular assertion must be grounded in a speaker’s beliefs or experiences is, of course, also to say that he or she must have a certain kind of evidence for her judgment, but we wish to argue that grounding is not an *essentially* evidential condition on assertion. Normative attitudes, in particular, ground moral judgments in the same way that experiential attitudes ground judgments about taste, but we do not want to say that one’s motivational stance toward stealing, for instance, provides evidence for one’s judgment that stealing is wrong. Rather, grounding is indeed a proper sincerity condition: one may use  $F$  to ascribe a property to  $x$  only if one is in a position to distinguish worlds in which  $x$  is  $F$  is true from worlds in which it is false, and what kind of mental state satisfies this requirement depends on the particular kind of property that  $F$  encodes.

Grounding is thus a lexically-determined condition which ensures that the speaker’s mental state supports making the kinds of distinctions between worlds that the propositional content of her assertion is designed to draw. It does not require her to be committed to the truth of her utterance. This is the role of integrity, a speech-act level condition which can plausibly be reduced to (the first part of) the Maxim of Quality or some similar principle. One may reasonably ask, however, whether we now have two constraints on assertion where a single one is enough, namely the traditional dictum that one should only assert that which one believes (or knows) to be true. And our answer to this question is no: the very existence of acquaintance and motivational inferences already tells us that this kind of condition, on its own, is not enough. If we only consider assertions involving “factual” (i.e., doxastically grounded) predicates, there is no empirical basis for distinguishing integrity from grounding — and so no reason to look beyond the traditional dictum — since the inferences that arise from the assumption that the utterance satisfies the former are just a special case of the inferences that arise from the assumption that the utterance satisfies the latter. But as soon as we consider assertions involving experiential and normative predicates, the difference between inferences based on integrity and those based on grounding becomes visible: belief in, or even knowledge of, the truth of the proposition that sea urchin is tasty does not entail experience with the taste of sea urchin, given the possibility of indirect evidence, a point to which we return in Section 4. It is precisely this difference, and the need to derive acquaintance inferences and motivational inferences as “extra” content that is part of the motivation for a move to a full-blown expressivist account of experiential and normative language. Here we have argued for a uniform analysis in which factual predicates, experiential predicates and normative predicates can all be used in the same way to make assertions, and all assertions are subject to the same felicity conditions, integrity and grounding. But specific grounding conditions are determined by lexical items, which explains why the kind of attitude that an assertion expresses can vary according to the predicate used.<sup>10</sup>

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<sup>10</sup>The setup proposed here also allows provides a new perspective on violations of the norms of assertion. A speaker who is in a mental state that grounds  $p$ , who is committed to  $p$ , but who asserts  $\neg p$  (or vice-versa), violates integrity. A speaker who makes claims that are ungrounded in the relevant

In the next section, we lay out the formal details of our proposal and show how it provides a straightforward means of composing grounding conditions in systematic ways, so that the presence or absence of certain embedding operators can impact the attitude expressed by a particular assertion. We then show how the resulting story can be extended both to exocentric uses of experiential and moral language, and also to other phenomena that appear to involve “expressive ambiguity.”

### 3.2 Formal Details

The technical details of the proposal are straightforward. We start with a semantic interpretation function  $\llbracket \cdot \rrbracket$  that assigns (inter alia) to each predicate of our target language ordinary extensions at possible worlds. Given some proposition  $p$ ,  $\bar{p}$  is the complement of  $p$  (i.e.  $W \setminus p$ ). Given some agent  $a$  and world  $w$ ,  $a$ ’s DOXASTIC COMMITMENTS are, as usual, the set of propositions entailed by the agent’s beliefs at  $w$ ; an agent’s EXPERIENTIAL and NORMATIVE COMMITMENTS can be defined in a fully parallel way:

- $\text{DOX}(a, w)$ : the propositions entailed by  $a$ ’s beliefs at  $w$
- $\text{EXP}(a, w)$ : the propositions entailed by  $a$ ’s experiential attitudes at  $w$
- $\text{NORM}(a, w)$ : the propositions entailed by the norms accepted by  $a$  at  $w$

We will also say that  $\text{EXP}(a, w) \subseteq \text{DOX}(a, w)$  and that  $\text{NORM}(a, w) \subseteq \text{DOX}(a, w)$  for all  $a$  and  $w$ . In other words, we shall assume that whatever an agent has experienced as true is also believed to be true, and that normative commitments are also doxastic commitments.<sup>11</sup>

We can now say what it means for a proposition to be grounded in a particular state of mind — henceforth a GROUNDING STATE — by relativizing grounding to different kinds of commitments:

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mental state, i.e. about which they are unopinionated, violates grounding. To do former is to “lie,” and to do the latter is to “bullshit,” and bullshitters may come in a variety of ways:

- (i) Alex: Art museums are not interesting.  
Mary: When did you visit one?  
Alex: ?? I’ve never visited one.
- (ii) Bert: Universal health care is wrong.  
Mary: When did you become opposed to it?  
Bert: ?? I have no opinion about adopting it.

Alex is reminiscent of a snarky teenager, while Bert is your typical aginstster. Both may be saying something whose truth they are committed to, and so neither need be lying. (They could, of course, be lying as well.) Nonetheless, it seems clear that their assertions are defective in a distinct way. The claim that assertions should only put into play propositions that are properly grounded (here, in a speaker’s experiences or accepted norms) allows us to see why.

