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 told 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 told you that the crème caramel was really delicious, you would ordinarily assume that I hadd 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

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contains cardamom, you need not reach any very specific conclusion about the basis for my assertion.[1]

The phenomenon here is not restricted to this one adjective. Consider other so-called 'predicates of personal taste'. If I tell you that the film *Monsieur Hulot's Holiday* is <u>hilarious</u>, 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 <u>fun</u>, 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 (Mothersill, 1984, 160).[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 (Ninan, 2014, 291). 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.

Ninan (2014) calls the inference hearers are apt to draw from an utterance of a simple taste sentence an *acquaintance inference*; I shall interchangeably speak 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* (Lasersohn, 2005, §6.1). Consider, for example, the following exchange:

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

    B: It's going well. <u>The seafood is delicious</u>, she loves the beaches, and she's staying in a nice hotel.
       ↛ *B has tasted the seafood in Sardinia*
       ↪ *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, it may give rise to some sort of acquaintance inference, since it does seem to suggest that *Sue* has tasted the seafood in Sardinia (Anand and Korotkova, 2018, 63).

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[1]This observation has appeared in both the aesthetics literature and in the literature on predicates of taste. See Mothersill (1984, 160), Pearson (2013, 117–118), and MacFarlane (2014, 3–4). The observation is related to one due to Kant (1790/2000, §33).

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

But there may be other sorts of cases, cases in which *no* acquaintance inference arises at all. Let us set this complication aside for the moment; we will return to it towards the end of the essay (Section 4.6).

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 (Franzén, 2018; Willer and Kennedy, 2020).[3] 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 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 is 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?[4]

While much has been said about these problems in the literature on 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 (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

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[3]See also Scruton (1974, Ch. 4). Clapp (2015) and Marques (2016) also advocate expressivist approaches to taste predicates, but they focus on issues surrounding *disagreement* rather than on the acquaintance requirement.

[4]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 (Geach, 1965). See, for example, Blackburn (1993), Gibbard (1990, 2008), Schroeder (2008), Willer (2017), Yalcin (2012, 2018), Pérez Carballo (2020), and the references therein.

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.[5]

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).

The epistemic view consists of two principal claims (Ninan, 2014). The first is the following 'norm of assertion' (Gazdar, 1979; Williamson, 1996):

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

Here s_c is the speaker of 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 (Grice, 1989). The second claim is a principle in the epistemology of taste (cf. Wollheim, 1980, 233):

> ACQUAINTANCE PRINCIPLE
>
> 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.[6]

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

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[5]The approach we advocate 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. 12 for a potential problem facing Willer and Kennedy's approach, a problem not faced by our approach.

[6]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.

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' of sorts.

The epistemic view correctly predicts a number of facts about how the acquaintance requirement projects out of various linguistic environments. Given a sentential operator O, a sentence ϕ, and a context c, let us say that a property F that ϕ has in c *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*[7]

Despite these attractions, the epistemic view also faces it share of problems. Muñoz (2019, 164–169) and Willer and Kennedy (2020, 28) argue on linguistic grounds that the Acquaintance Principle is false, 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 (though see Dinges and Zakkou 2021, 1193–1194). These are important objections, but I want to set them aside here in order to focus on some challenges

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[7]The claim that *It must have rained last night* does not imply 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).

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 Cariani (Forthcoming, §13.8). 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]: <u>Either the crème caramel is delicious or the panna cotta is</u>—I couldn't tell which was which.
        ↪ *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 (6b)? Well, from the Knowledge Norm, we can say that B knows that either the crème caramel is delicious or the panna cotta is delicious, i.e. $\mathcal{K}(Ta \lor Tb)$. 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 $\mathcal{K}(Ta)$ and $\mathcal{K}(\neg Ta)$. It simply says nothing about what is required to know a *disjunction* of atomic taste sentences.

