Penultimate draft of February 2023. Final version to appear in *Philosophers' Imprint*

An Expressivist Theory of Taste Predicates

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Abstract

Simple taste predications come with an *acquaintance requirement*: they require the speaker to have had a certain kind of first-hand experience with the object of predication. For example, if I tell you that the crème caramel is delicious, you would ordinarily assume that I have actually tasted the crème caramel and am not simply relying on the testimony of others. The present essay argues in favor of a lightweight expressivist account of the acquaintance requirement. This account consists of a recursive semantics and an account of assertion; it is compatible with a number of different accounts of truth and content, including contextualism, relativism, and purer forms of expressivism. The principal argument in favor of this account is that it correctly predicts a wide range of data concerning how the acquaintance requirement interacts with Boolean connectives, generalized quantifiers, epistemic modals, and attitude verbs.

1 Introduction

Imagine that we're at a dessert party and you're wondering what to eat. If I tell you that the crème caramel is really delicious, you would ordinarily assume that I had actually tasted it, and am not just basing my judgment on the say-so of others. If I was instead simply relying on testimony, it would be better for me to hedge in some way, to say, for example, that I'd *heard* that the crème caramel was delicious. Claims about deliciousness contrast here with more straightforwardly factual ones: if, for example, I tell you the crème caramel contains cardamom, you need not reach any very specific conclusion about the basis for my assertion.

This observation has appeared in both the aesthetics literature and in the literature on predicates of taste,[1] and appears to have its roots in some remarks of Kant's:

> For someone may list all of the ingredients of a dish for me, and remark about each one that it is otherwise agreeable to me... yet I

[1] See (Mothersill, 1984, 160), (Pearson, 2013, 117–118), and (MacFarlane, 2014, 3–4).

> am deaf to all these grounds, I try the dish with *my* tongue and my palate, and on that basis... do I make my judgment ((Kant, 2000, §33)).

The phenomenon at issue here is not restricted to gustatory taste. Consider other so-called 'predicates of personal taste'. If I tell you that *Monsieur Hulot's Holiday* is hilarious, you will normally assume I've seen it, and am not just basing my judgment on having read the reviews. If I tell you that spelunking with Sue is fun, you will again normally infer that I myself have spelunked with Sue. A similar phenomenon arguably arises in connection with aesthetic predicates (e.g. *beautiful, dainty, dumpy*), and indeed the present linguistic observation seems to have first arisen in discussions of aesthetic testimony.[2] But the phenomenon doesn't seem to be restricted to predicates that are in some sense evaluative; note for example that if I tell you that the soup tastes like it contains saffron, you will again infer that I've actually tasted it, even though *tastes like it contains saffron* would not seem to be an evaluative predicate in the relevant sense.[3] To simplify matters, we will focus on predicates of gustatory taste (*tasty*, *delicious*); but I believe that most of what we say in what follows can be extended to a wider class of predicates.

In earlier work, I called the inference hearers are apt to draw from an utterance of a simple taste sentence an *acquaintance inference* (Ninan (2014)); I shall speak interchangeably of an *acquaintance requirement*. Note that in my discussion of this inference/requirement I have been hedging: I've been saying that utterances of simple taste sentences *typically* give rise to an acquaintance inference, which suggests that they don't always do so. But under what conditions does this inference fail to arise? As a number of authors have observed, 'exocentric' readings of taste predicates provide one class of exceptions ((Ninan, 2014, 291–292)). Ordinarily, when I call something delicious, I am guided by my own tastes and sensibilities; this is an *autocentric* use. But sometimes I may call something delicious in order to say (roughly) that some salient person or group finds it delicious; this is an *exocentric use*.[4] Consider, for example, the following exchange:

(1) *A*: How is Sue's vacation in Sardinia going?

B: It's going well. The seafood is delicious, she loves the beaches, and she's staying in a nice hotel.

$\not\hookrightarrow$ *B has tasted the seafood in Sardinia*

$\hookrightarrow$ *Sue has tasted the seafood in Sardinia*

B's utterance here would not suggest that *B* has tasted the seafood in Sardinia. But while *B*'s utterance doesn't give rise to a *speaker* acquaintance inference,

[2](Mothersill, 1984, 160). For an overview of the debate about aesthetic testimony (and for references to that literature), see Robson (2012).

[3]For (Ninan, 2014, 291). For related discussion, see Rudolph (2023).

[4](Lasersohn, 2005, §6.1).

it may give rise to some sort of acquaintance inference, since it does seem to suggest that *Sue* has tasted the seafood in Sardinia.[5]

Why do taste predicates give rise to the acquaintance inference? One attractive idea is that the inference arises because simple taste sentences are vehicles not simply for stating facts, but for *expressing our reactions* to experiences we've had.[6] When you taste the crème caramel and you like it, you are in a certain psychological state, a state you can report by saying *I like the taste of the crème caramel*. Thus perhaps when you sincerely say *The crème caramel is delicious*, you are expressing this psychological state, expressing your 'liking' of the taste of the crème caramel. If that thought is correct, then it would seem to explain why the acquaintance inference arises; for it would seem that you can only be said to *like* the taste of something if you have actually tasted it.

This idea is a form of *expressivism* about taste predicates, for it maintains that in saying *The crème caramel is delicious*, one is expressing a certain kind of psychological state, one that is not a belief. Moreover, the psychological state one is expressing does not seem to be one that can be assessed for truth or falsity. (What is it for 'my liking' of the crème caramel to be true? What is it for it be false?) But expressivism has a troubled history, and can seem to raise more problems than it solves. For just how is it that an utterance of *The crème caramel is delicious* comes to be associated with a psychological state of this sort? Note also that when that sentence is embedded in certain complex sentences, utterances of those complex sentences need not express the psychological state in question. For example, I can say (2) even if I have not tasted the crème caramel before, and so cannot truly be said to like it:

(2) If the crème caramel was delicious, Bina will be pleased.

How is this observation to be made compatible with the claim that, when unembedded, *The crème caramel is delicious* expresses my liking of the crème caramel? Doesn't that sentence mean the same thing whether embedded or not?[7]

While much has been said about these problems in the literature on metaethical expressivism, a sober-minded semanticist might wonder if a more conservative solution is available. In what follows, I have two principal aims. The first is to show that at least two 'more conservative' approaches face a number problems, problems which motivate re-considering the expressivist approach

[5]See (Anand and Korotkova, 2018, 63). There may also be cases in which *no* acquaintance inference arises at all, not even an exocentric one. But uncontroversial examples of this are not easy to find, and so I set this issue aside in the present essay.

[6]See (Scruton, 1974, Ch. 4), Franzén (2018), and Willer and Kennedy (2020)). Clapp (2015) and Marques (2016) also advocate expressivist approaches to taste predicates, but they focus on issues surrounding the notion of disagreement rather than on the acquaintance requirement.

[7](Lasersohn, 2005, §4.3) rejects expressivism about taste on roughly these grounds. There is a large literature in metaethics on the problem alluded to above, the 'Frege-Geach' problem. See, for example, Geach (1965), Blackburn (1993), Gibbard (1990), Gibbard (2008), Schroeder (2008), Willer (2017), Yalcin (2012), Yalcin (2018), Pérez Carballo (2020), and the references therein.

(Sections 2-3). The second is to argue that there is a form of expressivism—a 'lightweight' expressivism—that actually *is* quite conservative. For as we shall see, there is a way of taking a fairly standard semantics for taste predicates and overlaying it with a *supervaluational* account of assertion that implements the above expressivist idea (Section 4). The resulting view is compatible with a variety of approaches to truth and content (e.g. contextualism, relativism, and 'pure' expressivism), and also extends our understanding of the relevant empirical terrain. Indeed, the principal argument in favor of this account is that it correctly predicts a wide range of data concerning how the acquaintance requirement interacts with Boolean connectives, generalized quantifiers, epistemic modals, and attitude verbs.[8]

2 The epistemic view

In this and the next section, we discuss two of the main approaches to the acquaintance requirement found in the literature: the *epistemic view* (Section 2) and the *presupposition view* (Section 3). In earlier work (Ninan (2014) 2014), I discussed the epistemic view sympathetically, but here I want to raise some problems for that approach.

The epistemic view consists of two principal claims. The first is the following 'norm of assertion':

> KNOWLEDGE NORM
>
> For any context c, s_c may assert ϕ in c only if s_c knows $\langle\phi\rangle^c$ in c.[9]

Here s_c is the speaker of context c and $\langle\phi\rangle^c$ is the proposition expressed by sentence ϕ in c. We may think of this as a particular way of formulating Grice's Maxim of Quality.[10] The second claim is a principle in the epistemology of taste:

> ACQUAINTANCE PRINCIPLE

[8]The approach advocated here is partly inspired by Willer and Kennedy (2020), which explains certain high-level similarities between the two theories. For example, both theories take the acquaintance requirement to arise out of a normative constraint on assertion, while remaining relatively neutral on certain disputes about truth and content. But there are many differences between the two theories, both technical and conceptual. For example, the account developed below consists of a standard static semantics plus a supervaluational definition of assertability; Willer and Kennedy propose a dynamic semantics in which supervaluationism plays no role. Furthermore, Willer and Kennedy do not discuss disjunction and generalized quantifiers, both of which play a large role in framing the present dialectic. Finally, see n. 27 for a potential problem facing Willer and Kennedy's approach, a problem not faced by the present approach. I should also mention that the formal proposal presented in Section 4 is similar to the one I offered in an earlier paper, Ninan (2020). But in that work, the acquaintance requirement was treated as a presupposition, a view I now reject for the reasons given in Section 3.

[9]Gazdar (1979), Williamson (1996).

[10]Grice (1989).

