

Acquaintance and Evidence in Appearance Language

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Abstract. Assertions about appearances license inferences about the speaker’s perceptual experience. For instance, if I assert, *Tom looks like he’s cooking*, you will infer both that I am visually acquainted with Tom (what I call the INDIVIDUAL ACQUAINTANCE INFERENCE), and that I am visually acquainted with evidence that Tom is cooking (what I call the EVIDENTIAL ACQUAINTANCE INFERENCE). By contrast, if I assert, *It looks like Tom is cooking*, only the latter inference is licensed. I develop an account of the acquaintance inferences of appearance assertions building on two main previous lines of research: first, the copy raising literature, which has aimed to account for individual acquaintance inferences through the PERCEPTUAL SOURCE semantic role; second, the subjectivity literature, which has focused on the status of acquaintance inferences with predicates of personal taste, but hasn’t given much attention to the added complexities introduced by appearance language. I begin by developing what I take to be the most empirically-sound version of a perceptual source analysis. I then show how its insights can be maintained, while however taking anything about perception out of the truth conditions of appearance sentences. This, together with the assumption that appearance assertions express experiential attitudes, allows us to capture the acquaintance inferences of bare appearance assertions without making incorrect predictions about the behavior of appearance verbs in embedded environments.

Keywords: Acquaintance inference, subjective language, copy raising, evidentiality, perception, appearance verbs

1 Introduction: Two types of acquaintance inference

Many assertions can be appropriately made on a variety of grounds. If I count the students in my introductory logic class today and arrive at 30, I can appropriately assert, *30 students were in logic class today*. I can also appropriately make that assertion if I was not in class, but I heard from a reliable person who was there, counted, and reported the result to me as 30.

The same can’t clearly be said for more “subjective” assertions, for instance about matters of personal taste. If I taste the cake I just baked and like it, I can appropriately assert, *This cake is tasty*. It’s not clear that I can say this having only heard from my friend (even a friend who tends to like the same foods as I do) that they tried and liked it, without having tasted it myself. Similarly, if I try water-skiing and enjoy it, I can appropriately assert, *Water-skiing is fun*. But if I just hear from a friend (even a friend who tends to enjoy the same activities as I do) that water-skiing is fun but haven’t tried it myself, it would be odd for me to make that assertion.

These kinds of observations about matters of personal taste are old. They go back at least to Kant, who writes in the *Critique of Judgment*:

For even if someone lists all the ingredients of a dish, pointing out that I have always found each of them agreeable, and goes on to praise this food [...] I shall be deaf to all these reasons: I shall try the dish on *my* tongue and palate, and thereby [...] make my judgment. (Kant, 1790, §33)

More recently, the topic has been taken up by theorists in philosophy of language and linguistics interested in the semantics and pragmatics of the language of personal taste (e.g., Stephenson 2007, Pearson 2013, Ninan 2014). How, they ask, should an analysis of expressions such as *fun* or *tasty* account for the fact that simple assertions with them are infelicitous unless the speaker is acquainted with some relevant stimulus? The target of explanation here has been termed the ACQUAINTANCE INFERENCE: the inference, as illustrated in (1), from simple assertions with the expressions of interest to the claim that the speaker is acquainted with the relevant stimulus.

- (1) a. Water-skiing is fun.
 \rightsquigarrow *the speaker has tried water-skiing*
 b. The cake is tasty.
 \rightsquigarrow *the speaker has tasted the cake*

That such assertions give rise to the acquaintance inference can also be seen from the infelicity, in (2), of the claims when conjoined with the denial of the relevant acquaintance.¹

- (2) a. #Water-skiing is fun, but I haven't tried it.
 b. #The cake is tasty, but I haven't tasted it.

Assertions about matters of personal taste aren't the only ones to license the acquaintance inference. Assertions about APPEARANCES do so as well, as shown in (3)–(4).

- (3) a. Tom seems like he's cooking.
 \rightsquigarrow *the speaker has perceived Tom*

¹This is not without exception. For instance, so-called “exocentric” uses of predicates of personal taste (Laserson, 2005), as in (i), do not give rise to the inference that the speaker is acquainted with any stimulus.

- (i) The new dog food is tasty; of course I haven't tried it, but Fido gobbles it up!

The default, however, is that taste claims license this inference. And that is the phenomenon I am concerned with here.

- b. The soup smells like it contains ginger.
 \rightsquigarrow *the speaker has smelled the soup*
- (4)
- a. #Tom seems like he’s cooking, but I haven’t perceived him.
 - b. #The soup smells like it contains ginger, but I haven’t smelled it.

(For my purposes, appearance sentences are those with main verbs *seem*, *look*, *sound*, *taste*, *smell* and *feel*.)