<sup>11</sup>Our commitment functions map individuals (at worlds) to sets of propositions; we may easily derive the more familiar conception of commitments as sets of possible worlds by intersection. For instance,  $\bigcap \text{DOX}(a, w)$  is the set of possible worlds compatible with what  $a$  believes at  $w$ . Relatedly, starting with, for instance, the set  $s$  of possible worlds compatible with  $a$ ’s experiential attitudes at  $w$  we can derive  $\text{EXP}(a, w)$  as  $\{p: s \cap \bar{p} = \emptyset\}$ , and similarly for the other commitment types we have mentioned so far. We have chosen to appeal to sets of propositions since doing so streamlines the discussion of the technical details.

**Grounding.** A proposition  $p$  is *grounded* in an agent  $a$ 's  $\iota$ -state of mind at  $w$ ,  $\iota(a, w) \triangleright p$ , iff  $p \in \iota(a, w)$  or  $\bar{p} \in \iota(a, w)$ .

For instance, to say that  $p$  is grounded in an agent's belief state at  $w$  is to say that  $p$  or  $\bar{p}$  is included in the agent's doxastic commitments at  $w$ , i.e. that the agent's doxastic commitments distinguish between  $p$  and  $\bar{p}$  at  $w$ . To say that  $p$  is grounded in an agent's experiential state at  $w$  is to say that the agent's experiential commitments distinguish between  $p$  and  $\bar{p}$  at  $w$ . And so on. Two propositions are experientially indistinguishable in context, then, in case nothing the speaker has experienced tells them apart. That is compatible with the speaker being able to tell them apart doxastically, for instance if the belief is based on testimony rather than direct experience. So whenever some speaker  $a$  believes that sea urchin is tasty despite never having tried it, then  $a$ 's beliefs ground the proposition that sea urchin is tasty, but  $a$ 's experiences do not.

As a prelude to our compositional analysis, let us return to [Stalnaker's \(1978\)](#) picture about assertion: assertions are proposals to UPDATE the common ground with some proposition; they relate an input context to an output context. Grounding states effectively impose constraints that need to be in place for the speech act to be in accordance with the norms of assertion; as noted earlier, these conditions are lexically determined, but we also want them to compose in systematic ways. We spell out our proposal in a dynamic setting by specifying how declarative sentences relate an input to an output state, and under what conditions.<sup>12</sup>

We illustrate our proposal by providing a dynamic semantics for unary predicates, but the case easily generalizes to  $n$ -ary predicates. If  $\beta$  is a unary predicate, then  $\llbracket \beta \rrbracket$  maps each object in the domain to some proposition: the set of possible worlds at which  $\beta$  truthfully applies to  $x$ . We now introduce a dynamic semantic function  $[\cdot]_\sigma^c$ , defined in (15), which tells us how an input state (a set of possible worlds) gets updated in light of a predication of  $\beta$  of an argument  $x$  of the appropriate semantic type, given some context  $c$  and non-empty grounding state  $\sigma$ . (To simplify the notation we shall treat  $\llbracket \cdot \rrbracket$  as insensitive to context.)

$$(15) \quad [\beta]_\sigma^c(x) = \lambda s \lambda t. t = \{w \in s : \llbracket \beta \rrbracket(x)(w) = 1\} \text{ and } \sigma \triangleright \llbracket \beta \rrbracket(x) \quad \text{if } \sigma \neq \emptyset$$

In words, given some non-empty grounding state  $\sigma$ , simple predications add the classical proposition they articulate to the input state, provided  $\sigma$  grounds that proposition. A violation of the grounding condition results in an undefined update: the input state fails to be related to an output state.

To this we add general composition rules for negation and conjunction, defined in the usual way for dynamic semantics: negation is essentially set subtraction, as in classical dynamic semantics, and conjunction is sequential updating:

$$(16) \quad [\neg \phi]_\sigma^c = \lambda s \lambda t. \exists u : s[\phi]_\sigma^c u \text{ and } t = s \setminus u$$

$$(17) \quad [\phi \wedge \psi]_\sigma^c = \lambda s \lambda t. \exists u : s[\phi]_\sigma^c u \text{ and } u[\psi]_\sigma^c t$$

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<sup>12</sup>Some popular implementations of dynamic semantics: Discourse Representation Theory ([Kamp 1981](#); [Kamp and Reyle 1993](#); [Kamp et al. 2011](#)), Dynamic Predicate Logic ([Groenendijk and Stokhof 1991](#)), File Change Semantics ([Heim 1982](#)), Update Semantics ([Veltman 1985, 1996](#)).

The basic system, then, is one in which grounding states are just like any other interpretation parameter: the default is that if  $\phi$  is a subconstituent of  $\psi$ , then  $\phi$  is assigned an interpretation relative to the same grounding state as  $\psi$ . As we will show below, these entries derive one of the key features of acquaintance inferences, namely that they project out of negation (and conjunction).

The key question now is how a grounding parameter is determined. The first case to consider is the one we have focused on, whereby the grounding conditions for assertions of unembedded propositions are determined ultimately by the lexical predicates out of which those propositional constituents are composed. To capture these cases, we introduce the following rule for assertion:

**Assertion.** Let  $s_c$  be the context set of some context  $c$ : the result of asserting  $\phi$ ,  $c + \phi$ , is a proposal to update  $s_c$  such that  $s_{c+\phi} = \bigcup\{t: s_c[\phi]_{\emptyset}^c t\}$ . An assertion of  $\phi$  in  $c$  is in accordance with the norms of assertion only if  $\exists u: s_c[\phi]_{\emptyset}^c u$ .