Normally, if c is an autocentric context, then s_c knows in c whether $\langle o\ is\ delicious\rangle^c$ is true only if s_c has tasted o prior to t_c in w_c.[11]

We restrict ourselves to autocentric contexts for the moment. Suppose a speaker asserts *o is delicious*. Then, by the Knowledge Norm, this will likely implicate that the speaker knows that o is delicious, since the speaker will normally be assumed to be attempting to comply with that norm. But if the speaker knows that o is delicious, then the Acquaintance Principle will imply that the speaker has tasted o. Thus, the acquaintance inference emerges as a Quality implicature.

The epistemic view correctly predicts a number of facts about how the acquaintance requirement projects out of various linguistic environments (Ninan (2014) 2014). Given a sentential operator O, a sentence ϕ, a context c, and a property F that ϕ has in c, we say that *F projects over O in c* just in case $O\phi$ also has F in c. And we can say, more simply, that F projects over O just in case for most normal contexts c, F projects over O in c. Note that the acquaintance requirement appears to project over negation:

(3) (a) The crème caramel is delicious.
(b) The crème caramel is not delicious—it's too sweet.
$\hookrightarrow$ *the speaker has tasted the crème caramel*

The epistemic view predicts this because the Acquaintance Principle is a constraint on knowing *whether* o is delicious. So it implies that if one knows that o is not delicious, one must have tasted o. Given the Knowledge Norm, this means that an assertion of (3b), for example, will also typically implicate that the speaker has tasted the crème caramel.

Note that the acquaintance inference *disappears* under epistemic modals and in the antecedents of indicative conditionals:

(4) (a) The crème caramel must have been delicious.
(b) The crème caramel might have been delicious.
(c) If the crème caramel was delicious, Bina will be pleased.
$\not\hookrightarrow$ *the speaker has tasted the crème caramel*

The epistemic view seems to predict this as well, since Quality implicatures likewise disappear in these environments:

(5) (a) It must have rained last night.
(b) It might have rained last night
(c) If it rained last night, the streets will be wet
$\not\hookrightarrow$ *the speaker knows it rained last night*[12]

[11] Here "o" is being used as a term in the metalanguage that picks out an arbitrary object in the domain and also as a variable in the object language which is implicitly assigned to that object. This principle is inspired by a similar one found in (Wollheim, 1980, 233).

[12] The claim that *It must have rained last night* does not suggest that the speaker knows it rained last night is controversial, turning in part on the question of whether *must* ϕ entails ϕ. We set that issue aside here, though see von Fintel and Gillies (2010).

Despite these attractions, the epistemic view also has its share of problems. (Willer and Kennedy, 2020, 848) argue on lingusitic grounds that that the Acquaintance Principle is false,[13], while (Anand and Korotkova, 2018, 63) point out that the foregoing account does nothing to explain why exocentric uses of taste predicates give rise to exocentric acquaintance inferences.[14] These are important objections, but I want to set them aside here in order to focus on some challenges that arise when we consider how the acquaintance requirement interacts with disjunction and with quantification, since these observations will guide our later discussion.

To see the problem about disjunction, start with an observation due to Fabrizio Cariani.[15] Cariani points out that a disjunction of simple taste sentences tends to give rise to a disjunction of acquaintance requirements:

(6) A has just arrived at the party. She and B are looking at the dessert table.

(a) [A]: What's good here?

(b) [B]: Either the crème caramel is delicious or the panna cotta is—I couldn't tell which was which.

$\hookrightarrow$ *B has tasted the crème caramel or B has tasted the panna cotta*

In (6b), the acquaintance requirements do not *project* over the disjunction operator, but they do not disappear either. The fact that each disjunct carries an acquaintance requirement when it occurs as a standalone sentence appears to effect the interpretation of the disjunction.

What does the epistemic view tell us about B's utterance of (6b)? Assuming B is in a position to assert (6b), the Knowledge Norm tells us that B knows that either the crème caramel is delicious or the panna cotta is delicious, i.e. $\mathcal{K}(Ta \vee Tb)$.[16] But... now we're stuck. For the Acquaintance Principle only tells us that acquaintance is requirement for knowing *atomic* taste sentences or their negations, sentences of the form Ta and $\neg Ta$. It simply says nothing about what is required to know a *disjunction* of atomic taste sentences, sentences of the form $(Ta \vee Tb)$.

Note that this doesn't show that the epistemic view is false—it merely shows that the view fails to predict an aspect of the phenomenon. So perhaps if we supplement the epistemic view with some further principles, the resulting view would yield the desired prediction. One possibility would be add the following claim to the epistemic view:

GENERAL DISJUNCTION PRINCIPLE

Normally, one knows $(\phi \vee \psi)$ only if one knows ϕ or one knows ψ.

$\mathcal{K}(\phi \vee \psi) \hookrightarrow (\mathcal{K}\phi \vee \mathcal{K}\psi)$

[13] See also (Muñoz, 2019, 164–169).

[14] Though see (Dinges and Zakkou, 2021, 1193–1194).

[15] (Cariani, 2021, §13.8).

[16] For any term a, I use Ta to translate *a is delicious.*

But this principle is quite clearly false: I may know that either the Celtics will win the Championship or the Warriors will (they're the only two teams left) without knowing which of them will win.

But perhaps the General Disjunction Principle only fails because it is too general. Perhaps we should have adopted a disjunction principle more narrowly-tailored to the present case, one that only concerns disjunctions of atomic taste sentence and their negations. Let's say that a sentence ϕ is a *taste literal* iff it is either an atomic taste sentence or the negation thereof. Then we might propose adding the following claim to the epistemic view:

> DISJUNCTION PRINCIPLE
>
> If ϕ and ψ are taste literals, then normally one knows $(\phi \vee \psi)$ only if one knows ϕ or one knows ψ.
>
> $\mathcal{K}(\phi \vee \psi) \hookrightarrow (\mathcal{K}\phi \vee \mathcal{K}\psi)$, for taste literals ϕ and ψ

If the Disjunction Principle were accepted, then the resulting epistemic view would predict that B's utterance of (6b) implies that either B had tasted the crème caramel or B had tasted the panna cotta.

But there are at least three problems with the resulting view. First, unless more is said, it is *ad hoc*. As we saw above, it is not true in general that if one knows a disjunction then one knows one of its disjuncts, so why would that be true in this special case? Second, it doesn't even seem true in this special case. The Disjunction Principle implies that, in the scenario described above, either B knows that the crème caramel is delicious or B knows that the panna cotta is. But it appears that B knows neither of these things. What B knows is that *one* of them is delicious, but he doesn't know which one it is. After all, if he did know, e.g., that the crème caramel is delicious, wouldn't the Maxim of Quantity enjoin him to say this instead of the disjunction that he in fact utters?

The third problem arises in connection with another of Cariani's observations. For Cariani also points out that certain disjunctions of taste literals—namely, instances of excluded middle—do *not* imply a disjunction of acquaintance requirements:

(7) Either the crème caramel is delicious or it isn't.

$\not\hookrightarrow$ *the speaker has tasted the crème caramel*

But if the epistemic view is combined with the Disjunction Principle, the resulting view predicts that an assertion of (7) (in an autocentric context) should implicate that the speaker had tasted the crème caramel. That seems wrong. Whether a disjunction of taste literals gives rise to a disjunction of acquaintance requirements appears to depend on the logical relations between the disjuncts.

Quantifiers raise related problems for the epistemic view. Suppose, for example, that I say to you, *Something on the dessert table is delicious.* This would typically imply that I had tasted something on the dessert table. But, again, this is not predicted by the epistemic view. My utterance of the existentially quantified claim $some_x(Dx)(Tx)$ will, by the Knowledge Norm, imply that I know that claim, i.e. $\mathcal{K}(some_x(Dx)(Tx))$.[17] But, once again, we are stuck, since the Acquaintance Principle is simply silent about what is required for knowing an existentially quantified claim. Other quantifiers also seem to imply quantified acquaintance requirements:

(8) Everything on the dessert table is delicious.
$\hookrightarrow$ *the speaker has tasted everything on the dessert table*

We might try to explain these facts by adopting yet another principle:

QUANTIFIER PRINCIPLE

Normally, one knows that Q F's are delicious only if Q F's are known by one to be delicious.

$\mathcal{K}(Q_x(Fx)(Tx)) \hookrightarrow Q_x(Fx)(\mathcal{K}Tx)$

Here Q is being used as a schematic letter whose substituends are quantificational determiners (*every, some, no*, etc.). While this might suffice to handle the observations we've discussed so far, the generalization embodied in the Quantifier Principle turns out to fail when we consider certain other quantifiers. Consider *nothing* for example:

(9) Nothing on the dessert table is delicious.

This seems to imply that the speaker has tasted everything on the table. But when supplemented by the Quantifier Principle, the epistemic view only tells us that nothing on the table is known by the speaker to be delicious, i.e. $no_x(Dx)(\mathcal{K}Tx)$. But, given the logic of the epistemic view, that appears to be compatible with the speaker's not having tasted anything on the dessert table.

Unlike *some* and *every*, the quantificational determiner *no* fails to be 'right upward monotonic' (RUM): while *Every girl runs quickly* entails *Every girl runs*, *No girl runs quickly* does not entail *No girl runs*.[18] Other non-RUM determiners create trouble for the Quantifier Principle as well. For example:

(10) Exactly two things on the dessert table are delicious.

This again seems to imply that the speaker has tasted everything on the dessert table. The Quantifier Principle seems instead to predict that exactly two things on the dessert table are known by the speaker to be delicious. But, given the logic of the epistemic view, this is compatible with the speaker not having tasted everything on the dessert table.

[17] I use Dx to translate *x is on the dessert table*; recall that Tx translates *x is delicious* (T is a taste predicate).

[18] See, for example, (Winter, 2016, Ch. 4).

3 The presupposition view

Perhaps the epistemic view can be rescued by supplementing it with principles other than the ones canvassed above. But rather than investigate that possibility here, we move on to consider an alternative hypothesis.

As we saw earlier, the acquaintance inference projects over negation—recall (3). And note that this is also a characteristic feature of *presuppositions*:

(11) (a) Sue stopped smoking.