The acquaintance inference with appearance language has been acknowledged in the literature on subjective language. Pearson (2013, 118), for instance, observes:

I can only say that John seemed tired yesterday if yesterday I had some contact with him that gave me this impression. If my information comes from Mary’s description of an encounter with him, I should say, *Apparently John seemed tired yesterday*.

And Ninan (2014, 291) notes that this extends to the verbs associated with the specific sensory modalities:

If I say that John’s house looks like a Victorian manse, you will normally take me to have seen his house. If I say that cashmere feels soft, it would be odd for me to then admit that I’d never actually felt the stuff.

On the whole, however, appearance language has received much less attention in the subjectivity literature compared with the language of personal taste. The acquaintance inference with appearance assertions deserves its own investigation, because it displays unique behavior with no analogue in the cases with predicates of personal taste.² This unique behavior goes entirely unexamined in the previous acquaintance literature. What is needed is an account of the acquaintance inference with appearance language that recognizes both its similarity with the acquaintance inference with other subjective language, as well as its novel features.

To get a taste of the novel acquaintance behavior of appearance language, observe that different syntactic forms of appearance sentences can differ in their acquaintance inferences, as illustrated in the “absent cook” case in (5), due to Asudeh and Toivonen (2012, 331) (the general observation goes back at least to Rogers 1972).

²It also has no analogue with aesthetic or moral language, which are other domains in which the acquaintance inference, or something related, seems to arise. On the aesthetic case, see e.g., Wollheim 1980, Mothersill 1984; on the moral, Hopkins 2007, McGrath 2009, 2011, Hills 2013, Willer and Kennedy 2020.

- (5) [Absent Cook] Ann and Ben walk into Tom’s kitchen. Tom isn’t there, but there are various things bubbling away on the stove and ingredients on the counter, apparently waiting to be used.
- a. **Ann:** It seems like Tom is cooking. (expletive subject)
- b. **#Ann:** Tom seems like he’s cooking. (copy raising)

In this paper, I will focus on the two forms of appearance sentences shown in (5): first, COPY RAISING constructions, as in (5b), which have a substantive DP matrix subject and an embedded *like*-clause that contains a coreferring “copy” pronoun; second, EXPLETIVE SUBJECT constructions, as in (5a), with the expletive or null *it* as matrix subject.

The key observation is that the copy raising construction in (5b) requires that the speaker be perceptually acquainted with Tom, whereas the expletive subject construction in (5a) does not. The expletive subject construction only requires the speaker to be acquainted with some evidence that Tom is cooking, for instance the scene in the kitchen. In a context in which Ann and Ben walk into Tom’s kitchen and see him doing something at the stove, either form of report is appropriate. But in the absent cook context, only the expletive subject one may be used.

The case of the absent cook shows the need for a distinction between two types of acquaintance inferences, once we expand our discussion from the language of personal taste to appearance language. The expletive subject sentence, repeated in (6), licenses only the inference that the speaker has perceived some evidence that Tom is cooking. Call this the EVIDENTIAL ACQUAINTANCE INFERENCE. By contrast, the copy raising sentence, repeated in (7), licenses not only that evidential acquaintance inference, but also the inference that the speaker has perceived Tom. Call this second inference the INDIVIDUAL ACQUAINTANCE INFERENCE.

- (6) It seems like Tom is cooking.
 \rightsquigarrow *speaker has perceived evidence that Tom is cooking* Evid. AI ✓
 $\not\rightsquigarrow$ *speaker has perceived Tom* Ind. AI ✗
- (7) Tom seems like he’s cooking.
 \rightsquigarrow *speaker has perceived evidence that Tom is cooking* Evid. AI ✓
 \rightsquigarrow *speaker has perceived Tom* Ind. AI ✓

To define the notions more generally, the evidential acquaintance inference is the inference that the speaker has perceived evidence for the embedded *like*-clause; and the individual acquaintance inference is the inference that the speaker has perceived some specific individual. While previous discussion of “the” acquaintance inference has typically focused on what I am here calling the individual acquaintance inference, both of these inferences merit the label of “acquaintance inferences”, as both are inferences to the speaker having some

kind of first-hand acquaintance on which they are basing their assertion. Note that the sentence in (8), which is not an appearance sentence, can be perfectly appropriately asserted on the basis of testimony, without the speaker having perceived either Tom or the evidence of his cooking.