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 the epistemic view could be supplemented by further principles. Let's say that a sentence ϕ is a *taste literal* iff it is either an atomic taste sentence or the negation thereof. Now suppose we were to add the following claim to the epistemic view:

DISJUNCTION PRINCIPLE

If ϕ and ψ are taste literals, then normally one knows $\phi \lor \psi$ only if one knows ϕ or one knows ψ.

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

If the Disjunction Principle were accepted, then the resulting epistemic view would predict that B's utterance of (6b) would imply 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*. 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 that, e.g., 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, an assertion of (7) (in an autocentric context) would be predicted to 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. $\mathcal{K}(some_x(Dx)(Tx))$. 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.). Something like this might suffice to handle the observations we've discussed so far. But the generalization embodied in the Quantifier Principle turns out to fail when we consider certain other quantifiers. Consider the determiner *no* for example:

(9) Nothing on the dessert table is delicious.

This seems to imply that the speaker has tasted everything on the dessert table. But even when supplemented by the Quantifier Principle, the epistemic view only tells us that nothing on the dessert 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* (see e.g. Winter, 2016, Ch. 4). 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 again compatible with the speaker not having tasted everything on the dessert table.

3   The presupposition view

Perhaps the epistemic view can be rescued by supplementing it with principles other than the ones canvassed above. But I myself don't know what those principles are, and so I shall 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.

 ↪ *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*. Advocates of this view include Pearson (2013) and Anand and Korotkova (2018). Both Pearson and Anand and Korotkova adopts 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.[8]

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:

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[8]For an introduction to the relevant notion of presupposition, see Beaver et al. (2021).

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

  ↪ *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.

  ↪ *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.

   (b) Sue might have stopped smoking.

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

  ↪ *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).

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

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

  Where defined, $[\![o \ is \ delicious]\!]^{w,j,K} = 1$ 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 undefined at such a context if the speaker hasn't tasted *o* before.[9] Given an appropriate lexical entry for negation, the same will be true of *o is not delicious*.

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 $w' \in \cap K$, $[\![\phi]\!]^{w',j,\mathcal{P}(W)} = 1$.

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:

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

As the reader can verify, *might* (*o is tasty*) will be defined at every point of evaluation; this means it will not carry an acquaintance requirement.[10]

While this is an elegant solution, I see three potential problems for the resulting view.

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 (let Ta translate *The crème caramel is delicious*). 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 (such as the Strong Kleene theory or the theory of Peters (1979)), if ϕ is undefined, then so is $\phi \vee \psi$.

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.

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[9]Suppose $[\![o\ is\ delicious]\!]^{w_c,j_c,K_c}$ is defined. Then K_c directly settles $[\lambda w'.\ o$ is tasty 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) is a point of evaluation and $p \in K_c$, $p(w_c) = 1$. So j_c has tasted o in w_c.

[10]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, 27) 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 $\cap K$.

(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, and only liked exactly two of the things on the table. But (15) does not necessarily give rise to a corresponding universal presupposition, as George (2008, 13–14) observes. 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.

This apparent difference between *delicious* and standard presupposition triggers poses a problem for any theory that hopes to treat the acquaintance requirement as a standard presupposition. For any theory that, for example, predicts that (15) has reading on which it means:

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

will likewise 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 tasty.

But this does not seem to be a possible interpretation of (10).

The third issue concerns what I regard as a conceptually awkward feature of the foregoing account. 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 (Kaplan, 1989). Ordinarily, this is thought to be what someone who uttered ϕ in c would thereby assert. And it would be what a sincere utterance of ϕ in c would add to the *common ground* of c (Stalnaker, 1978, 2002). 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 $[\![\phi]\!]^{w,j_c,K_c} = 1$.

To see the trouble, note that operators like epistemic modals and attitude verbs obviate the acquaintance inference. We've discussed epistemic modals, but several authors maintain that *believes*, for example, also obviates the acquaintance inference, as the acceptability of (15) suggests:[11]

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

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[11]See Stephenson (2007, §2.5.2), Muñoz (2019, 187), and Willer and Kennedy (2020, 29).

Here, B_i translates *I believe*, and $Dox_{w,i}$ is the set of worlds compatible with what I believe in w.