(b) Sue didn't stop smoking.

$\hookrightarrow$ *Sue smoked in the past.*

Now there are various ways of characterizing the relevant notion of presupposition, but it will suffice for the moment to simply say that the *presupposition view* is the hypothesis that the relationship between *The crème caramel is delicious* and *I have tasted the crème caramel* is essentially like the relationship between *Sue stopped smoking* and *Sue smoked in the past.* Furthermore, advocates of the presupposition view typically adopt the (fairly standard) assumption that a sentence with a false presupposition lacks a truth value, and so this is the version of the presuppostional view that we consider here.[19]

Some of the other observations discussed above also support the presupposition view. For example, we saw earlier that a disjunction of (logically unrelated) taste literals typically gives rise to a disjunction of acquaintance requirements—recall (6b). Similarly, a disjunction of atomic sentences containing presupposition triggers typically gives rise a disjunctive presupposition:

(12) Sue stopped smoking or Mary stopped smoking—I can't remember which.

$\hookrightarrow$ *Sue smoked in the past or Mary smoked in the past.*

We also saw earlier that when we place an atomic taste sentence in the scope of a universal quantifier, we get a universally quantified acquaintance requirement—recall (8). Again, something similar happens with presuppositions:

(13) Every student in my logic class stopped smoking.

$\hookrightarrow$ *Every student in my logic class smoked in the past.*

That is encouraging for advocates of the presupposition view, but there are disanologies as well. Recall our earlier observation that the acquaintance requirement disappears when we place an atomic taste sentence in the scope of an epistemic modal or in the antecedent of an indicative conditional (see the examples in (4)). This poses a *prima facie* problem for the presupposition view, since presuppositions typically project out of these environments:

(14) (a) Sue must have stopped smoking.

[19] Pearson (2013), Anand and Korotkova (2018), and Ninan (2020) (2020) all advocate versions of the presupposition view. For an introduction to the relevant notion of presupposition, see Beaver *et al.* (2021).

(b) Sue might have stopped smoking.

(c) If Sue stopped smoking, her kids will be pleased.

$\hookrightarrow$ *Sue smoked in the past.*

Unless more is said, the presupposition view will predict, falsely, that the acquaintance requirement projects out of these environments as well ((Ninan, 2014, 298) (2014)).

Anand and Korotkova (2018) offer a solution to this last problem. Their idea is that the acquaintance requirement is essentially a presupposition, but one that can be *obviated* by certain markers of 'indirectness' such as epistemic modals. The basic strategy of their approach is that while *o is delicious* is defined in an autocentric context only if the speaker has tasted o before, *o might be delicious* is defined at every context, even those autocentric contexts in which the speaker has not tasted o. Thus, simple taste sentences carry the acquaintance requirement, while sentences of the form *o might be delicious* do not.

Anand and Korotkova formulate their semantics using the notion of a *kernel*, a set of propositions that constitutes an agent's direct evidence on a given occasion (von Fintel and Gillies (2010)). They hypothesize that *o is delicious* presupposes that the relevant kernel directly settles whether o is delicious to the relevant individual (the 'judge'). More precisely, let a point of evaluation consist of a world w, a judge j, and a kernel K, where K is a set of propositions (i.e. a set of partial functions from worlds to truth values). I assume that (w, j, K) corresponds to a context only if for all $p \in K$, $p(w) = 1$. Then Anand and Korotkova propose the following semantics for taste predicates:

> $[\![\textit{o is delicious}]\!]^{w,j,K}$ is defined iff K directly settles $[\lambda w'.\ o$ is delicious to j in $w']$.
>
> Where defined, $[\![\textit{o is delicious}]\!]^{w,j,K} = 1$ iff o is delicious to j in w.

A kernel K *directly settles* a proposition q just in case K contains a proposition p such that p entails q or p entails the negation of q. Anand and Korotkova assume that a kernel directly settles $[\lambda w'.\ o$ is delicious to j in $w']$ only if it contains a proposition that entails $[\lambda w'.\ j$ has tasted o in $w']$ (67). Thus, if an autocentric context is one in which the speaker is the judge, then *o is delicious* will be defined at such a context only if the speaker has tasted o before. To see this, suppose $[\![\textit{o is delicious}]\!]^{w_c,j_c,K_c}$ is defined, where c is an autocentric context. Then K_c directly settles $[\lambda w'.\ o$ is delicious to j_c in $w']$. So K_c contains a proposition p such that for all w, if $p(w) = 1$, then j_c has tasted o in w. Since (w_c, j_c, K_c) corresponds to a context and $p \in K_c$, $p(w_c) = 1$. So j_c has tasted o in w_c. Since c is autocentric, j_c is the speaker of c. Given an appropriate lexical entry for negation, *o is not delicious* will likewise be defined at an autocentric context only if the speaker has tasted o before. So Anand and Korotkova predict the acquaintance requirement for atomic taste sentences and their negations.

Anand and Korotkova then hypothesize that epistemic modals obviate this presupposition by over-writing the kernel parameter (68). This has the effect of altering the presupposition so that it becomes trivial, which is essentially equivalent to saying that the sentence has no presupposition at all. Here, for example, is an entry for epistemic *might* that does the job:

> $[\![might\ \phi]\!]^{w,j,K}$ is defined iff $[\![\phi]\!]^{w,j,\mathcal{P}(W)}$ is defined.
>
> Where defined, $[\![might\ \phi]\!]^{w,j,K} = 1$ iff for some $w' \in \cap K$, $[\![\phi]\!]^{w',j,\mathcal{P}(W)} = 1$.[20]

Here $\mathcal{P}(W)$ is the set of all propositions (the set of all partial functions from worlds to truth-values). This set directly settles any proposition p, since p itself will be an element of $\mathcal{P}(W)$. The set $\cap K$ is:

$$\{w' : \text{for all } p \in K, p(w') = 1\}.$$

We can show now that, on this approach, *might* (*o is delicious*) will be defined at every context. To see this, let (w, j, K) be a context. Then we have:

> $[\![might\ (o\ is\ delicious)]\!]^{w,j,K}$ is defined iff $[\![o\ is\ delicious]\!]^{w,j,\mathcal{P}(W)}$ is defined.

And we have:

> $[\![o\ is\ delicious]\!]^{w,j,\mathcal{P}(W)}$ is defined iff $\mathcal{P}(W)$ directly settles $[\lambda w'.\ o$ is delicious to j in $w']$.

Now, given Anand and Korotkova's assumption, $\mathcal{P}(W)$ directly settles $[\lambda w'.\ o$ is delicious to j in $w']$ just in case $\mathcal{P}(W)$ contains a proposition that entails $[\lambda w'.\ j$ has tasted o in $w']$. But since $\mathcal{P}(W)$ is the set of *all* propositions, it of course contains such a proposition: $[\lambda w'.\ j$ has tasted o in $w']$ itself will do. Thus, since *might* (*o is delicious*) is defined at every context, it will be defined even at autocentric contexts in which the speaker has not tasted o. Thus, on this approach, *might* (*o is delicious*) will not give rise to an acquaintance inference.

While this is an elegant solution to the initial problem for the presupposition view, I see three potential problems for the resulting account.

First, I noted above that the presupposition view was supported by one of Cariani's observations about disjunction. But recall Cariani's other observation about disjunction, which is that $(Ta \vee \neg Ta)$ is assertable even if the speaker hasn't tasted a before. But if the speaker of context c hasn't tasted a before, this version of the presupposition view predicts that neither Ta nor $\neg Ta$ will be defined at the point of evaluation (w_c, j_c, K_c). It is thus hard to see how $(Ta \vee \neg Ta)$ could come out true at that point. For on standard trivalent theories of disjunction, if ϕ and ψ are both undefined, then so is $(\phi \vee \psi)$.[21]

[20] This account of *might* is my own proposal. Anand and Korotkova do not give a semantics for *might*. They do give a semantics for *must*, but it does not actually obviate the acquaintance inference, as (Willer and Kennedy, 2020, 847) observe. The account given above corrects this flaw. The key is to make *might* shift the kernel parameter to $\mathcal{P}(W)$ rather than to $\cap K$.

[21] This is true both of the Strong Kleene theory and the theory of Peters (1979).

Second, I also noted above that the acquaintance requirement interacts with the universal quantifier in much the same that standard presuppositions do. But when we turn to other quantifiers—such as the non-RUM quantifiers discussed earlier—we start to see disanalogies. Compare:

(10) Exactly two things on the dessert table are delicious.

(15) Exactly two students in my class stopped smoking recently.

Earlier we suggested that (10) would ordinarily imply that the speaker had tasted everything on the dessert table. But (15) does not necessarily give rise to a corresponding universal presupposition, as B.R. George observes.[22] To see this, suppose there are ten students in my class, two of whom smoked in the past and no longer smoke, eight of whom never smoked. According to George, (15) has a reading on which it is true in this situation.

These differences between *delicious* and standard presupposition triggers poses a *prima facie* problem for any theory that hopes to treat the acquaintance requirement as a standard presupposition. For suppose we construct a theory of presupposition that predicts that (15) has reading on which it means:

> Exactly two students in my class smoked in the past and do not smoke now.

If the theoretical machinery that produces this reading is simply applied without alteration to (10), the resulting theory will predict that (10) has a reading on which it means (approximately):

> Exactly two things on the dessert table are such that I have tasted them and find them delicious.

But this does not seem to be a possible interpretation of (10). The upshot of this is that presupposition view needs a further mechanism—beyond the obviation mechanism discussed above—in order to predict the behavior of taste predicates under non-RUM quantifiers. But proponents of the presupposition view have yet to spell out the workings of such a mechanism.