An assertion is a proposal to update the common ground, and it is in accordance with the norms of assertion only if the update is defined. Importantly, we suggest that the speech act of asserting does not *by itself* provide a grounding state that would allow for the definedness condition to be satisfied, since  $\emptyset$  grounds no proposition whatsoever.

We then add that in the absence of an explicitly provided suitable grounding state, it is the *lexical rules* for predicate expressions that determine specific grounding conditions, thus complementing the general rule in (15) with specific interpretation rules for  $\sigma = \emptyset$  like those spelled out in (18). Here and throughout  $a_c$  and  $w_c$  are the speaker and the world of utterance of  $c$ , respectively.

- (18) a.  $[tasty]_{\emptyset}^c(x) = \lambda s \lambda t. t = \{w \in s: \llbracket tasty \rrbracket(x)(w) = 1\}$  and  
 $\text{EXP}(a_c, w_c) \triangleright \llbracket tasty \rrbracket(x)$   
 b.  $[wrong]_{\emptyset}^c(x) = \lambda s \lambda t. t = \{w \in s: \llbracket wrong \rrbracket(x)(w) = 1\}$  and  
 $\text{NORM}(a_c, w_c) \triangleright \llbracket wrong \rrbracket(x)$   
 c.  $[gluten-free]_{\emptyset}^c(x) = \lambda s \lambda t. t = \{w \in s: \llbracket gluten-free \rrbracket(x)(w) = 1\}$  and  
 $\text{DOX}(a_c, w_c) \triangleright \llbracket gluten-free \rrbracket(x)$

Given our proposal for assertion, then, lexical rules encode DEFAULT grounding conditions: they determine what state of mind a speaker must be in for a plain predication to be in accordance with the norms governing assertion.

The system we have developed so far immediately predicts that predicating *fun* of  $x$  is a proposal to add to the common ground the proposition that  $x$  is fun and by default commits the speaker, given standard assumptions of cooperativity, to the proposition having its grounding condition satisfied by his or her experiences. For parallel reasons, predicating *wrong* of  $x$  is a proposal to add to the common ground the proposition that  $x$  is wrong and by default commits the speaker, given standard assumptions of cooperativity, to the proposition that  $x$  is wrong being grounded in his or her accepted norms. And so on.

We also predict that grounding conditions — including default grounding conditions — project out of negation. The dynamic interpretations of “*Sea urchin is tasty*” and “*Sea urchin is not tasty*,” for instance, add incompatible propositions to an input state but share a common grounding condition. In their default use, both thus require that the speaker can, on the basis of his or her experiences, distinguish between those worlds at which sea urchin is tasty and those at which it is not tasty. Similarly, “*Stealing is wrong*” and “*Stealing is not wrong*” articulate incompatible propositions but equally require in their default uses that the speaker is normatively opinionated about the wrongness of stealing. And so on. Grounding conditions also project out of conjunctions in the obvious way.

We now need to consider cases of “shifted” grounding: configurations in which a particular expression fixes the grounding state of an expression that it composes with, i.e. cases of obviation. Let us begin with the case of conditionals. While various analyses of conditionals would play well with our approach, we here pursue a dynamic “test analysis” that is inspired by the Ramsey test for conditionals. Ramsey (1931) famously suggested that a conditional is accepted, given some state of information  $s$ , just in case its consequent is (hypothetically) accepted in the derived state of information got by strengthening  $s$  with the assumption of its antecedent. We implement this idea as follows in our semantics: a conditional tests whether its consequent is accepted — updating with the consequent idles — once the input state is strengthened with the antecedent. If the test is passed, it returns the input state; a failed test returns the absurd state ( $\emptyset$ ).

$$(19) \quad [\phi > \psi]_{\sigma}^c = \lambda s \lambda t. t = \{w \in s : \forall u. \text{if } s[\phi]_{\mathcal{P}(W)}^c u \text{ then } u[\psi]_{\mathcal{P}(W)}^c u\}$$

The important point here is that conditional antecedents and consequents are evaluated in light of a trivial grounding condition: the set of all possible propositions ( $\mathcal{P}(W)$ , the power set of possible worlds). Conditional reasoning is cheap, as it were. We might want to impose non-trivial constraints on the state of mind of someone who asserts a conditional, but this will do for current purposes.<sup>13</sup>

Turning to a hedge like *apparently*, we treat it as a test as well: this expression (and similarly for others like it) checks whether the prejacent is entailed by whatever counts as apparently true in context. Unlike the conditional connective, however, *apparently* requires its prejacent to be grounded in the speaker’s doxastic state. So suppose that  $\alpha(s)$  identifies the set of possible worlds in  $s$  at which things are exactly as they appear to be:

$$(20) \quad [Apparently \phi]_{\sigma}^c = \lambda s \lambda t. \exists u : \alpha(s)[\phi]_{\text{Dox}(a_c, w_c)}^c u \text{ and } t = \begin{cases} s & \text{if } u = \alpha(s) \\ \emptyset & \text{otherwise} \end{cases}$$

<sup>13</sup>For instance, an utterance of an indicative conditional might commit the speaker to the belief that the antecedent is possible. As long as the grounding conditions are trivial, there is no need to explicitly require that the input state be related to some output state, thus leading to simpler update conditions than the ones we will see for *apparently* and *must*. Note that plain tests either deliver the original input state or the absurd state as output, thus raising the question of how they can result in non-trivial conversational contributions. The issue can be easily addressed by lifting input states to sets of sets of possible worlds (see Willer 2013) without affecting the grounding story told here.