Now relative to my autocentric context, *I believe the crème caramel is delicious* attributes to me the belief in a certain proposition, namely:

$$[\lambda w'. \ a \text{ is delicious to } i \text{ in } w']$$

But this is *not* the proposition that *The crème caramel is delicious* expresses in c. Rather, at c that sentence expresses:

$$[\lambda w' : \ i \text{ has tasted } a \text{ in } w'. \ a \text{ is delicious to } i \text{ in } w']$$

This is a partial function from worlds to truth values. It is defined at a world w' iff I have tasted the crème caramel in w. Where defined, it maps w' to truth just in case the crème caramel is delicious to me.

The difference between these two propositions leads to an odd result. For suppose that I have not tasted the crème caramel (and know this), but that I believe that it is delicious (everyone loves it). This seems possible and the foregoing theory predicts that it is possible. Suppose I also know that I occupy an autocentric context and know that the proposition expressed by *The crème caramel is delicious* is undefined in my context. Then I presumably will not believe *that* proposition—how could I believe a proposition that I know lacks a truth value?

But now consider what we've just said: I believe that the crème caramel is delicious, but I do not believe the proposition expressed by *The crème caramel is delicious* in my autocentric context. If we take the phrase *what is said by ϕ* to pick out, relative to a context c, the content of ϕ at c, then the foregoing theory seems to commit me to:

(16) I believe the crème caramel is delicious, but I do not believe what is said by the sentence *The crème caramel is delicious*.

This strikes me as a very odd prediction of the theory. Perhaps there is some story one could tell about sentences, contents, and beliefs that would make this result palatable. But I, at any rate, would prefer to see if we can formulate a theory without this result.[12]

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.

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[12]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.

4 The expressivist view

Although I reject the epistemic and presupposition views 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 generated in part by a normative requirement on assertion. From the presupposition view, we take the idea that certain operators obviate the acquaintance requirement by manipulating a parameter in the points of evaluation.

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, 11) 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, 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 be 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 not liking all 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.

4.1 Basic framework

Our lightweight expressivist theory will have two principal components. 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 define a technical notion of *assertability at a context*. This notion will then be used to state a norm of assertion. The resulting theory will yield, among other things, the predictions just mentioned above. I call the 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 last point shortly (Section 4.2), but let us first outline the theory.

Let us say that, at a point e, a *is delicious* says that a is delicious according to the *standard of taste* determined by e. We assume that a standard of taste divides the relevant domain into two groups, things that count as tasty according to the standard in question and things that do not.[13] Thus, we model a standard of taste as a partial function from objects in a given domain to $\{0, 1\}$, where $f(o) = 1$ if o is tasty according to f, and $f(o) = 0$ if it is not the case that o is tasty according to f (so $f(o) = 0$ covers both the case where o is neither good nor bad according to f and the case where it is bad according to f).

An important question for us is whether an agent's standard of taste is defined for items that the agent has not (yet) tasted. But rather than answer this question, we can simply distinguish between two types of standards of taste, both of which can be modeled as functions from a background domain to $\{0, 1\}$. Assume we have a (non-empty) set of worlds W and a (non-empty) finite set of individuals D. Then we may distinguish between an agent's *hypothetical standard of taste* from their *categorical standard of taste* as follows:

Definition 1. 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 o in w, and

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

Definition 2. 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:

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

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

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

To state our recursive semantics, it will help to adopt a few more definitions. Let's say that a *centered world* is a pair of a world and an individual (we ignore times throughout for simplicity).

Definition 3. A *generator* σ is a (total) function that maps a centered world (w, j) to a standard of taste $\sigma^{w,j}$.

Definition 4. A generator σ is *complete* iff for all (w, j), $\sigma^{w,j}$ is a total function.

We assume δ and χ are generators in this sense; δ is a complete generator, but χ is not.

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[13]See MacFarlane (2014, 143–144) for more discussion of the notion of a standard of taste.