The final issue I want to raise concerns what I regard as a conceptually awkward feature of the presupposition view. Suppose you haven't tasted the crème caramel, but you believe that it is delicious—it looks delicious and everyone at the party is raving about it. This seems possible—it seems possible to believe that something is delicious even if you haven't tasted it yet, as a number of authors have observed.[23] As we'll see in a moment, the presupposition view can accommodate this fact. The trouble arises when we go on to ask the following question: given that you believe that the crème caramel is delicious, what should your attitude towards the content of the sentence *The crème caramel is delicious* be? The natural answer is: you should believe it, at least if you are in an autocentric context. But the presupposition view appears to predict

[22] (George, 2008, 13–14).

[23] (Stephenson, 2007, §2.5.2), (Muñoz, 2019, 187), (Willer and Kennedy, 2020, 849).

otherwise: it appears to predict that you can believe that the crème caramel is delicious while at the same time rejecting the content of the sentence *The crème caramel is delicious.* This is an odd result.

To see why the presupposition view has this feature, note that our initial observation above—that you can believe that something is delicious even if you haven't tasted it yet—suggests that *believes* also obviates the acquaintance inference. Note, for example, the felicity of the following:

(16) I believe the crème caramel is delicious, but I haven't tried it yet.

This could be handled in Anand and Korotkova's system by allowing *believes* to shift the kernel parameter:

> $[\![B_i\ \phi]\!]^{w,j,K}$ is defined iff for all $w' \in Dox_{w,s_c}$ $[\![\phi]\!]^{w',j,\mathcal{P}(W)}$ is defined.
>
> Where defined, $[\![B_i\ \phi]\!]^{w,j,K} = 1$ iff for all $w' \in Dox_{w,s_c}$, $[\![\phi]\!]^{w',j,\mathcal{P}(W)} = 1$

Here, B_i translates *I believe*, and Dox_{w,s_c} is the set of worlds compatible with what the speaker s_c believes in w. Because B_i shifts the kernel parameter to $\mathcal{P}(W)$, when we combine this with Anand and Korotkova's account of taste predicates we get the desired result that *I believe the crème caramel is delicious* may be true in an autocentric context even if the speaker hasn't tasted the crème caramel.

So far, so good. Now note that in frameworks like the one Anand and Korotkova employ, it is natural to provide a definition of the *content* of a sentence ϕ relative to a context c (aka 'the proposition expressed by ϕ at c').[24] Ordinarily, this is thought to be what someone who uttered ϕ in c would thereby assert.[25] And it would be what a sincere utterance of ϕ in c would add to the *common ground* of c.[26] If we adopt a contextualist approach to this notion, we would define it as follows:

> The content of ϕ at c is: $[\lambda w : [\![\phi]\!]^{w,j_c,K_c}$ is defined. $[\![\phi]\!]^{w,j_c,K_c} = 1]$.

So the content of ϕ at c is a partial function from worlds to truth values. It is defined at a world w iff $[\![\phi]\!]^{w,j_c,K_c}$ is defined. If defined at w, it maps w to truth iff $[\![\phi]\!]^{w,j_c,K_c} = 1$.

Now when we take this definition of the content of ϕ at context c and combine it with the semantics for taste predicates that Anand and Korotkova offer, we get the result that the content of *The crème caramel is delicious* at an autocentric context c is the following proposition:

(a) $[\lambda w' :\ s_c$ has tasted the crème caramel in w'. the crème caramel is delicious to s_c in $w']$

[24] Kaplan (1989).
[25] Ninan (2010).
[26] Stalnaker (1978) and Stalnaker (2002).

where s_c is the speaker of c. This is a 'partial proposition', a partial function from worlds to truth values. It is defined at a world w iff s_c has tasted the crème caramel in w. Where defined, it maps w to truth just in case the crème caramel is delicious to s_c in w.

Now here is the problem. Suppose that *I believe the crème caramel is delicious* is true in an autocentric context c. Suppose further that the speaker s_c hasn't tasted the crème caramel and that s_c believes that they haven't tasted the crème caramel. Then it follows that, if s_c's belief state is non-empty, s_c does not believe proposition (a) in context c. To see this, let w be a world compatible with what s_c believes in c. Since s_c believes in c that they have not tried the crème caramel yet, it follows that s_c has not tried the crème caramel in w. Hence, (a) is not defined at w, and so does not map w to 1. Thus, it follows that s_c does not believe proposition (a) in c. But since (a) is the proposition expressed by *The crème caramel is delicious* in c, it follows that although the sentence *I believe the crème caramel is delicious* is true in context c, the speaker does not believe the proposition expressed by *The crème caramel is delicious* in c.

But how can this be? How can I believe that the crème caramel is delicious, but not believe the proposition expressed by the sentence *The crème caramel is delicious* in my autocentric context? Don't I *have to* believe that content, given that I believe that the crème caramel is delicious? Perhaps there is some story one could tell about sentences, contents, and beliefs that would make negative answers to these questions palatable, but I would prefer to see if we can formulate a theory that avoids this problem altogether.[27]

What this last observation seems to show is that the acquaintance requirement should be thought of as a requirement on *assertability* not on *truth* or on *having a truth value.* In order for *The crème caramel is delicious* to be *assertable* at a context, it is required that the speaker has tasted the crème caramel before. But in order for that sentence to be *true* at a context, it *isn't* required that the speaker has tasted the crème caramel before. That is why you can believe the content of *The crème caramel is delicious* even if you haven't tasted the crème caramel yet—you can believe it because it still might be true.

4 The expressivist view

Although I reject the epistemic view and the presupposition view for the reasons given, our expressivist alternative will incorporate insights from each view. From the epistemic view, we take the idea that the acquaintance requirement is

[27] I should note the odd consequence here doesn't depend on the contextualist account of content defined above; the same problem arises if we were to instead adopt a relativist or pure expressivist account of content (on which see below). The problem also seems to arise for the view of Willer and Kennedy (2020). For on their approach, if I haven't tasted the crème caramel and I occupy an autocentric context, then the content of *The crème caramel is delicious* will be the empty set. Thus, I may believe that the crème caramel is delicious without believing that content.

generated in part by a normative requirement on assertion, and from the presupposition view, we take the idea that certain operators obviate the acquaintance requirement by manipulating a parameter in the points of evaluation. But the expressivist theory improves on these approaches: unlike the epistemic view, its account of the basic acquaintance inference extends smoothly to disjunction and quantifiers; unlike the presupposition view, it does not make the acquaintance requirement a requirement on the truth of taste sentences.

Recall the key expressivist idea: in saying that the crème caramel is delicious, I am expressing 'my liking' of the taste of the crème caramel. Since I can't like the taste of something without having tasted it, that explains why the acquaintance inference arises. But what do we mean when we say that a speech act *expresses* a given mental state? While there are no doubt different plausible answers we could give to this question, I shall take my cue from (Willer and Kennedy, 2020, 831) who suggest that speech acts "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 the speech act." Suppose, for example, that there is a norm that entails that one may assert ϕ only if one believes ϕ. Then if I assert ϕ, my assertion will ordinarily implicate that I believe ϕ. For if I assert ϕ, my audience will normally assume that I am attempting to comply with that norm, and if I am complying with it, I will believe ϕ. That is one sense in which assertions may be said to express beliefs.

If we want to say that my assertion of *The crème caramel is delicious* expresses my liking of the crème caramel in this sense, we need a theory according to which there is a norm that entails that one may assert *The crème caramel is delicious* only if one likes it. For if there is such a norm, then if I assert *The crème caramel is delicious*, my assertion will typically implicate that I like the crème caramel. For if I assert that sentence, my audience will normally assume that I am attempting to comply with that norm, and if I am complying with it, I will like the crème caramel. But in light of the examples discussed above, the theory will also need to cover more complex cases. For example, when I taste all of the items on the dessert table and like exactly two of them, I am in certain complex psychological state, the state of liking two items on the dessert table and disliking all of the others. So the norm in question will need to entail that I may assert *Exactly two things are on the dessert table are delicious* only if I am in this complex state.

What kind of inference is the acquaintance inference according to this view? On the present approach, the relationship between an assertion of *The crème caramel is delicious* and the proposition that the speaker likes the taste of crème caramel is similar to the the relationship between an assertion of *It's raining* and the proposition that the speaker believes that it's raining. We may call such inferences *expressive inferences*, for they are inferences from an utterance to a proposition concerning the state of mind the speaker expresses in making that utterance. Thus, according to the expressivist theory of taste predicates offered here, the acquaintance inference is an expressive inference.

4.1 An informal sketch

Our approach starts with the idea of a *categorical standard of taste*. You can think of your categorical standard of taste as a record of what you've tasted and whether you found it delicious or not. We can model your categorical standard of taste as a partial function χ that maps items in the relevant domain of discourse D to 0 or 1. More specifically, χ maps an object o to 1 if you tasted and liked o, it maps o to 0 if you tasted and didn't like o, and it is undefined for o if you haven't tasted o. Suppose, for example, that there are only three things in the relevant domain of discourse: a crème caramel, a sponge cake, and an apple tart. And suppose you've only tried the crème caramel and the sponge cake, and that you liked the crème caramel but didn't like the sponge cake. Then your categorical standard χ maps the crème caramel to 1 (since you liked it), the sponge cake to 0 (since you didn't like it), and is undefined for the apple tart (since you haven't tried it).

The other notion we need is that of a *complete extension* of your categorical standard of taste. A complete extension of your categorical standard χ is simply any way of extending χ to *all* of the items in the domain, including the ones you haven't tasted. In other words, a complete extension of your categorical standard χ is a *total* function σ from D to $\{0,1\}$ such that for any $o \in D$ for which χ is defined, $\sigma(o) = \chi(o)$. Thus, any complete extension of χ agrees with χ on all the items that χ decides, but then goes on to decide all the other items in the domain as well. So if there are n ($n \geq 0$) things in the domain that you haven't tasted, there will be 2^n complete extensions of your categorical standard. Since, for example, there is only one relevant thing you haven't tasted in the scenario described above, there are two complete extensions of your categorical standard:

> σ_0, which maps the crème caramel to 1, the sponge cake to 0, and the apple tart to 0;
>
> σ_1, which maps the crème caramel to 1, the sponge cake to 0, and the apple tart to 1.