- (8) Tom is cooking.
 \nrightarrow *speaker has perceived evidence that Tom is cooking* Evid. AI ✗
 \nrightarrow *speaker has perceived Tom* Ind. AI ✗

Within the linguistics literature on copy raising, the fact that the copy raising sentence in (7) licenses the individual acquaintance inference, while the expletive subject sentence in (6) does not, has been captured by assigning the semantic role of PERCEPTUAL SOURCE to the matrix subject in copy raising constructions (Asudeh and Toivonen, 2012, 2017, Landau, 2011, Doran, 2015, Rett and Hyams, 2014, Kim, 2014). By contrast, in expletive subject constructions, the perceptual source is left unspecified, leading to no requirement that any particular individual be perceived. The copy raising theorists are thus addressing linguistic behavior that is very closely related to the acquaintance behavior of interest in the subjectivity literature. Yet there has been little contact between the two groups. My aim in this paper is to develop an approach to the acquaintance inferences of appearance assertions that brings together and builds on insights from both. My scope will be constrained in that I'll focus just on the copy raising and expletive subject appearance constructions mentioned above, leaving extensions to other syntactic forms for future work.

The benefits of bringing together the copy raising and subjectivity literatures go in both directions. What the copy raising literature can teach the subjectivity literature is that there is more complexity in patterns of acquaintance inference than one might have thought just from observing the simplest cases with predicates of personal taste. (In fact, even the copy raising literature has not adequately absorbed the full extent of this complexity, as I'll discuss more below; the case of the absent cook turns out just to be the tip of the iceberg.) What the subjectivity literature can teach the copy raising literature is a more careful accounting of the precise status of the acquaintance inference as an inference, viz., how it ought to enter into our semantic and pragmatic theories in order to predict its projection patterns. This has been a main focus of discussion of the acquaintance inference with predicates of personal taste (Ninan, 2014, 2020, Muñoz, 2019, Anand and Korotkova, 2018, Franzén, 2018, Willer and Kennedy, 2020); but it has been much less central in the copy raising literature.

The plan for the remainder of this paper is as follows. In section 2, I will review how theorists from the copy raising literature have proposed to capture the individual acquaintance inference with copy raising constructions, via the introduction of the perceptual source semantic role. I will review the

complexities that have already been identified in that literature and show that yet more still remains underappreciated. I'll propose what I take to be the most promising form of a perceptual source analysis for appearance language, given the full empirical picture on hand. This is a semantic account that recognizes the variability in acquaintance behavior in a way so far left out of the subjectivity literature focused on predicates of personal taste. However, this account will in turn have things to learn from the subjectivity literature.

In section 3, I'll move on to a closer examination of the status of the acquaintance inferences — both individual and evidential — of appearance assertions. I'll show how the insights from the perceptual source approach can be combined with those of the subjectivity theorists, by offering an expressivist account of the acquaintance behavior of appearance assertions inspired by the one offered for predicates of personal taste by [Willer and Kennedy \(2020\)](#). In short, this involves modifying the semantics so that it no longer appeals to perceptual events with perceptual sources, but instead only to states in which individuals have various appearances. Nonetheless, assertions whose truth conditions do not require perception can still express experiential attitudes — attitudes whose sincere expression requires first-hand acquaintance. This is analogous to the relationship between factual assertions and belief: The truth conditions of a factual assertion do not require belief, and yet given that assertion expresses belief, a sincere assertion requires that the speaker have the corresponding belief. This expressivist account of the acquaintance inferences of appearance claims is intended largely as a proof of concept. I won't argue against all possible alternatives; and other promising options that have been proposed for predicates of personal taste may also be fruitfully extended to appearance language. Still, it is instructive to see how a theory that fully grapples with the discourse status of the acquaintance inference(s) can be combined with one that fully acknowledges the complexities of that acquaintance behavior at the sentence-by-sentence level.

The overall approach to the acquaintance inferences of appearance sentences is rather complex, but I'll show, in section 4, that there is more order to the picture than there may initially seem, once we recognize parallels between appearance language in English and evidential constructions more broadly.

2 The perceptual source in copy raising constructions

In this section, I review and build on recent approaches to the semantics of copy raising. These approaches share a commitment to capturing the individual acquaintance inference by means of a designated PERCEPTUAL SOURCE (PSOURCE) role in the semantics. As [Asudeh and Toivonen \(2012, 322\)](#) characterize it, the perceptual source is “what is perceived in a perceptual event or state.” Operating broadly within an event semantic framework ([Davidson,](#)

1967, Parsons, 1990, 1995), they take the unacceptability of the copy raising report in (9b), in the “absent cook” scenario (repeated here from (5)) to be grounds for taking the matrix subject, Tom, to be assigned the role of PSOURCE. And they take the acceptability of the expletive subject variant in (9a), in the same scenario, to show that no particular constituent in that report is assigned the PSOURCE role. Instead, they take the role to be existentially quantified over.