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. In addition to our sets W and D, we assume an interpretation function I that assigns an element of D to each individual constant, and 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" 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.[14]

Key to our account is a technical notion of *assertability at a context*. In order to define this, we first need the notion of a *complete extension* of χ:

Definition 5. 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 other cases as well. If σ is a complete extension of χ, I shall also say that $\sigma^{w,j}$ is complete extension of $\chi^{w,j}$.

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 now define the notion of *assertability at a context* by *supervaluating* over the complete extensions of χ:

ASSERTABILITY AT A CONTEXT

Sentence ϕ is *assertable at* c, $[\phi]^c = \mathcal{A}$, iff for all $\sigma \succ \chi$, $[\![\phi]\!]^{w_c, j_c, \sigma, g_c} = 1$.

To appreciate what this predicts about various sentences, it will be useful to consider two particular complete extensions of χ, and note some facts about them.

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[14]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 individual clauses.

Definition 6. The *picky generator* 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 7. The *easy-to-please generator* σ_1 is defined as follows:

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

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

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 generators 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 generators.[15] Two crucial facts about these generators:

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

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

(2) $\chi^{w,j}(o) = 0$ iff $\sigma_1(o) = 0$[16]

Now: we've defined a *technical* notion of assertability at a context. But we assume that it is normative constraint on assertion that one may assert ϕ in c only if ϕ is assertable (in the technical sense) in c. We can fold this requirement into a general 'norm of assertion' as follows:

ASSERTION NORM

For any context c, s_c may assert ϕ in c only if:

(1) s_c believes $\langle \phi \rangle^c$ in c, and

(2) $[\phi]^c = \mathcal{A}$.

Thus, if one is permitted to assert ϕ in c, ϕ must be assertable (in the technical sense) in c.

The resulting theory predicts that one may assert *The crème caramel delicious* in an autocentric context only if one has tasted and liked the crème caramel. To see this, suppose one may assert *The crème caramel delicious* in an autocentric context c. Then if a denotes the crème caramel, it follows from

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[15]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.

[16]*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. $\square$

the Assertion Norm that $[Ta]^c = \mathcal{A}$. Then, by the definition of assertability, it follows that, for all complete extensions σ of χ, $[\![Ta]\!]^{w_c,j_c,\sigma,g_c} = 1$. Given the semantics for the taste predicate T, this means that for all complete extensions σ of χ, $\sigma^{w_c,j_c}(a) = 1$. And that means that $\sigma_0^{w_c,j_c}(a) = 1$, where σ_0 is the picky extension of χ. By **Lemma 1**, that means that $\chi^{w_c,j_c}(a) = 1$, which means that j_c tasted and liked the crème caramel. Since c is autocentric, j_c is the speaker—the speaker tasted and liked the crème caramel.

The result holds in the opposite direction as well, which means we have:

Fact 1. $[Ta]^c = \mathcal{A}$ *iff* $\chi^{w_c,j_c}(a) = 1$.[17]

Thus, if one asserts *The crème caramel is delicious* in an autocentric context, one's assertion will typically implicate that one has tasted and liked the the crème caramel. For if one asserts that sentence, one's audience will assume that one is attempting to comply with the Assertion Norm, and if one is complying with that norm, it will follow that one has tasted and liked the the crème caramel.

4.2 Truth and content

We need to extend the recursive semantics to the rest of our language, but the basic architecture of our theory is in place. And so it is worth pausing to note that we have said nothing about what it is for a sentence to be *true* in a context, nor have we said anything about what the *content* of a sentence is relative to a context. 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 literature on predicates of taste, such as contextualism, relativism, and 'pure expressivism.' For example, a contextualist could adopt the preceding picture and then maintain the following:

CONTEXTUALISM

The content of ϕ at c is $\{w : [\![\phi]\!]^{w,j_c,\delta,g_c} = 1\}$.

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 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, one's assertion may be true even if one hasn'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. Note also that it is clear from this overall account that one is *expressing* one's liking of the crème

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[17]*Proof.* For the left-to-right direction: see above. 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 $[Ta]^c = \mathcal{A}$. $\square$

caramel and not *asserting* that one likes it—for one's assertion may be true even if one has not tasted (and so couldn't said to like) the crème caramel.[18]

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 $\{(w,j) : [\![\phi]\!]^{w,j,\delta,g_c} = 1\}$.