Note that both of these coincide with χ on the items you've already tasted, namely the crème caramel and the sponge cake.

Now let's say that a sentence of the form *a is delicious* is satisfied at a complete extension σ iff σ maps a to 1. And let us say that a sentence of the form *not-*ϕ is satisfied at a complete extension σ iff ϕ is not satisfied at σ. Furthermore, let us say that a sentence ϕ is *assertable for you* iff: ϕ is satisfied at *every* complete extension σ of your categorical standard χ. Then we predict that, since you haven't tasted the apple tart, you can assert neither *The apple tart is delicious* nor its negation. To see this, note that *The apple tart is delicious* is assertable for you iff every complete extension of your categorical standard χ maps the apple tart to 1. But since σ_0 maps the apple tart to 0, it follows that that sentence is not assertable for you. Note also that *The apple tart is not delicious* is assertable for you iff it is satisfied at every complete extension of your categorical standard. But consider σ_1. *The apple tart is not delicious* is satisfied at σ_1 iff *The apple tart is delicious* is *not* satisfied at σ_1. But since σ_1 maps the apple tart to 1, *The apple tart is delicious is* satisfied at σ_1, which means that its negation is not satisfied at σ_1. Since σ_1 is a complete extension of your categorical standard, it follows that *The apple tart is not delicious* is also not assertable for you. Thus, we get predict that both *a is delicious* and its negation are subject to the acquaintance requirement.

But the real test of this theory is how it handles the interpretation of complex sentences, such as disjunctions and quantified sentences. To extend the theory to these cases, it will will help to start developing the theory more formally.

4.2 The basic framework

The theory that follows has two principal components, both of which were visible in the foregoing informal sketch. First, we will give a recursive definition of *satisfaction at a point (of evaluation)*. The recursive semantics will be fairly standard, aside from the treatment of epistemic modals and attitude verbs. Second, we will use this recursive semantics to formulate a particular *norm of assertion*, one formulated by supervaluating over complete extensions. This is the innovation that yields distinctive predictions. I call the resulting theory *lightweight expressivism* because our official theory is neutral on questions of truth and content, and so may be combined with either a contextualist, or a relativist, or a 'pure expressivist' account of those notions. We'll return to this point later in the essay (Section 4.5), but let us first outline the theory.

We assume a fixed but arbitrary domain of discourse D and a set of worlds W. We can give a more precise characterization of an agent's categorical standard of taste as follows:

Definition 1. An agent j's *categorical standard of taste* in world w, $\chi^{w,j}$, is a (possibly partial) function from D to $\{0, 1\}$, where:

(i) $\chi^{w,j}(o) = 1$ if j has tasted and liked o in w,

(ii) $\chi^{w,j}(o) = 0$ if j has tasted o in w and it is not the case that j liked o in w, and

(iii) $o \notin dom(\chi^{w,j})$ if j hasn't tasted o in w.

To state our theory, we need to adopt a few more definitions.

Definition 2. A *generator* σ is a (total) function that maps a pair of a world and an individual (w, j) to a standard of taste $\sigma^{w,j}$.[28]

Definition 3. A generator σ is *complete* iff for all (w, j), $\sigma^{w,j}$ is a total function; otherwise, it is *incomplete*.

[28] Note that $\sigma^{w,j}$ is the result of applying function σ to argument (w, j), i.e. $\sigma^{w,j} = \sigma((w, j))$.

We assume that χ is a generator in this sense. That is, χ is a function that maps a pair (w, j) to $\chi^{w,j}$, j's categorical standard of taste in w. Note that χ will be an incomplete generator, since not everyone has tasted everything. We also need the notion of a *complete extension* of χ:

Definition 4. A generator σ is a *complete extension of* χ, $\sigma \succ \chi$, iff

(1) σ is complete, and

(2) for all (w, j) and all o, if $o \in dom(\chi^{w,j})$, then $\sigma^{w,j}(o) = \chi^{w,j}(o)$.

So if σ is a complete extension of χ, then $\sigma^{w,j}$ agrees with $\chi^{w,j}$ on all the cases that $\chi^{w,j}$ decides, but then goes on and decides all the other cases as well. If σ is a complete extension of χ, I shall also say that $\sigma^{w,j}$ is complete extension of $\chi^{w,j}$.

We assume a first-order language whose vocabulary includes variables, individual constants, n-ary predicates (including a distinguished one-place taste predicate T), Boolean connectives, generalized quantifiers, an epistemic possibility modal, and a belief operator. A model will consist of our generator χ, our sets D and W, and an interpretation function I. I assigns an element of D to each individual constant, and assigns a function from W to subsets of D^n to all n-ary predicates other than the taste predicate T. Where t is a term (individual constant or variable), the denotation of t, t^g, is $g(t)$ if t is a variable, and $I(t)$ otherwise. If t is an individual constant, we write "t" in the metalanguage instead of "$I(t)$".

A *point* is an n-tuple (w, j, σ, g) consisting of a world w, an individual (a 'judge') j, a complete generator σ, and a variable assignment g. The atomic clauses of our definition of satisfaction at a point are as follows:

(S1) $[\![Pt_1, ..., t_n]\!]^{w,j,\sigma,g} = 1$ iff $(t_1^g, ..., t_n^g) \in I(P)(w)$, where P is any n-ary predicate other than T

(S2) $[\![Tt]\!]^{w,j,\sigma,g} = 1$ iff $\sigma^{w,j}(t^g) = 1$

The remaining clauses will be given below, but first I want to indicate how the theory accounts for the acquaintance inference in the simplest case, the case of atomic taste sentences.[29]

A *context* c is an n-tuple (w_c, s_c, j_c, g_c) consisting of a world w_c, a speaker s_c, a judge j_c, and a variable assignment g_c. A context c is *autocentric* iff $j_c = s_c$; otherwise it is *exocentric*. We can now formulate a general norm of assertion by supervaluating over the complete extensions of χ:

ASSERTION NORM

Sentence ϕ is *assertable at c*, $[\phi]^c = \mathcal{A}$, iff

(i) s_c believes $\langle\phi\rangle^c$ at t_c in w_c, and

[29] Statements (S1)–(S12) constitute the recursive definition of satisfaction at a point. The definition is not given all at once, but instead presented over the course of the remainder in order to facilitate discussion of the individual clauses.

(ii) for all $\sigma \succ \chi$, $[\![\phi]\!]^{w_c,j_c,\sigma,g_c} = 1$.

For the sake of simplicity, we will for the most part ignore the part of this norm that requires the speaker to believe what she asserts, in which case we may simply assume that, for any sentence ϕ and context c, $[\phi]^c = \mathcal{A}$ iff (ii) holds.

It follows from this account that if I haven't tasted a and I occupy an autocentric context, *a is delicious* will not be assertable for me. To see this, note that if I haven't tasted a, then if $\chi^{w,j}$ is my categorical standard of taste in w, $\chi^{w,j}$ will not be defined for a. So there will be some complete extension $\sigma^{w,j}$ of $\chi^{w,j}$ that maps a to 0. Thus, the present account predicts that atomic taste sentences come with an acquaintance requirement. More generally, we have:

Fact 1. $[Ta]^c = \mathcal{A}$ *iff* $\chi^{w_c,j_c}(a) = 1$.[30]

Recall that $\chi^{w_c,j_c}(a) = 1$ iff j_c has tasted and liked a in w_c Thus, the theory predicts that an assertion of *The crème caramel is delicious* in an autocentric context will express one's liking of the taste of the crème caramel, in the sense discussed earlier. For if one asserts *The crème caramel is delicious* in an autocentric context, one's audience will assume that one is attempting to comply with the Assertion Norm. And if one is complying with that norm, **Fact 1** ensures that one has tasted and liked the the crème caramel.

4.3 Boolean connectives

Our earlier discussion highlighted the fact that the acquaintance requirement interacts non-trivially with disjunction and quantification. In order to extend our theory to these expressions, it will first be useful to highlight two particular complete extensions of χ, and note two facts about them.

Definition 5. The *picky extension* σ_0 is defined as follows:

(1) $\sigma_0 \succ \chi$, and

(2) for all (w, j) and all $o \notin dom(\chi^{w,j}), \sigma_0^{w,j}(o) = 0$.

Definition 6. The *easy-to-please extension* σ_1 is defined as follows:

(1) $\sigma_1 \succ \chi$, and

(2) for all (w, j) and all $o \notin dom(\chi^{w,j}), \sigma_1^{w,j}(o) = 1$.

[30] *Proof.* For the left-to-right direction, we show the contrapositive. So suppose $\chi^{w_c,j_c}(a) \neq 1$. Then there are two cases: either $\chi^{w_c,j_c}(a) = 0$ or $a \notin dom(\chi^{w,j})$. In the first case, if $\sigma \succ \chi$, then $\sigma^{w_c,j_c}(a) = 0$ and so $\sigma^{w_c,j_c}(a) \neq 1$. Thus, $[\![Ta]\!]^{w_c,j_c,\sigma,g_c} \neq 1$. So not every $\sigma \succ \chi$ is such that $[\![Ta]\!]^{w_c,j_c,\sigma,g_c} = 1$. But then $[Ta]^c \neq \mathcal{A}$. In the second case, choose a complete extension σ of χ such that, for all $o \notin dom(\chi^{w,j})$, $\sigma^{w,j}(o) = 0$. Then again $\sigma^{w_c,j_c}(a) = 0$ and so $\sigma^{w_c,j_c}(a) \neq 1$, which again means that $[Ta]^c \neq \mathcal{A}$.