- (9) [Absent Cook] Ann and Ben walk into Tom’s kitchen. Tom isn’t there, but there are various things bubbling away on the stove and ingredients on the counter, apparently waiting to be used.
- a. **Ann:** It seems like Tom is cooking.
 - b. **#Ann:** Tom seems like he’s cooking.

This can be achieved with the semantic values for *seem* in (11) (where s is a variable ranging over eventualities (the union of events and states), x over individuals, p over propositions, and P over predicate denotations).³

- (10) a. $\llbracket \text{seem}_{\text{ES}} \rrbracket = \lambda p. \lambda s. \exists x [seem(s, x, p) \wedge \text{PSOURCE}(s) = x]$
 b. $\llbracket \text{seem}_{\text{CR}} \rrbracket = \lambda P. \lambda x. \lambda s [seem(s, x, P(x)) \wedge \text{PSOURCE}(s) = x]$

The perceptual source framework, in essence, works into the semantics of copy raising and expletive subject sentences the contrast in acquaintance inferences observed in the absent cook scenario. The copy raising sentence is analyzed so as to predict that the matrix subject must be perceived — yielding the individual acquaintance inference. The expletive subject sentence is analyzed so as not to predict that any particular individual must be perceived. Semantics for the other appearance verbs can be given analogously: Whereas “ $seem(s, x, p)$ ” can be glossed to mean that the eventuality s is one in which the appearance of x evidences that p , “ $look(s, x, p)$ ” would be glossed to mean that eventuality s is one in which the *visual* appearance of x more specifically evidences that p , and so on for the other sensory modalities.

Previous perceptual source theories divide into two broad camps: UNIFORM PSOURCE THEORIES according to which *all* copy raising subjects are perceptual sources, and NON-UNIFORM PSOURCE THEORIES according to which only some copy raising subjects are perceptual sources. I’ll review, in 2.1–2.2, how both of these views have been defended in the recent literature. In 2.3, I’ll argue that there is good reason to adopt a non-uniform theory, though its strongest support comes from different cases than those that earlier non-

³These clauses are loosely based on those in Asudeh and Toivonen 2012, though I depart from them, and follow Landau 2011, in taking the perceptual source to be a semantic argument of the verb *seem*. My clause for *seem* is closer to Asudeh and Toivonen’s clauses for the specific appearance verbs.

uniform theorists have relied on. By the end of this section we will thus arrive at what I take to be the best form of a perceptual source analysis for appearance sentences — one that appreciates the full empirical picture better than previous versions. This discussion also brings out the complexities in acquaintance inferences across different sentence forms — something underappreciated in the subjectivity literature that has focused largely on predicates of personal taste. Note that I will not at this stage be critiquing the perceptual source framework itself; that will come in section 3.

2.1 *Uniform perceptual source theories*

Those adopting uniform perceptual source theories endorse the following thesis:

[**PSOURCE Uniformity**] All copy raising sentences assign the role of perceptual source to the matrix subject.

PSOURCE Uniformity is a natural assumption, given the contrast observed in the absent cook case. The copy raising sentence in that case, in (9b), has a perceptual source subject; there doesn't seem to be any reason why this copy raising sentence should be unusual; and so perhaps *all* copy raising sentences have perceptual source subjects, employing the clause in (10b) (or the analogues for other appearance verbs). It's a tempting hypothesis that whether an appearance sentence assigns the PSOURCE role to a specific individual — and hence whether it licenses the individual acquaintance inference — simply correlates with its syntactic form. [Asudeh and Toivonen \(2012\)](#) build this hypothesis into their influential analysis, precisely on the basis of the absent cook and related evidence.

[Rett et al. \(2013\)](#) and [Rett and Hyams \(2014\)](#) also endorse the PSOURCE Uniformity thesis. [Rett and Hyams \(2014, §4.2\)](#) present supporting experimental work that found that, with the verbs *seem*, *look* and *sound*, assertions of copy raising sentences are highly unacceptable in “indirect contexts”, or contexts in which the referent of the matrix subject isn't perceived. [Chapman et al. \(2015\)](#) also found experimentally that whether the speaker directly perceives the copy raising subject is highly correlated with the acceptability of the assertion, whereas the acceptability of expletive subject assertions is not affected by perception. Both findings, however, result from combining data from sentences with a variety of different embedded clauses. As we'll see below, this method can mask important differences in the perceptual requirements across different copy raising assertions.

[Brook \(2016, 2018\)](#) is another theorist who accepts PSOURCE Uniformity, and in fact puts it to interesting explanatory work. She shows that diachronically, in Canadian English, appearance sentences with *like*-complements, as

in (11a–b), have been overtaking those with other forms of complements, including for example the non-finite complement form in (11c).