Thus while an assertion of “*Sea urchin is tasty*” must be experientially grounded, an utterance of “*Apparently, sea urchin is tasty*” is in accordance with the norms of assertion — the input state is related to some output state — only if the speaker is doxastically opinionated about the prejacent. If the condition is met, then we test whether  $\alpha(s)$  entails the prejacent. If the test is passed, it returns the input state; a failed test returns the absurd state ( $\emptyset$ ).

Let us now turn to epistemic modals. What state of mind could ground judgments of epistemic modality? One obvious way to go here is belief, since a judgment of epistemic necessity such as “*Mary must be in New York*” seems to commit the speaker to believing that Mary is in New York. However, if *might* and *must* are duals and grounding conditions project out of negation, judgments of epistemic possibility and necessity must share a common grounding condition, and to say that Mary *might* be in Chicago clearly does not require the speaker to be doxastically opinionated about Mary’s whereabouts. We thus have to be a bit more creative when it comes to the grounding conditions for epistemic *might* and *must*.

Start with the familiar idea that there must be a difference between a proposition’s being merely compatible with a state of mind and its being epistemically possible according to that state (Willer 2013; Yalcin 2011). Yalcin (2011) suggests that epistemic possibility is *question-sensitive*: not only must the relevant proposition be compatible with the agent’s doxastic state of mind, the agent must also be sensitive to the question of whether the proposition is true. We will take this idea as a source of inspiration for our grounding condition for epistemic modals. Following standard protocol, we PARTITION the set of possible worlds compatible with what  $a$  believes at  $w$  in order to model which doxastic possibilities the agent is actively aware of:  $p$  is *visible* to the agent just in case some partition entails  $p$ . We may then define:

—  $\text{VIS}(a, w)$ : the set of doxastically possible propositions that are visible to  $a$  at  $w$

And against this background, we can say the following about epistemic *must*:

$$(21) \quad [\Box\phi]_{\sigma}^c = \lambda s \lambda t. \exists u: s[\phi]_{\text{VIS}(a_e, w_e)}^c u \text{ and } t = \begin{cases} s & \text{if } u = s \\ \emptyset & \text{otherwise} \end{cases}$$

Epistemic *must* tests whether the prejacent is entailed by the input state; by extension, epistemic *might* tests whether the prejacent is compatible with the input state (Veltman 1996).<sup>14</sup> Both require, on pain of violating the norms of assertion, that the prejacent or its negation is a doxastic possibility that it is visible to the speaker at the world of utterance. And clearly, the tastiness of sea urchin can be a visible *doxastic* possibility even if one has never tasted sea urchin oneself.

Summarizing, the formal system presented here has two key features. First, grounding conditions are determined not at the level of the speech act, but by individual predicates. And second, lexically determined grounding conditions can be

<sup>14</sup>Following von Fintel and Gillies (2010), we may add that uses of epistemic *must* require that the prejacent not be entailed by the speaker’s direct evidence. If the direct evidence is modeled by a *kernel* — a set of sets of possible worlds — that would amount to the requirement that the kernel does not ground the prejacent.

obviated through compositional interaction with other expressions in constructions involving hedges, epistemic modals, and conditionals (and, presumably, other cases that remain to be documented), which in turn introduce their own grounding conditions. Together, these two features of the system ensure first of all, that the kind of mental state expressed by a particular assertion depends ultimately on the lexical semantic properties of the language used to make the assertion; we thus derive that plain assertions involving, for instance, *tasty* express experiential attitudes, those involving *wrong* express motivational states, and those involving *gluten-free* express beliefs. Second, the system derives the fact that a particular expression — *tasty*, for instance — may express an experiential attitude in plain assertions but no such attitude in certain types of embedded contexts. Finally, because our system defines the at-issue content of predicates and connectives in standard dynamic terms, there is nothing mysterious about a sentence and its negation being contradictory, in contrast to true expressivist accounts, since any update with a sentence and its negation results in the absurd state. There is, in brief, no Frege-Geach problem. In the next section, we show how the formal system outlined here can be extended to account for exocentric uses and variable grounding conditions.