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*.[19] 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 $\{(w,j,\sigma) : [\![\phi]\!]^{w,j,\sigma,g_c} = 1\}$.

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).

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*.[20] 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).

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[18]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.

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

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

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.[21] 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, the definition of assertability, and the Assertion Norm.

In the remainder of the essay, we examine the consequence of our approach for Boolean connectives, generalized quantifiers, epistemic modals, and belief reports (Sections 4.3–4.5). We close with a brief discussion of exocentric uses and the defeasibility of the acquaintance inference (Section 4.6).

4.3 Boolean connectives

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 account of asertion, 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* $\chi^{w_c, j_c}(a) = 0$.

(Proofs of **Facts 2** and **3** are left to the reader.) 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* $\chi^{w_c, j_c}(a) = 1$.

Note that this last fact helps to explain an oft-noted feature of the acquaintance requirement, which is that it is not easily cancellable (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:

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

Fact 4. $[Ta \vee Tb]^c = \mathcal{A}$ *iff* $\chi^{w_c, j_c}(a) = 1$ *or* $\chi^{w_c, j_c}(b) = 1$.[22]

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, the disjunction will not be assertable at your context.

Second, we also have:

Fact 5. *For any context* c, $[Ta \vee \neg Ta]^c = \mathcal{A}$.[23]

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 another problem 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
$$\{o : [\![\phi]\!]^{w,j,\sigma,g[x/o]} = 1\} \cap \{o : [\![\psi]\!]^{w,j,\sigma,g[x/o]} = 1\} \neq \emptyset^{24}$$

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

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[22] *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**, it follows that either $\chi^{w_c,j_c}(a) = 1$ or $\chi^{w_c,j_c}(b) = 1$.

For the left-to-right 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 $\sigma \succ \chi, [\![Ta \vee Tb]\!]^{w_c,j_c,\sigma,g_c} = 1$. 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. $\square$

[23] *Proof.* $[Ta \vee \neg Ta]^c = \mathcal{A}$ 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 $\{0, 1\}$. $\square$

[24] For any variable assignment g, $g[x/o]$ is the assignment h such that $h(x) = o$ and is otherwise like g.

All sets here are understood to be subsets of our domain D.

(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

$|\{o : [\![\phi]\!]^{w,j,\sigma,g[x/o]} = 1\} \cap \{o : [\![\psi]\!]^{w,j,\sigma,g[x/o]} = 1\}| \leq 2$

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 $Q_R(I(F)(w_c), \{o : \chi^{w_c,j_c}(o) = 1\})$.[25]

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 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 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

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[25]*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 $Q_R(I(F)(w_c), \{o : \sigma_0^{w_c,j_c}(o) = 1\})$, since $\sigma_0 \succ \chi$. And note that, given **Lemma 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. $\square$

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* $I(F)(w_c) \subseteq dom(\chi^{w_c,j_c})$.[26]

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 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, it ended up hypothesizing that the proposition expressed by *The crème caramel is delicious* when it is embedded in one of these contexts is different from the proposition it expresses when it occurs unembedded. As we noted, this is a conceptually awkward feature of that view, since it suggests you can believe that the crème caramel is delicious without believing what is said by *The crème caramel is delicious* in your autocentric context. Our lightweight expressivist view avoids this problem.

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 approach, *believes* shifts the generator parameter σ to the hypothetical generator δ:

(S11) $[\![B_i\ \phi]\!]^{w,j,\sigma,g} = 1$ iff $Dox_{w,i} \subseteq \{w' : [\![\phi]\!]^{w',i,\delta,g} = 1\}$

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[26] *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, 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 ($\star$).

Together with our account of assertability at a context, this yields the following result:

Fact 8. $[B_i \; Ta]^c = \mathcal{A}$ *iff* $Dox_{w_c,i} \subseteq \{w' : \delta^{w',i}(a) = 1\}$.