- (11) a. It seems like Tom is cooking.
 b. Tom seems like he’s cooking.
 c. Tom seems to be cooking.

She argues that one reason for this may be that the *like*-complement cases allow the speaker to indicate whether they have direct acquaintance with a specific perceptual source (Brook, 2016, chap. 7). The non-finite complement sentence in (11c) is compatible with either possibility. This is an intriguing proposal, and there is no question that many copy raising sentences license the individual acquaintance inference in a way that other forms of appearance sentences do not. However, as I’ll explain next, the data simply does not support the PSOURCE Uniformity thesis in its full generality.⁴

2.2 *Non-uniform perceptual source theories*

Other copy raising theorists reject the PSOURCE Uniformity thesis and instead endorse the following:

[**PSOURCE Non-Uniformity**] Some (but not all) copy raising sentences assign the role of perceptual source to the matrix subject.

Key cases that motivate Landau (2011) to adopt PSOURCE Non-Uniformity involve assertions of copy raising sentences made on the basis of a description or other type of representation, and in (12) and (13) (Landau 2011, 786, after Heycock 1994).

- (12) [**Exam Results**] A looks at the posted exam results and sees John’s name towards the bottom.
A: John seems/looks like he’s failed the exam.
 ↗ *A has perceived John* Individual AI ✗
- (13) [**Car Repair**] B has just described to A the bizarre noises that B’s car has been making.
A: Your car sounds like it needs tuning very badly.
 ↗ *A has heard B’s car* Individual AI ✗

I will call such uses REPRESENTATIONAL. These contrast with PERCEPTUAL uses (like in “absent cook”), where the copy raising assertion is made on the basis of non-representational perceptual evidence. In representational cases,

⁴It is an open question whether Brook’s style of explanation for the diachronic change towards *like*-complement forms can still be maintained, even if that thesis is rejected. I suspect the answer is yes, but I won’t pursue it further here.

the copy raising assertions are felicitous even though the speaker is not perceptually acquainted with the subject. Thus, Landau takes them to show that the PSOURCE interpretation is not necessary for all copy raising subjects.⁵

On this view, then, not all copy raising sentences can employ a clause like the one given for *seem* above in (10b), repeated here as (14a). Some instead employ one as in (14b), which yields results equivalent to the expletive subject version, though it is compositionally different.^{6,7}

- (14) a. $\llbracket \text{seem}_{\text{CR}} \rrbracket = \lambda P. \lambda x. \lambda s [\text{seem}(s, x, P(x)) \wedge \text{PSOURCE}(s) = x]$
 b. $\llbracket \text{seem}_{\text{CR}'} \rrbracket = \lambda P. \lambda x. \lambda s. \exists y [\text{seem}(s, y, P(x)) \wedge \text{PSOURCE}(s) = y]$

(Again, the relevant changes can be made for the different appearance verbs.)

While I will ultimately join Landau in rejecting PSOURCE Uniformity, I do not take representational cases to provide the best justification for doing so. There are two reasons for this. First, one might follow [Asudeh and Toivonen \(2017, sect. 3.2\)](#) in their claim that representational cases still involve PSOURCE subjects. They hold that the verb *sound* allows for a “roundabout” interpretation, whereby the copy raising construction *X sounds like...* is felicitous if the speaker has heard a *description* of X, even if they have not heard X itself. Thus, the copy raising assertion in (13) is acceptable because the speaker has heard a report about the engine. Though they don’t explicitly address the verbs *seem* and *look*, as in (12), we could extend the idea to that case, holding that copy raising is allowed because the speaker is acquainted with a representation of John. This strategy involves introducing some flexibility into our understanding of the perceptual source. An individual can be a perceptual source not only by being perceived directly, but also by being the content of a perceived representation. Moreover, this is not an “anything goes” fix. For instance, the fact that the representation must be *of the car* in (13) correctly predicts the unacceptability of the copy raising assertion in (15), in that same

⁵Note that despite a publication date earlier than that of [Asudeh and Toivonen 2012](#), Landau is partly responding to their paper, which had been circulating in draft form.

⁶[Potsdam and Runner \(2001\)](#) hold a related view, though not couched in terms of the perceptual source.

⁷I follow [Landau \(2011\)](#) in presenting this as an ambiguity or polysemy in the appearance verb (e.g., 798, 806). Ultimately, though, one would hope for an account that recognizes more of a connection between the two meanings. Note that some details of my presentation depart from Landau’s. I continue to follow [Asudeh and Toivonen](#) in including existential quantification over the PSOURCE in cases where it is unspecified, which Landau does not. I also provide semantic clauses that require embedded “copy” pronouns in all cases. This is for simplicity, as I will not discuss copy-less cases, like (i), in this paper.