For the right-to-left direction, suppose $\chi^{w_c,j_c}(a) = 1$. Then for all $\sigma \succ \chi$, $\sigma^{w_c,j_c}(a) = 1$. Thus, for all $\sigma \succ \chi$, $[\![Ta]\!]^{w_c,j_c,\sigma,g_c} = 1$, and so $[Ta]^c = \mathcal{A}$. $\square$

So $\sigma_0^{w,j}$ maps everything not in the domain of $\chi^{w,j}$ to 0; $\sigma_0^{w,j}$ is picky in that it 'doesn't like' anything it hasn't tried. And $\sigma_1^{w,j}$ maps everything not in the domain of $\chi^{w,j}$ to 1; $\sigma_1^{w,j}$ is easy to please in that it 'likes' everything it hasn't tried. The main role these two complete extensions play in what follows is technical: proofs of various facts about the system below can usually be found by adverting to one or both of these extensions.[31] Two crucial facts about these complete extensions of χ:

Lemma 1. *Let w be a world, and let j and o be elements of D. Then:*

(1) $\chi^{w,j}(o) = 1$ *iff* $\sigma_0^{w,j}(o) = 1$

(2) $\chi^{w,j}(o) = 0$ *iff* $\sigma_1^{w,j}(o) = 0$[32]

We adopt the classical recursive clauses for the Boolean connectives:

(S3) $[\![\neg\phi]\!]^{w,j,\sigma,g} = 1$ iff $[\![\phi]\!]^{w,j,\sigma,g} = 0$

(S4) $[\![\phi \wedge \psi]\!]^{w,j,\sigma,g} = 1$ iff $[\![\phi]\!]^{w,j,\sigma,g} = [\![\phi]\!]^{w,j,\sigma,g} = 1$

(S5) $[\![\phi \vee \psi]\!]^{w,j,\sigma,g} = 1$ iff $[\![\phi]\!]^{w,j,\sigma,g} = 1$ or $[\![\psi]\!]^{w,j,\sigma,g} = 1$

When paired with our Assertion Norm, we predict our earlier observations concerning these connectives. For example, if you say, *The crème caramel is not delicious*, this will imply that you tasted and didn't like the crème caramel:

Fact 2. $[\neg Ta]^c = \mathcal{A}$ *iff* $\chi^{w_c,j_c}(a) = 0$.[33]

And if you say *The crème caramel is delicious and it's gluten-free*, this will imply that you tasted and liked the crème caramel:

Fact 3. $[Ta \wedge \phi]^c = \mathcal{A}$ *only if* $\chi^{w_c,j_c}(a) = 1$.

(The proof of **Fact 3** is left to the reader.) Note that this last fact helps to explain an oft-noted feature of the acquaintance requirement, which is that it is not easily cancellable:[34]

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[31] It is possible that we could restrict the set of complete extensions over which we supervaluate to just these two complete extensions of χ; see George (2008) for related discussion concerning presuppositions in the Strong Kleene setting.

[32] *Proof.* For both claims, the left-to-right direction simply follows from the fact that σ_0 and σ_1 are complete extensions of χ. For the right-to-left direction of (1), suppose $\chi^{w,j}(o) \neq 1$. Then either $o \notin dom(\chi^{w,j})$ or $\chi^{w,j}(o) = 0$. If $o \notin dom(\chi^{w,j})$, $\sigma_0(o) = 0$ given that σ_0 maps every $o' \notin dom(\chi^{w,j})$ to 0. If $\chi^{w,j}(o) = 0$, $\sigma_0(o) = 0$, simply because $\sigma_0 \succ \chi$. Either way, $\sigma_0(o) = 0$, and so $\sigma_0(o) \neq 1$. The argument for the right-to-left direction of (2) is similar. □

[33] *Proof.* For the left-to-right direction: Suppose $\chi^{w_c,j_c}(a) \neq 0$. Then by **Lemma 1.2**, $\sigma_1^{w_c,j_c}(a) \neq 0$, where σ_1 is the easy-to-please extension of χ. So $\sigma_1^{w_c,j_c}(a) = 1$, which means that $[\![Ta]\!]^{w_c,j_c,\sigma_1,g_c} = 1$. Given the clause for negation, this means that $[\![\neg Ta]\!]^{w_c,j_c,\sigma_1,g_c} = 0$. But then there is a $\sigma \succ \chi$ such that $[\![\neg Ta]\!]^{w_c,j_c,\sigma,g_c} \neq 1$, for σ_1 is such a σ. It follows that from our ASSERTION NORM that $[\neg Ta]^c \neq \mathcal{A}$.

For the right-to-left direction, suppose $\chi^{w_c,j_c}(a) = 0$. Then if σ is a complete extension of χ, $\sigma^{w_c,j_c}(a) = 0$. So $[\![Ta]\!]^{w_c,j_c,\sigma,g_c} = 0$, which means $[\![\neg Ta]\!]^{w_c,j_c,\sigma,g_c} = 1$. Since σ was an arbitrary complete extension of χ, this holds for them all, which means $[\neg Ta]^c = \mathcal{A}$. □

[34] (Klecha, 2014, 451).

(17) ? The crème caramel is delicious, but I haven't tried it.

The most interesting connective here is disjunction, since, as we saw, it posed problems for both the epistemic view and the presupposition view. Two points are important. First, the expressivist view predicts that if, in an autocentric context, you say, *Either the crème caramel is delicious or the pie is*, this will imply that either you tasted and liked the crème caramel or you tasted and liked the pie:

Fact 4. $[Ta \vee Tb]^c = \mathcal{A}$ *iff* $\chi^{w_c,j_c}(a) = 1$ *or* $\chi^{w_c,j_c}(b) = 1$.[35]

Note that this implies Cariani's observation—the disjunction implies that you tasted at least one of them—but it in fact implies something stronger: that you tasted *and liked* at least one of them. So if, for example, you tasted the pie and didn't like it, and you didn't taste the crème caramel but are disposed to like it, you will still not be in a position to assert the disjunction.

Second, we also have:

Fact 5. *For any context c,* $[Ta \vee \neg Ta]^c = \mathcal{A}$.[36]

This predicts Cariani's other observation about disjunction: that $(Ta \vee \neg Ta)$ is assertable even if one hasn't tasted a. Thus, the expressivist view avoids one of the problems facing the presupposition view.

4.4 Generalized quantifiers

Generalized quantifiers also seemed to pose various challenges for both the epistemic and the presupposition view. In contrast, the expressivist view yields several interesting fine-grained predictions simply by adopting wholly standard recursive clauses for the relevant quantifiers. Consider, for example, the following:

(S6) $[\![some_x(\phi)(\psi)]\!]^{w,j,\sigma,g} = 1$ iff
$\{o : [\![\phi]\!]^{w,j,\sigma,g[x/o]} = 1\} \cap \{o : [\![\psi]\!]^{w,j,\sigma,g[x/o]} = 1\} \neq \emptyset$[37]

[35] *Proof.* For the left-to-right direction: Suppose $[Ta \vee Tb]^c = 1$. Then for all $\sigma \succ \chi$, $[\![Ta \vee Tb]\!]^{w_c,j_c,\sigma,g_c} = 1$. So for all $\sigma \succ \chi$, either $[\![Ta]\!]^{w_c,j_c,\sigma,g_c} = 1$ or $[\![Tb]\!]^{w_c,j_c,\sigma,g_c} = 1$. So for all $\sigma \succ \chi$, either $\sigma^{w_c,j_c}(a) = 1$ or $\sigma^{w_c,j_c}(b) = 1$. It follows that either $\sigma_0^{w_c,j_c}(a) = 1$ or $\sigma_0^{w_c,j_c}(a) = 1$, where σ_0 is the picky extension of χ. So, given **Lemma 1.1**, it follows that either $\chi^{w_c,j_c}(a) = 1$ or $\chi^{w_c,j_c}(b) = 1$.

For the right-to-left direction: Suppose $\chi^{w_c,j_c}(a) = 1$ or $\chi^{w_c,j_c}(b) = 1$. Suppose first that $\chi^{w_c,j_c}(a) = 1$. Then we know that for all $\sigma \succ \chi$, $[\![Ta]\!]^{w_c,j_c,\sigma,g_c} = 1$ from which it follows that for all $\sigma \succ \chi$, $[\![Ta \vee Tb]\!]^{w_c,j_c,\sigma,g_c} = 1$. And this means that $[Ta \vee Tb]^c = \mathcal{A}$. The reasoning for the case where $\chi^{w_c,j_c}(b) = 1$ is similar. □

[36] *Proof.* We know that $[Ta \vee \neg Ta]^c = \mathcal{A}$ iff for all $\sigma \succ \chi$, $[\![Ta \vee \neg Ta]\!]^{w_c,j_c,\sigma,g_c} = 1$. So let σ be an arbitrary complete extension of χ. Note that:

$$[\![Ta \vee \neg Ta]\!]^{w_c,j_c,\sigma,g_c} = 1 \text{ iff } \sigma^{w_c,j_c}(a) = 1 \text{ or } \sigma^{w_c,j_c}(a) = 0.$$

And note that the right-hand side of this biconditional must hold because $a \in D$, and σ^{w_c,j_c} is a total function from D into $\{0, 1\}$. □

[37] For any variable assignment g, variable x, and object $o \in D$, $g[x/o]$ is the assignment h such that $h(x) = o$ and $h(y) = g(y)$ for all variables y distinct from x. All sets here are understood to be subsets of our domain D.