### 3.3 Exocentricity

We now turn to exocentric uses of taste predicates and of their normative cousins. We propose that such uses are well-explained by the general possibility of shifting certain parameters of the discourse context. To illustrate this possibility, consider the case of epistemic *might*. Uses of epistemic *might*, so the consensus goes, articulate what is possible given some contextually relevant body of information, and what the speaker knows is always relevant (see e.g. DeRose 1991). Still, cases such as the one envisioned by Egan et al. 2005 seem to be possible:

Ann is planning a surprise party for Bill. Unfortunately, Chris has discovered the surprise and told Bill all about it. Now Bill and Chris are having fun watching Ann try to set up the party without being discovered. Currently Ann is walking past Chris’s apartment carrying a large supply of party hats. She sees a bus on which Bill frequently rides home, so she jumps into some nearby bushes to avoid being spotted. Bill, watching from Chris’s window, is quite amused, but Chris is puzzled and asks Bill why Ann is hiding in the bushes. Bill says

(22) I might be on that bus. (p. 140)

Here it seems clear that a use of epistemic *might* is felicitous despite the prejacent being incompatible with what the speaker knows. The obvious explanation is that in at least some circumstances it is possible to shift whose knowledge matters for the evaluation of epistemic *might*, and it makes perfect sense to say that here (22) is evaluated as if it is uttered in a context  $c'$  that is just like the original utterance context  $c$  except that  $a_c \neq a_{c'}$ , where  $a_{c'}$  is some individual (or group of individuals) salient in  $c$  (in this case, Ann).

Taking the previous story about epistemic *might* as a guide to exocentric uses more generally, the idea is that such uses are shifty in the following sense.

**Exocentricity** An exocentric use of  $\phi$  in context  $c$  is a proposal to update the common ground with  $\phi$  in light of  $c'$ , where  $c'$  is like  $c$  except that  $a_c \neq a_{c'}$ , where  $a_{c'}$  is some individual salient in  $c$ .<sup>15</sup>

Since exocentric uses of taste predicates are sensitive to the state of mind of some individual  $x$  who is contextually salient but distinct from the speaker, it is straightforward to explain why such uses give rise to a non-standard acquaintance inference:  $x$ 's experiences, but not the speaker's, must be rich enough to determine whether or not the predicate in question applies, and so it is  $x$ , not the speaker, who must have experienced the item under consideration. Exocentric uses of normative terms are parasitic on moral sentiments other than the speaker's for parallel reasons.

An alternative analysis, consistent with our overall program (and with the remarks in the next section), would be to say that exocentric uses arise when a default experiential or normative grounding state is contextually replaced with doxastic grounding. On this view, an assertion of (23a) would express the agent's belief that the new cat food is tasty, formed (let's say) based on her observation of the cat eating the food, and it would also (plausibly) implicate that the agent lacks personal experience of the food, since experiential grounding is stronger than doxastic grounding. In other words, an assertion of (23a) would, in the relevant respects, be synonymous with an assertion of (23b), given the analysis of hedges in the previous section.

- (23) a. The new cat food is not tasty.  
b. Apparently, the new cat food is not tasty.

It may very well be true that some utterances are properly analyzed in this way, but we want to resist this as a general explanation of exocentric uses. First, if the account of epistemic modals above is correct, then we certainly allow for the possibility of context-shifting. And second, we seem to require context-shifting, in order to account for the fact that exocentric uses generally come with shifted acquaintance (or motivational) inferences, unlike utterances involving hedges. (23b) would be acceptable in a context in which we simply observe that the cat has not eaten the food, but (23a) strikes us as somewhat odd here, and acceptable only when the cat has had some experiential engagement with the food — possibly just taking a sniff and walking away. The natural thing to say here is that exocentric uses of predicates of personal taste in general imply that the experiential anchor has experience of the item under consideration — a result that falls out on the context-shifting view — but also that there is some leeway when it comes to what counts as adequate experiential knowledge.<sup>16</sup>

<sup>15</sup>Autocentric as well as exocentric uses may also be anchored to groups of individuals, and so we will eventually have to say what it takes for such a group to be doxastically opinionated about some proposition. The details need not detain us here, but one reasonable proposal would be: a group is opinionated about some proposition just in case each member of the group is.

<sup>16</sup>An issue that we will not address in this paper is the proper analysis of constructions involving

### 3.4 Underspecification

A key maneuver in our story is the claim that predicates have default grounding conditions, and so also by default are used to express the corresponding mental state. But our proposal has the flexibility to accommodate non-default uses, and indeed true cases of expressive ambiguity. As an example of the kinds of cases we have in mind, consider McNally and Stojanovic’s (2017) observation that some adjectives, such as *beautiful* and *ugly*, express aesthetic judgments by default, while others have factual uses as their default, but allow for aesthetic uses.<sup>17</sup> Examples of the latter sort include *dynamic*, *somber*, and *lifeless*, which are used to express beliefs in (24a–c), and used to express aesthetic judgments in (25a–c).

- (24) a. This is a dynamic environment.
- b. The room was small and somber.
- c. Mercury is a lifeless planet.
  
- (25) a. Picasso’s *Guernica* is dynamic.
- b. Picasso’s *Guernica* is somber.
- c. Picasso’s *Guernica* is lifeless.

Similarly, Kennedy (2013) observes that adjectives like *dense*, *heavy*, and *light* can either have factual interpretations which characterize the physical properties of a substance, as in (26a), or more experiential interpretations, which emerge when describing objects that have no physical properties, as in (26b). And when an object can be assessed from either a quantitative or qualitative perspective, as in (26c), both interpretations are possible.

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so-called “judge PPs” or “subjective attitude verbs,” illustrated by the naturally occurring examples in (i) and (ii) respectively, in which the anchor for an experiential or normative judgment is made explicit:

- (i) a. What food is delicious to you, but disgusting to most people from other cultures?
- b. To me, eating meat is wrong. To most people, eating meat is not wrong. I do not decide my morality by popular vote.
  