- (i) Pavi seems like the baby didn’t sleep last night. ([Rudolph, 2019a](#))

Constraints on when a copy pronoun is needed are a key concern in [Landau 2009, 2011](#); see also [Asudeh and Toivonen 2012, sec. 2.2](#) and [Kim 2014](#).

car repair scenario (Asudeh and Toivonen, 2017, 57).

- (15) Context as in [Car Repair]
A: Your mechanic sounds like he needs to tune your car.

By contrast, the expletive subject variant is acceptable in that context.

A second reason not to rely on representational cases in rejecting PSOURCE Uniformity is that one might also hold that these cases *never* involve perceptual sources, but are instead some kind of inferential evidential, perhaps resulting from a “bleaching” of the perceptual meaning of appearance verbs (Asudeh and Toivonen, 2012, fn. 3).⁸ There are uses of copy raising sentences that don’t have to be based on perception at all. Consider (16), as uttered after the speaker has heard a practice run of the addressee’s talk.

- (16) Your argument looks like it still needs some work.

This assertion can be appropriately made without any visual evidence (no slides or handout needed, for instance). The verb *sound* could likewise be used without auditory evidence, for instance after reading the argument in a paper. The representational cases in (12) and (13) seem to be more similar to (16) than to the perceptual cases we began with. We might, then, account for representational cases by taking *look*, *sound* and *seem* to be ambiguous between a perceptual meaning and another, non-perceptual evidential one.⁹ (I’ll return to this idea in section 4.) On this line, representational uses of copy raising sentences are excluded from the purview of the perceptual source framework altogether. The interesting theses of PSOURCE Uniformity and PSOURCE Non-Uniformity should be restricted just to sentences with the perceptual versions of the verbs in question. A refined Uniformity thesis then holds that all *perceptual* copy raising sentences have PSOURCE subjects; while a refined Non-Uniformity thesis holds that only some *perceptual* copy raising sentences have PSOURCE subjects (and so there is polysemy even *within* perceptual cases). Landau’s representational cases are compatible with the refined version of PSOURCE Uniformity. That thesis is still in trouble, however, as I’ll show next based on a new category of counterexamples.

2.3 New evidence for a non-uniform theory

PSOURCE Uniformity is ultimately not defensible as a universal claim about all copy raising sentences, or even all perceptual uses of such sentences. It faces

⁸I thank an anonymous reviewer for pushing me to explore this option.

⁹Note that even the non-perceptual meaning may impose some constraint on the matrix subject, perhaps related to topicality, to explain the infelicity in (15) (Kim, 2014). One would also hope for an explanation of how these meanings relate; see, e.g., Gisborne and Holmes 2007.

a large additional category of counterexamples that has so far gone unappreciated in the copy raising literature.¹⁰ Consider, for instance, the following variation of Asudeh and Toivonen’s (2012) original “absent cook” case:

- (17) [Absent Experienced Cook] Ann and Ben walk into Tom’s kitchen. They don’t see Tom, but there are vegetables partially chopped on a cutting board, all perfectly even, and a roast cooling on the counter, delicately seasoned with fresh herbs.
- a. **Ann:** It seems like Tom is an experienced cook.
 - b. **Ann:** Tom seems like he’s an experienced cook.

In this case, both the expletive subject and copy raising assertions are acceptable, even though the speaker, Ann, does not perceive the copy raising subject, Tom.¹¹ Moreover, Ann’s assertion is clearly not based on a representation of Tom. It is based on visual evidence that suggests Tom to be an experienced cook. It’s just that this visual evidence does not include Tom’s own appearance, but rather the appearance of the food he has prepared. We thus see behavior that is at odds with PSOURCE Uniformity, even as refined to be a thesis solely about perceptual copy raising sentences.

The case of the “absent experienced cook” in (17) is not an isolated coun-

¹⁰There has been to my knowledge only one proposed counterexample to PSOURCE Uniformity in the previous literature that is perceptual. It is the case in (i), due to Doran (2015, 11).

- (i) A is a skilled musician with a highly trained ear. Through the thin walls of her apartment, she can hear her neighbor playing the guitar. The chords sound slightly off, like the guitar is missing a particular string.
A: The B string sounds like it’s missing.
 ↗ *A has heard the B string* Individual AI ✗

This kind of counterexample also occurs with *seem* and *look*, as in (ii) (Rudolph, 2019b).