(S7) $[\![every_x(\phi)(\psi)]\!]^{w,j,\sigma,g} = 1$ iff
$\{o : [\![\phi]\!]^{w,j,\sigma,g[x/o]} = 1\} \subseteq \{o : [\![\psi]\!]^{w,j,\sigma,g[x/o]} = 1\}$

(S8) $[\![no_x(\phi)(\psi)]\!]^{w,j,\sigma,g} = 1$ iff
$\{o : [\![\phi]\!]^{w,j,\sigma,g[x/o]} = 1\} \cap \{o : [\![\psi]\!]^{w,j,\sigma,g[x/o]} = 1\} = \emptyset$

(S9) $[\![exactly\ two_x(\phi)(\psi)]\!]^{w,j,\sigma,g} = 1$ iff
$|\{o : [\![\phi]\!]^{w,j,\sigma,g[x/o]} = 1\} \cap \{o : [\![\psi]\!]^{w,j,\sigma,g[x/o]} = 1\}| = 2$

(S10) $[\![at\ most\ two_x\ (\phi, \psi)]\!]^{w,j,\sigma,g} = 1$ iff
$|\{o : [\![\phi]\!]^{w,j,\sigma,g[x/o]} = 1\} \cap \{o : [\![\psi]\!]^{w,j,\sigma,g[x/o]} = 1\}| \leq 2$

When combined with our Assertion Norm, this yields a number of results of interest. We can start with a general result that pertains to all generalized quantifiers. To state it, first note that for each generalized quantifier Q_x, there is a corresponding binary relation Q_R on subsets A, B of D such that:

$[\![Q_x\ (\phi, \psi)]\!]^{w,j,\sigma,g} = 1$ iff
$Q_R(\{o : [\![\phi]\!]^{w,j,\sigma,g[x/o]} = 1\}, \{o : [\![\psi]\!]^{w,j,\sigma,g[x/o]} = 1\})$

For example:

some$_R$:	$A \cap B \neq \emptyset$	*no*$_R$:	$A \cap B = \emptyset$
every$_R$:	$A \subseteq B$	*exactly two*$_R$:	$\|A \cap B\| = 2$

Then we have:

Fact 6. *For any generalized quantifier Q_x and corresponding binary relation Q_R on subsets of D:*

if $[Q_x(Fx, Tx)]^c = \mathcal{A}$, then $Q_R(I(F)(w_c), \{o : \chi^{w_c,j_c}(o) = 1\})$.[38]

Note that $I(F)(w_c)$ is the set of things that are F in w_c and $\{o : \chi^{w_c,j_c}(o) = 1\}$ is the set of things that j_c tasted and liked in w_c. So if you say *Q things on the dessert table are delicious*, this will imply that Q things on the dessert table are such that you tasted and liked them. For example, if you say, *Something on the dessert table is delicious*, this will imply that there is something on the dessert table that you tasted and liked. Note again that this is stronger than just: there is something on the dessert table that you tasted. It's not enough that you have tasted something on the table, didn't like it, but are disposed

[38] *Proof.* Suppose $[Q_x(Fx, Tx)]^c = \mathcal{A}$. So for all $\sigma \succ \chi$, $[\![Q_x(Fx, Tx)]\!]^{w_c,j_c,\sigma,g_c} = 1$. So for all $\sigma \succ \chi$, $Q_R(I(F)(w_c), \{o : \sigma^{w_c,j_c}(o) = 1\})$. So where σ_0 is the picky extension of χ, we have $Q_R(I(F)(w_c), \{o : \sigma_0^{w_c,j_c}(o) = 1\})$. And note that, given **Lemma 1.1**, we have the following equivalence:

$$\{o : \chi^{w_c,j_c}(o) = 1\} = \{o : \sigma_0^{w_c,j_c}(o) = 1\}.$$

Thus, $Q_R(I(F)(w_c), \{o : \chi^{w_c,j_c}(o) = 1\})$, which is what we needed to show. □

to like something else on the table that you didn't try. Similarly, if you say, *Exactly two things on the dessert table are delicious*, this implies that exactly two things on the table are such that you tasted and liked them.

Recall that both the epistemic view and the presupposition view encountered trouble with 'non-RUM' generalized quantifiers like *exactly two*. The epistemic view either failed to yield a prediction or (when supplemented by the Quantifier Principle) yielded the wrong result. The presupposition view faced a problem here as well, since the way the acquaintance requirement interacts with *exactly two* appears subtly different from the way standard presuppositions interact with that quantifer. The expressivist view arguably does better here.

Fact 7. *If* $[exactly\ two_x(Fx, Tx)]^c = \mathcal{A}$*, then* $I(F)(w_c) \subseteq dom(\chi^{w_c, j_c})$.[39]

So if you say, *Exactly two things on the dessert table are delicious*, this implies that you've tasted everything on the dessert table. Note that our earlier result was that if you say, *Exactly two things on the dessert table are delicious*, this implies that you've tasted *and liked* exactly two things on the table. Together, the two results imply that if you say, *Exactly two things on the dessert table are delicious*, this will imply that you tasted everything on the dessert table, but only liked two of them.

4.5 Truth and content

Our theory thus far consists of two things: (i) a recursive definition of satisfaction at a point, and (ii) the Assertion Norm. We still need to extend our recursive semantics to epistemic modals and attitude verbs, but it will help to first pause here and say something the notions of truth and content, i.e. about what it is for a sentence to be true at a context and about what the content of a sentence relative to a context is. Although our recursive semantics places some constraints on how these notions may be defined, it leaves many options open. In particular, it is neutral among the main competitors one finds in the

[39] *Proof.* Suppose $[\text{EXACTLY TWO}_x(Fx, Tx)]^c = \mathcal{A}$. So:

$(\star)$ for all $\sigma \succ \chi$: $|I(F)(w_c) \cap \{o : \sigma^{w_c, j_c}(o) = 1\}| = 2$.

And note that, by **Fact 6**, we also have:

$|I(F)(w_c) \cap \{o : \chi^{w_c, j_c}(o) = 1\}| = 2$.

So let o_1 and o_2 be distinct elements of D such that:

$I(F)(w_c) \cap \{o : \chi^{w_c, j_c}(o) = 1\} = \{o_1, o_2\}$.

Now suppose, for *reductio*, that there is an $o \in I(F)(w_c)$ such that $o \notin dom(\chi^{w_c, j_c})$. Let o_3 be such an o. Note that o_3 is distinct from both o_1 and o_2 since the latter are both in $dom(\chi^{w_c, j_c})$ while o_3 is not. Note that the easy-to-please extension σ_1 of χ will be such that $\sigma_1^{w_c, j_c}(o_1) = \sigma_1^{w_c, j_c}(o_2) = \sigma_1^{w_c, j_c}(o_3) = 1$. Thus:

$I(F)(w_c) \cap \{o : \sigma_1^{w_c, j_c}(o) = 1\} = \{o_1, o_2, o_3\}$.

But then:

$|I(F)(w_c) \cap \{o : \sigma_1^{w_c, j_c}(o) = 1\}| = 3$.

But since $\sigma_1 \succ \chi$, this contradicts $(\star)$.

literature on predicates of taste, such as contextualism, relativism, and 'pure expressivism.'

When it comes to defining truth at a context, contextualists about taste predicates often say things like this:

> A sentence of the form *o is delicious* is true at a context (w_c, j_c) iff $\underline{o \text{ is delicious to } j_c \text{ in } w_c}$.[40]

A relativist in the style of MacFarlane (2014), on the other hand, will say something like this:

> A sentence of the form *o is delicious* is true at a context of use c_1 and context of assessment c_2 iff $\underline{o \text{ is delicious according to } \tau_2 \text{ in } w_1}$, where τ_2 is the standard of taste of the judge of c_2 and where w_1 is the world of c_1.[41]

But one thing that tends to go under-theorized in this literature is how to understand the underlined metalanguage predicates, predicates like *delicious to j in w* or *delicious according to j's standard of taste in w*. In particular, what happens when we apply one of these predicates to an item o that individual j has not tasted in w? Could these predicates be true of o even if j has not tasted o in w?

That issue is rarely addressed explicitly, but the theories that are formulated using these metalanguage predicates appear to presuppose that such a predicate can be true or false of an item o even if the relevant agent has not tasted o in the relevant world. I say this because the semantic theories in question are typically presented as bivalent theories, so that for any sentence ϕ and point of evaluation e, ϕ is either true or false at e. But it is hard to see how these theories could be bivalent if for some objects o, the metalanguage predicate *delicious to j in w* is neither true nor false of o. For then wouldn't the object-language sentence *o is delicious* be neither true nor false at a point of evaluation at which j is the judge and w the world?

If we do accept that these metalanguage predicates can be true or false of an item o even if the relevant agent has not tasted o in the relevant world, then we should also say that they can be *true* of an item o even if the relevant agent has not tasted o in the relevant world. Otherwise, we would license speeches like this:

(18) The crème caramel is not delicious because I haven't tasted it yet.

But that is absurd: my not having tried something isn't sufficient grounds for saying that it isn't delicious. So it seems to be a tacit assumption of the literature that these metalanguage predicates can be true of an item o even if the relevant agent has not tasted o in the relevant world. We adopt this assumption here as well. But this assumption raises a question: how should we understand

[40] See, for example, Schaffer (2011).

[41] See, for example, (MacFarlane, 2014, 150-151).

what these predicates are expressing? What has to be true of me and an item o that I haven't tasted yet in order for o to be delicious to me, or delicious according to my standard of taste?

One natural (though not inevitable) answer to this question appeals to the notion of a *disposition*.[42] For example, we might say that what it is for o to be delicious to j (or according to j's standard of taste) in w is for j to be disposed in w to like the taste of o. For such an account allows that o might be delicious for j in w even if j has not tasted o in w, since one can be disposed to like the taste of something that one has not tasted. Thus, I propose to understand the contextualist's metalanguage predicate *o is delicious to j in w* as saying that j is disposed to like the taste of o in w, and we can understand the relativist's metalanguage predicate in a similar manner.

With that clarification in hand, we can formulate contextualism and relativism within the present theoretical setting by appealing to the notion of an agent's *hypothetical standard of taste*. In contrast to an agent's categorical standard of taste, an agent's hypothetical standard will be defined for all items in the domain, even items that the agent has yet to taste. I propose to define hypothetical standards as follows:

Definition 7. An agent j's *hypothetical standard of taste* in world w, $\delta^{w,j}$, is a total function from D to $\{0, 1\}$, where:

- $\delta^{w,j}(o) = 1$ if j is disposed to like the taste of o in w, and
- $\delta^{w,j}(o) = 0$ if j is not disposed to like the taste of o in w.