- (ii) a. Many people find insects delicious because of their nutty taste.
- b. Perhaps because they are so much less similar to us than cows, pigs and chickens, people who find eating meat wrong will still eat fish because they don’t view them as the same type of “alive.”

These constructions also give rise to shifted acquaintance and motivational inferences, but in ways that differ subtly from exocentric uses of bare predicates (Muñoz 2019), and they also show complex interactions with their host predicates (Bylina 2017; McNally and Stojanovic 2017). Our approach provides several options for analyzing these constructions, but we set this exercise aside for another venue, where their empirical complexities can be properly taken into account.

<sup>17</sup>We will not attempt here to offer a theory of aesthetic judgments, but it is natural to take some inspiration from Kant (1790) and think that they form a category that is separate from plain beliefs or taste judgments. In his *Critik der Urteilskraft*, Kant suggests that judgments of beauty (aesthetic judgments) differ from judgments of cognition (e.g. plain perceptual judgments) in being based on feelings of pleasure (§1). But the pleasure is of a special kind since it is disinterested (§2). This fact distinguishes aesthetic judgment from other judgments based on feeling, in particular judgments of the agreeable (ordinary taste judgments) and judgments of the good, including judgments about the moral goodness of something (§§3–5).

- (26) a. This metal is dense/heavy/light.  
b. This story is dense/heavy/light.  
c. This cake is dense/heavy/light.

A natural explanation of this phenomenon is that while adjectives like *tasty*, *wrong* and *beautiful* specify grounding conditions in the way we proposed above, others leave their grounding state underspecified, or come in two variants, which differ only in grounding state, and natural language speakers rely on context and common sense to resolve this underspecification. If this is correct, then it opens the door to an account of what it means for a predicate to be “experiential,” “normative,” “aesthetic,” or “factual” that is not (or not only) a matter of at-issue semantic content, but rather a matter of (default) grounding: of differences in the mental state that underwrites the use of the predicate in a particular speech act. Such an account is appealing, but immediately faces two central questions. First, what is the relation between at-issue content and default grounding? Could a language have a word just like English *red*, except with default experiential grounding, or a word like English *expensive*, except with default normative grounding? And relatedly, what must be said about the difference in meaning between e.g. the two senses of *heavy* in (26), beyond the difference in grounding? Clearly, these two uses name distinct properties (a cake can be qualitatively heavy without being quantitatively heavy), but does this difference determine grounding, or does grounding, together with an appropriately underspecified lexical semantics, determine at-issue content? We do not have the space to answer these important questions here, but hope to address them in future work.

## 4 Comparisons

The proposal made here differs in non-trivial ways from existing stories in the literature. Along with [Franzén \(2018\)](#), we propose to explain the acquaintance inference in terms of the state of mind expressed by a taste judgment. For Franzén, to call something “*tasty*” is to express one’s liking of its taste, and there is no way of being in such a state if one is not acquainted with the the object under consideration. This, of course, is just what we say. But no story about the acquaintance inference can be complete without an explanation of why it projects out of negation and at the same time gets obviated by certain uses or in certain lexical environments. While Franzén remains silent on this important issue, the framework provided here addresses it head-on.

Indeed, it is due to the complex cancellation data that [Franzén \(2018\)](#) refrains from taking a stand on whether the acquaintance inference stems from the semantics or the pragmatics of taste predicates. On our view, the right answer is that predicates introduce grounding conditions, and that straight assertions inherit these lexically determined constraints. Obviation effects emerge because certain lexical items can override default grounding conditions by fixing, for instance, a doxastic grounding for predicates in their scope. But given the relation between felicity conditions and

expression, the general picture is one in which it is in virtue of the meanings of the vocabulary they contain that assertions come to express the attitudes that they do.

Anand and Korotkova (2018) explicitly aim to explain why epistemic *must* obviates the acquaintance inference for experiential predicates. Semantic values are assigned relative to kernels (sets of sets of possible worlds) in addition to other familiar parameters such as worlds, times, and judges. Taste predications presuppose that the kernel directly settles the issue:

- (27) a.  $\llbracket \textit{tasty} \rrbracket^{c, \langle w, t, K, j \rangle} = \lambda o: K$  directly settles whether  $o$  is tasty for  $j$  in  $w$  at  $t$ . 1 iff  $o$  is tasty for  $j$  in  $w$  at  $t$   
 b.  $K$  directly settles whether  $p$  iff  $\exists q \in K. [q \subseteq p \vee q \subseteq \neg p]$

They then allow operators to manipulate the kernel. Epistemic *must* in particular, replaces  $K$  with  $\{\bigcap K\}$ :

$$(28) \llbracket \textit{must } p \rrbracket^{c, \langle w, t, K, j \rangle} = \llbracket \textit{must } p \rrbracket^{c, \langle w, t, K, j \rangle} (\llbracket p \rrbracket^{c, \langle w, t, \{\bigcap K\}, j \rangle})$$

Like our proposal, Anand and Korotkova (2018) thus explain obviation as a kind of binding effect. But in fact it is not obvious how *must* obviates, since the requirement that  $\{\bigcap K\}$  directly settle  $p$  is in fact at least as strong as the requirement that  $K$  settle  $p$ . This means that whenever “*Sea urchin is tasty*” requires direct evidence, so does “*Sea urchin must be tasty*.” In contrast, the framework proposed here successfully explains obviation effects by shifting the *kind* of attitude that is required to ground the asserted proposition.