- (ii) A glances around the classroom and doesn’t see Jim anywhere.
A: Jim seems/looks like he’s absent.
 ↗ *A has perceived Jim* Individual AI ✗

While these examples may help my case against PSOURCE Uniformity, I will not rely on them here. Intuitions about the acceptability of the copy raising assertions in these contexts are inconsistent (based on informal conversations; to my knowledge such cases have not been experimentally tested). And one might worry that some kind of pragmatic repair strategy is going on due to the impossibility of something absent being perceived.

¹¹I first discussed this case, and some of those to follow, in Rudolph 2019a. There, the judgments are backed up with experimental work showing that speakers judged the copy raising and expletive subject assertions equally acceptable in the “absent experienced cook” scenario, whereas they judged the copy raising assertion significantly less acceptable than the expletive subject one in the original “absent cook” scenario — thus confirming Asudeh and Toivonen’s data in their particular case, but casting doubt on its generalizability.

terexample. It is representative of a large class of cases that show PSOURCE Uniformity to be mistaken, at least when it comes to copy raising constructions with the verb *seem*. Here is another illustrative case:

- (18) [Office] Sam and Sally glance into Beth’s office while she’s out at a meeting. They notice color-coded folders stacked neatly on the desk and a to-do list written on the whiteboard, with estimated completion times specified for each task.
- a. **Sam:** It seems like Beth is well-organized.
 - b. **Sam:** Beth seems like she’s well-organized.

Again, we have a copy raising assertion that is just as acceptable as its expletive subject variant, despite the fact that the subject, Beth, is not perceived by the speaker.

Moreover, a variant on (18b), but with the verb *look* instead of *seem* is also acceptable in the same context, showing that *seem* is not alone in allowing for clear non-PSOURCE uses of copy raising sentences.¹² I thus conclude that, though his own evidence was inconclusive, Landau (2011) was correct in claiming the need for two semantic clauses — like those we saw above in (14) — for the appearance verbs *seem* and *look*, as they occur in copy raising constructions. That is, copy raising *seem* and *look* sentences can involve an individual argument interpreted as the perceptual source, or not. As a universal claim about all copy raising sentences, then, PSOURCE Uniformity is incorrect.¹³

What about the other appearance verbs? Interestingly, although motivation for PSOURCE Non-Uniformity has very often been based on cases with *sound*, we find that if we discount representational cases, there is actually no good reason to posit two semantic clauses for copy raising *sound*. No perceptual cases analogous to those with *seem* and *look* in (17)–(18) are to be found with the verb *sound*. While it’s impossible to definitively prove a negative like this (perhaps I just haven’t been creative enough in searching for such cases),

¹²However, *look* is noticeably less flexible than *seem* in this regard. While experimental results confirmed that the *look* variants of (18a) and (18b) are equally acceptable in the “office” context, results with other examples showed *look* to be less flexible than *seem* in admitting non-PSOURCE readings in copy raising sentences. For instance, when the *look* variant on the “absent experienced cook” was tested, speakers judged the copy raising sentence significantly less acceptable than the expletive subject one (Rudolph, 2019b).

¹³The rejection of PSOURCE Uniformity for *look* and *seem* still leaves us with a key open question: When can the non-PSOURCE versions of these verbs be used in copy raising sentences? It must be restricted, for otherwise it is mysterious why any copy raising sentences with *seem* or *look* are unacceptable without perception of the referent of the subject. Hearers could just interpret the sentence using the non-PSOURCE version whenever called for by the principle of charity. But this is evidently not possible, since if it were then we would expect the copy raising sentence in the case of the absent cook to be acceptable. And yet it clearly isn’t.

the contrast in (19) is highly suggestive.

- (19) [Cat-owner] Alice and Ed walk by their new neighbor, Claire’s window one afternoon. They know Claire is out at work. Alice hears what sounds like a faint meow coming from inside, followed by the sound of claws scratching against the floor.
- a. **Alice:** Claire seems like she owns a cat.
 $\not\rightarrow$ *Alice has perceived Claire* Individual AI ✗
- b. **#Alice:** Claire sounds like she owns a cat.
 \rightsquigarrow *Alice has heard Claire* Individual AI ✓

With the acceptability of (19a), we see yet another example of a copy raising *seem* sentence without a PSOURCE subject: The speaker, after all, has not perceived Claire. This example is notably different from those given earlier in that, in this case, the perceptual evidence that the speaker is relying on is fully *auditory*. But despite this, the corresponding copy raising *sound* sentence, in (19b), is starkly unacceptable. The expletive subject variant, *It sounds like Claire owns a cat*, would be fine, showing that the problem isn’t just insufficient evidence for the embedded claim. The copy raising sentence would be acceptable, by contrast, in a context where the speaker hears through the window Claire cooing in a way characteristic of cat-owners playing with their cats. In other words, the individual acquaintance inference is unavoidable with perceptual copy raising *sound* sentences — unlike what we saw with such sentences with *seem* and *look*. And so, contra Landau, there is no need to depart from a *restricted* thesis of PSOURCE Uniformity, applied to *sound*.