We may suppose that an agent's categorical standard of taste at a world is the restriction of her hypothetical standard to the set of things she's tasted. In other words, $\delta^{w,j}$ is a complete extension of $\chi^{w,j}$. We assume that δ is a generator that maps each (w, j) to $\delta^{w,j}$, j's hypothetical standard of taste in w.

Using this notion allows us to formulate a version of contextualism as follows:

> STANDARD CONTEXTUALISM
>
> The content of ϕ at c is $[\lambda w.[\![\phi]\!]^{w,j_c,\delta,g_c} = 1]$.
>
> A sentence ϕ is true at c iff the content of ϕ at c is true at w_c.

Note that the 'generator parameter' here has been set to the hypothetical generator δ in this definition. So on this approach, the content of *The crème caramel delicious* in an autocentric context is the proposition that the speaker is disposed to like the taste of the crème caramel. Thus, in asserting that sentence in an autocentric context, one's assertion will be true iff that proposition is true. Note that this means that, unlike on the presupposition view, if I assert that *The crème caramel delicious* in an autocentric context, my assertion may be true even if I haven't tasted (and so couldn't be said to like) the crème caramel—for one may be disposed to like something that one has not tried. Of course, in

[42] Egan (2010).

such a case, not all will be well with my assertion, for it will violate the Assertion Norm. The result will be a true assertion that I was not in a position to make. Note also that it is clear from this overall account that I would not be *asserting* that I like the crème caramel—I can't be asserting that, since my assertion might be true even if I haven't tasted (and so could not be said to like) the crème caramel.[43]

A relativist in the style of (MacFarlane, 2014, Ch. 7), on the other hand, might instead adopt the following account of truth and content:

RELATIVISM

The content of ϕ at c is $[\lambda(w, j).[\![\phi]\!]^{w,j,\delta,g_c} = 1]$.

A sentence ϕ is true as used at c_1 and as assessed from c_2 iff the content of ϕ at c is true at (w_{c_1}, j_{c_2}).

While the contextualist and relativist might agree on the conditions under which it is appropriate to assert a taste sentence, they will likely disagree on when it is appropriate to disagree with or retract such an assertion; see (MacFarlane, 2014, Ch. 7) for discussion.

Note that both the relativist and contextualist versions of our proposal would count as species of *hybrid expressivism*.[44] For it follows from our account of assertion that an assertion of *The crème caramel is delicious* in an autocentric context would, in addition to expressing one's liking of the crème caramel, express a certain *belief*. For the contextualist, it expresses the belief that one is disposed to like the crème caramel; the relativist's description of that belief would be more subtle. But on both accounts, that belief is an ordinary belief, one assessable for truth or falsity (though the relativist may allow its truth value to vary with the context of assessment).

But our approach doesn't require hybrid expressivism; it is also compatible with *pure expressivism*:

PURE EXPRESSIVISM

The content of ϕ at c is $[\lambda(w, j, \sigma) : [\![\phi]\!]^{w,j,\sigma,g_c} = 1]$.

If ϕ is not sensitive to the generator parameter, then ϕ is true at c iff the content of ϕ at c is true at (w_c, j_c, σ) (for any σ).

[43] An objectivist about taste could adopt the above definitions of truth and content with one modification. If objectivism is true, then there is a generator ω that is a constant function from centered worlds (w, j) to the objective standard of taste $\omega^{w,j}$. The objectivist account of truth and content results from taking the contextualist account of content and replacing δ with ω. An anonymous referee points out that the present approach is also compatible with *non-indexical contextualism*:

NON-INDEXICAL CONTEXTUALISM

The content of ϕ at c is $[\lambda(w, j).[\![\phi]\!]^{w,j,\delta,g_c} = 1]$.

A sentence ϕ is true at c iff the content of ϕ at c is true at (w_c, j_c).

[44] On hybrid expressivism in metaethics, see Barker (2000), Copp (2001), Finlay (2005), Schroeder (2009), and the references in the latter.

The pure expressivist allows that the notion of truth at a context is defined for the 'fact-stating' fragment of the language, but denies that it applies beyond this. Thus, the notion of truth at a context is simply not defined for sentences like the *The crème caramel is delicious.*[45] The pure expressivist would presumably also claim that the 'beliefs' expressed by simple taste sentences are not ones that can be assessed for truth or falsity, since it is not their job to represent the world as being a certain way. These last two claims distinguish the pure expressivist from the hybrid expressivist (at least in the present taxonomy).

These views—contextualism, relativism, and pure expressivism—differ in their accounts of disagreement, of retraction, and of what states of mind simple taste assertions express. How precisely to understand these views—relativism and pure expressivism, in particular—requires more elaboration, elaboration which will not be provided here.[46] The point I wish to emphasize is that all of these views are compatible with our lightweight expressivist account, which consists of the recursive definition of satisfaction at a point and the Assertion Norm.

4.6 Obviation

We noted earlier that epistemic modals and the attitude verb *believes* seem to obviate the acquaintance requirement. Although the presupposition view offered a simple account of this fact, the resulting view had the odd result that I could believe that the crème caramel is delicious to me without believing the content of the sentence *The crème caramel is delicious.* The presupposition view has this result because it combines two features: (i) it allows *believes* to obviate the acquaintance requirement, and (ii) it treats sentences of the form *a is delicious* as undefined in autocentric contexts in which the speaker hasn't tried a. Our lightweight expressivist view avoids this result because although it has the first of these features, it lacks the second.

We'll demonstrate how this works for the contextualist version of our view, but essentially the same point carries over to the other versions. As on the presupposition view, obviation is achieved when an operator shifts the generator parameter away from its default value. On the contextualist version of our approach, *believes* shifts the generator parameter σ to the hypothetical generator δ:

(S11) $[\![B_i\ \phi]\!]^{w,j,\sigma,g} = 1$ iff for all $w'' \in Dox_{w_c,s_c}$, $[\lambda w'.[\![\phi]\!]^{w',j,\delta,g} = 1](w'') = 1$.

Together with our account of assertability at a context, this yields the following result (where c is an autocentric context):

Fact 8. $[B_i\ Ta]^c = \mathcal{A}$ *iff for all* $w'' \in Dox_{w_c,s_c}$, $\delta^{w'',s_c}(a) = 1$.

(Proof of **Fact 8** is left to the reader.) Note that this means that *I believe that the crème caramel is delicious* is assertable in an autocentric context c even

[45] See (Yalcin, 2011, §10) for this way of characterizing pure expressivism

[46] See (MacFarlane, 2014, §7.3) on the distinction between relativism and pure expressivism.

if the speaker s_c hasn't tasted the crème caramel. For the belief ascription is assertable in an autocentric context just in case the speaker believes that they are disposed to like the taste of the crème caramel, which may be true even if the speaker hasn't tasted the crème caramel. So *believes* obviates the acquaintance requirement on this account.

To see how the expressivist view avoids the odd consequence of the presupposition view, suppose that *I believe that the crème caramel is delicious* is true in an autocentric context c. According to the expressivist view, that sentence is true in c iff:

$$\llbracket B_i\ Ta \rrbracket^{w_c,s_c,\delta,g_c} = 1 \text{ iff}$$
$$\text{for all } w'' \in Dox_{w_c,s_c},\ [\lambda w'.\llbracket Ta \rrbracket^{w',s_c,\delta,g_c} = 1](w'') = 1 \text{ iff}$$
$$\text{for all } w'' \in Dox_{w_c,s_c},\ [\lambda w'.\delta^{w',s_c}(a) = 1](w'') = 1$$

Thus, where a is the crème caramel, *I believe that the crème caramel is delicious* is true in the autocentric context c iff the speaker s_c believes the following proposition:

(a′) $[\lambda w'.\delta^{w',s_c}(a) = 1]$

This is the proposition that s_c is disposed to like the taste of the the crème caramel.

It follows from this that the speaker s_c also believes the proposition expressed by the sentence *The crème caramel is delicious* in c. To see this, note that on the contextualist version of our approach, the proposition expressed by *The crème caramel is delicious* at the autocentric context c is the following:

$$[\lambda w'.\llbracket Ta \rrbracket^{w',s_c,\delta,g_c} = 1]$$
$$= [\lambda w'.\delta^{w',s_c}(a) = 1]$$

which is just (a′) again. Thus, if *I believe that the crème caramel is delicious* is true in the autocentric context c, s_c believes proposition (a′) in c. And if s_c believes (a′) in c, then s_c believes the content expressed by *The crème caramel is delicious* in c, since this just is proposition (a′). Thus, on the expressivist approach, it is not possible for the sentence *I believe that the crème caramel is delicious* to be true in an autocentric context c unless the speaker believes what is said by the sentence *The crème caramel is delicious* in c. Expressivism thus avoids the odd consequence of the presupposition view.

One last remark about obviation. We noted earlier that epistemic modals and indicative conditionals also obviate the acquaintance inference. We can predict these results by positing lexical entries for these operators according to which they again shift the generator parameter σ to δ (in addition to shifting the world parameter, as is standard). For example, an entry for *might* suitable for the contextualist might look like this:

(S12) $\llbracket \textit{might}\ \phi \rrbracket^{w,j,\sigma,g} = 1$ iff for some $w' \in R(w)$, $\llbracket \phi \rrbracket^{w',j,\delta,g} = 1$, where $R(w)$ is the set of possible worlds compatible with what is known in w.

The reader may verify that this allows *The crème caramel might be delicious* to be true and assertable in an autocentric context even if the speaker hasn't tasted the crème caramel.[47]

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[47]For helpful comments and discussion, thanks to an audience at Institut Jean Nicod in Paris, and to Emmanuel Chemla, Chris Kennedy, Natasha Korotkova, Philippe Schlenker, and Malte Willer.

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