Pearson (2013) treats the evidential aspect of predicates of personal taste as a presuppositional affair — these predicates, in context, presuppose that the speaker has direct experience of the item under consideration — but it has been frequently observed that the acquaintance inference does not project in the way ordinary presuppositions do (see e.g. Ninan 2014 and Muñoz 2019). For instance, although epistemic *must* is a presupposition “hole” in Karttunen’s (1973) sense, so that the presupposition triggered by *stop* in (29a) projects, it blocks the evidential aspect of predicates of personal taste from projecting, as shown by (29b).

- (29) 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 (29b), which is clearly not the case. In contrast, we have seen that the story told here has no trouble explaining why certain expressions such as epistemic *must* block the acquaintance inference: they do so because taste predicates fail to express experiential attitudes in their scope.

Ninan (2014) considers (but does not fully endorse) a pragmatic explanation of the acquaintance inference, starting with the knowledge norm of assertion that we already alluded to earlier: that one must assert a sentence  $\phi$  in some context  $c$  only if one knows that  $\phi$  is true as used in  $c$  (Williamson 1996). Combine this norm with the following

acquaintance principle: whenever a taste predicate is used autocentrically, knowing that  $x$  is tasty (or that it is not tasty) requires first-hand knowledge of  $x$ 's taste. The acquaintance inference follows immediately and since the explanatory strategy 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 perfectly compatible with the observation that such uses do not give rise to the acquaintance inference.

There are some parallels between our account and the line considered by Ninan — most notably, both tie acquaintance inferences to constraints on assertion. Nonetheless there are some differences, and these differences matter since Ninan's story faces some difficulties. For starters, the assumption that one can only know that  $x$  is tasty if one has tasted  $x$  is not unproblematic, as [Muñoz \(2019\)](#) forcefully demonstrates. For instance, knowledge claims about taste that are based on indirect evidence are felicitous in general.

- (30) I know that the licorice is tasty...
- a. ✓ ...because Alfonse made it.
  - b. ✓ ...because it's Finnish.

(30a) and (30b) easily roll of the tongue, and this would be more than surprising if the acquaintance principle were in fact true. Furthermore, [Muñoz \(2019\)](#) observes that predicates of personal taste live happily under evidentials that mark indirect evidence but do not void the speaker's commitment to the proposition at play (such as Tibetan *yod red*). All of this puts substantial pressure on a key assumption that is needed to get Ninan's story off the ground.

Second, one is evidently able to know that  $x$  is tasty in exocentric contexts without having first-hand knowledge of  $x$ 's taste. The question that remains unresolved in Ninan's framework (as he himself observes) is why this is so, and also why exocentric uses imply that the individual whose tastes and sensibilities matter has in fact direct knowledge of the item under consideration.

Both of these issues are avoided in the framework developed here. Plain assertions involving predicates of personal taste give rise to an acquaintance inference, we said, because they express experiential attitudes. A speaker who is in such a state believes that the taste predicate applies to the object under consideration, and such a state may very well constitute knowledge (whatever knowledge about matters of taste amounts to). We do not rule out that beliefs or even knowledge about matters of taste may be based on, for instance, hearsay; our central claim is that it is not the primary function of taste predicates to express such states of mind. As such, the felicity of the sequences in (30) as well as the existence of felicitous embeddings of taste predicates under indirect but commitment preserving evidentials is compatible with everything we have said here. Since the framework also has a straightforward story to tell about exocentric uses of taste predicates (and their normative cousins) we conclude that it compares favorable to the pragmatic account considered by Ninan.

It remains to comment on the recent proposals by [Muñoz \(2019\)](#) and by [Kennedy and Willer \(2019\)](#). Muñoz derives the acquaintance inference as a consequence of belief, given a particular lexical semantic analysis of experiential predicates. Specifically,

Muñoz argues for an analysis of experiential properties such as *tasty* as properties that hold of objects just in case they are disposed to produce direct evidence of a relevant experiential state. Thus on this view *tasty* holds of an object just in case it is disposed to produce direct evidence that it is tasty, which is (according to Muñoz) direct evidence that it produces gustatory pleasure. Muñoz reasonably assumes that an individual’s doxastic alternatives are a subset of her experiential alternatives, and so it follows that if an individual believes that sea urchin is tasty — that the proposition that sea urchin is tasty is true in all her doxastic alternatives — then the proposition that sea urchin is tasty must also be true in some of her experiential alternatives. That then means that some of her experiential alternatives are ones in which sea urchin has the property of producing direct evidence of gustatory pleasure, and since experiential alternatives are defined in a way that makes them uniform with respect to direct evidence, it must be the case that *all* of her experiential alternatives are ones in which sea urchin produces direct evidence of gustatory pleasure. But that can only be the case if she has such direct evidence, i.e. if she has tasted the sea urchin. Finally, assuming a commitment to belief in  $p$  as a standard felicity condition on assertion of  $p$ , it follows that a condition on assertion of an experiential proposition will be a commitment to having direct evidence of the sort we see manifested in acquaintance inferences.

Kennedy and Willer (2019) suggest that plain assertions involving taste predicates are assertions of propositions that exhibit a distinct kind of contingency, and that a speaker can satisfy the belief or knowledge norm on assertion for such a proposition only when she knows the relevant facts of the ground: in the case of *tasty*, the taste of the item under consideration; in the case of *pretty*, the visual appearance of the item (or person) under consideration; and so on. They then add the assumption that one cannot come to know facts like how something tastes or looks without having tasted or seen it, which they take to be part of world knowledge that is not in need of further explanation by the semanticist.