(Proof of **Fact 8** is left to the reader.) Note that this condition does not require either the speaker s_c or the subject of the attitude verb i to have tasted the crème caramel. For on this view, *i believes that the crème caramel is delicious* says that i believes that she is disposed to like the crème caramel.

Although this 'obviation mechanism' is very similar to the one posited by the presupposition view, the more general theoretical setting in which it operates is different. And this difference makes a difference. For suppose again that I have not tasted the crème caramel, but believe that the crème caramel is delicious. On the present approach, I will thereby count as believing what is said by *The crème caramel is delicious* in my autocentric context. For if c is my autocentric context, then, whether or not *The crème caramel is delicious* is embedded under *I believe*, that sentence will express the same proposition in c, namely the proposition that I am disposed to like the crème caramel: $\{w' : \delta^{w',i}(a) = 1\}$, where i denotes me. Thus, unlike the presupposition view, the expressivist view does not allow (16) to be true in my context:

(16) I believe the crème caramel is delicious, but I do not believe what is said by the sentence *The crème caramel is delicious*.

Similar points apply for the relativist and pure expressivist versions of our proposal, though each requires a slightly different semantic clause for *believes*, corresponding to their differing views on content.

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) $[\![might \; \phi]\!]^{w,j,\sigma,g} = 1$ iff for some $w' \in R(w)$, $[\![\phi]\!]^{w',j,\delta,g} = 1$, 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.

4.6 Exocentricity and defeasibility

I mentioned at the outset of the essay that exocentric uses of taste predicates do not give rise to *speaker* acquaintance inferences, but may suggest that the judge—the person whose tastes and sensibilities are relevant for the interpretation of the taste predicate—has tasted the relevant item. This is predicted by the present approach; see **Fact 1** and consider the case where the judge of the context is distinct from the speaker.

I also briefly alluded to the fact that there may be cases in which *no* acquaintance inference—not even an exocentric one—is generated by an utterance of an atomic taste sentence. Pearson (2013, 118) discusses two examples (both attributed to others). First, suppose I learn about a distant culture in which an exotic insect is eaten. Those who eat it love it. I have not tried it, but I might still say *The insects they eat are sweet and delicious.* Second, one of Pearson's informants claims that I may say *John married an attractive woman* even if I never saw the woman John married. Pearson suggests the the fact the *attractive* occurs in attributive position here might be doing something to suppress the acquaintance inference.

Neither example is completely clear to me. For one thing, it is hard to rule out the possibility of exocentric readings, especially in the first example. But even if these particular examples do not establish the point, perhaps more compelling cases are waiting to be found. It may be that some assertions of atomic taste sentences simply do not give rise to any acquaintance inference. We can accommodate this possibility on the present approach by altering our definition of assertability slightly. Instead of assuming that we always—in all contexts—supervaluate over the categorical generator, we might instead say that we sometimes supervaluate over another generator, perhaps the hypothetical generator. We could implement this idea by saying that we superavaluate over a contextually supplied generator σ_c:

ASSERTABILITY AT A CONTEXT$'$

Sentence ϕ is *assertable at* c, $[\phi]^c = \mathcal{A}$, iff for all $\sigma \succ \sigma_c$, $[\![\phi]\!]^{w_c, j_c, \sigma, g_c} = 1$.

It may be that for most ordinary contexts c, σ_c is the categorical generator χ, which is why atomic taste sentences typically give rise to acquaintance inferences. But perhaps in the sorts of contexts Pearson's informants have in mind, σ_c is set to the hypothetical generator δ. Since δ is a complete generator, its only complete extension is itself, which means that Ta will be assertable at (w_c, j_c, δ, g_c) just in case j_c is disposed to like a in w_c. So the truth- and assertability-conditions collapse, and atomic taste sentences will not generate any acquaintance inference in such contexts. So this version of our proposal is compatible with the claim that the acquaintance inference is defeasible, and not just for reasons of exocentricity.

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