What Muñoz’s (2019) and Kennedy and Willer’s (2019) analyses have in common, despite differences at important moments of detail, is a distinctly evidential flavor: acquaintance inferences arise because taste judgments require a distinct kind of evidence to be in accordance with the norms of assertion.<sup>18</sup> The proposal developed here, in contrast, is not tied to the notion of evidentiality, since groundedness is not primarily a matter of having some kind of evidence for what one is saying: states of norm acceptance, for instance, ground but do not justify moral claims. It is this feature that allows the proposal made here to not only account for the acquaintance

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<sup>18</sup>Rudin and Beltrama (2019) also attempt to derive acquaintance inferences from evidential considerations, suggesting that subjective predicates are just those for which the devices we may use in order to generate evidence relevant for predicate application are mind-internal, and show a very low degree of “inter-annotator agreement.” It follows that one agent’s assertion that e.g. sea urchin is tasty, even if sincere, cannot provide certainty to another agent that her own mind-internal evidence-generating device will produce the same results; only her own direct experience can provide this evidence. But given that one can come to believe that sea urchin is tasty based on indirect evidence, including testimonial evidence, and indirect evidence is in other cases sufficient to license assertion in English, this account appears to boil down to the stipulation that assertions involving subjective predicates require direct evidence.



inference but also to illuminate its striking parallel with the motivational inference. It remains to be seen whether the alternative proposals considered in this section can be generalized in such a way that their coverage matches the scope of the story told here.

Another feature that is shared by Muñoz’s and Kennedy and Willer’s proposals — and indeed by all accounts that we have considered in this section — is that they derive the acquaintance inference (to varying degrees) from specific assumptions about the lexical semantics of experiential language. Our analysis, in contrast, is not tailored to any particular kind of at-issue semantic content. There may very well be a systematic link between particular kinds of semantic content and particular grounding conditions, but this is a separate issue from the general mechanism that determines what kind of mental state an assertion expressions: it is the mental state specified by predicate-determined grounding conditions, whatever those are.

We thus conclude that the proposal to derive the acquaintance inference (and its motivational cousin) from lexically specified grounding constraints on assertion makes a novel and attractive contribution to the literature. The fact that we also arrive at the most comprehensive treatment of obviation effects that is currently on the market — one that explains how lexical items can modify grounding constraints in the course of semantic composition but also accounts for the delicate acquaintance/motivational inferences surrounding exocentric predicate uses — should give us additional confidence that the proposal developed here is worth taking seriously.

## 5 Conclusion

Acquaintance inferences are interesting, but if the story told here is on the right track they are neither unique in kind nor terribly surprising. For first, there are important parallels between the acquaintance inference and the observation — often taken to motivate a non-cognitivist outlook in meta-ethics — that normative judgments imply the presence of some distinct motivational attitude toward the action under consideration. And second, the natural view that taste predicates express experiential attitudes — just as normative predicates express moral thoughts — makes it easy to see why the acquaintance inference arises: the attitudes that constitute experiential states of mind, intuitively, cannot be acquired without having undergone experiential episodes of the relevant kind. We have proposed to leverage these observations into a fully general account of acquaintance inferences that is rooted in the felicity conditions on assertion. For a sentence to be assertable, the speaker has to be in a certain state of mind. What state of mind this is — and so what state of mind is expressed — depends, in a principled way, on the lexical items that are used, together with the presence or absence of certain embeddings. The resulting account is perfectly compositional and compares favorably to alternative explanations of the acquaintance inference.

Our proposal has a distinctly expressivist flavor, but it is not psychologistic. Instead we combine a standard truth-conditional approach to semantic values with a compositional account of assertability conditions. This has the advantage of bringing our two-dimensional framework — one that identifies what proposition is added to the

common ground and in addition states what state of mind is expressed — to bear on the phenomenon of FAULTLESS DISAGREEMENT: 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). Here the intuition that there is disagreement plays out in virtue of the updates adding incompatible propositions to the common ground. And faultlessness, in our framework, correlates with the legitimacy of maintaining a “difference of opinion,” which on our view is determined by grounding conditions. Experiential grounding leaves a lot of leeway, given individual variation in experience; normative grounding less so, not least because there is stronger practical pressure to coordinate on moral issues (such as, say, the permissibility of torture) than on matters of pure taste (Kölbel 2005); and doxastic grounding tolerates differences of opinion only in hard cases, such as the borderlines of vague predicates, since beliefs come with a mind-to-world direction of fit.

It is fair to ask whether the intuition that attitude types differ in how much they tolerate differences of opinion could be further analyzed, for instance in terms of the presence or absence of some objective method of verification or falsification. A proper response to this question would require a detailed investigation into the question of what makes an attitude subjective or objective. We must leave this complex issue for another day (but see Kennedy and Willer 2019 for discussion). What we have provided here is a systematic story about how natural language predicate expressions lexically encode grounding constraints on assertion and of how these constraints interact compositionally with a number of embedding operators. The resulting systematic account of the kinds of attitudes that speakers express in everyday discourse has, we submit, something genuine to offer for linguists and philosophers alike.

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