Likewise, restricted theses of PSOURCE Uniformity applied to the verbs *taste*, *smell* and *feel* are well-justified. For a representative example, consider (20).

- (20) Alice and Ed walk by their new neighbor, Claire’s window one afternoon. They know Claire is out at work. Through the crack in the window, Alice gets a clear whiff of cat smell.
- a. **Alice:** It smells like Claire owns a cat.

Rudolph (2019a) hypothesizes that the non-PSOURCE *seem* is more easily available when the embedded clause is about an individual-level property (roughly, a standing property) of the subject, as opposed to a stage-level property (roughly, a transient property) (Carlson, 1977, Kratzer, 1995). *Cooking* denotes a stage-level property, so the non-PSOURCE interpretation is unavailable in the absent cook case. But *an experienced cook* denotes an individual-level property, so the non-PSOURCE interpretation is available in the absent experienced cook case. One might wonder, having reached this point, whether a revised PSOURCE Uniformity thesis might be formulated: one that assigns to *seem* and *look* a single meaning in all copy raising sentences, but that only requires the subject to play some role weaker than the perceptual source. For discussion of this possibility and challenges it faces, see Rudolph 2019a, section 6.

- b. #Alice: Claire smells like she owns a cat.

There is no question that the copy raising *smell* sentence in (20b) is infelicitous (and this was also experimentally confirmed in Rudolph 2019b). And native speaker intuition equally clearly shows that copy raising sentences with *taste* and *feel* are infelicitous in contexts where the speaker does not perceive the subject. For these verbs, then, only a single copy raising semantic clause is needed: one that assigns the role of perceptual source to the matrix subject.

Let me summarize the non-uniform PSOURCE view that gains support from the evidence presented here. First, restricting ourselves to copy raising sentences with perceptual versions of the verbs in question:

- With *seem* and *look*, copy raising sentences do not uniformly assign the PSOURCE role to matrix subjects.
- With *sound*, *smell*, *taste* and *feel*, copy raising sentences uniformly have PSOURCE subjects.

Additionally:

- *Sound*, *seem* and *look* are ambiguous between perceptual and representational versions.

The theoretical picture here is rather complex. This is not a problem, however. For one, the empirical landscape simply does display a lot of complexity, and so it's not surprising that the best theoretical approach has complexity to match. But furthermore, as I'll return to in section 4, there is more systematicity to the picture than there might initially seem, once we recognize parallels between English appearance language and evidential constructions cross-linguistically.

3 The status of the acquaintance inferences

The linguistic behavior that manifests itself pragmatically as the individual acquaintance inference has been captured within the copy raising literature with a designated semantic role, the PERCEPTUAL SOURCE. As we saw above, Asudeh and Toivonen (2012, 322) characterize the perceptual source as “what is perceived in a perceptual event or state.” Rett and Hyams (2014, 178) follow, describing perceptual sources as “sources of the speaker’s perception.” Even those who reject PSOURCE Uniformity, like Landau (2011) and Doran (2015), still take the individual acquaintance inference, when it arises, to be explained by the assignment of the perceptual source role in the interpretations of the sentences in question. Perhaps not all copy raising subjects are perceptual sources, but when they are, this correlates with the individual acquaintance inference. It is an unquestioned assumption amongst these copy raising theorists that the perceptual source role lies behind the presence or absence of the individual acquaintance inference with copy raising assertions:

[Acquaintance-PSOURCE Link] Assertions of copy raising sen-

tences license the individual acquaintance inference if and only if the copy raising subject is interpreted as the perceptual source.

In section 2, I did not question this assumption, but rather developed what I take to be the best form of a non-uniform PSOURCE theory, under the assumption of the Acquaintance-PSOURCE Link. In fact, however, this assumption is misguided. In 3.1, I will explain why it is misguided — in short, because it gives perception the wrong status in relation to the truth-conditions of appearance sentences. Then, in 3.2, I will show how the Acquaintance-PSOURCE Link can be excised from our theorizing about appearance sentences, while still maintaining the core of the lessons from section 2. This will clear the ground for a better explanation of why appearance sentences license acquaintance inferences — not only individual acquaintance inferences, but also evidential ones — which I will give in 3.3, using the account of the acquaintance inference with predicates of personal taste due to Willer and Kennedy (2020) as my jumping off point.

3.1 *Critiquing the perceptual source*

In the previous copy raising literature, the perceptual source role is given a place in the semantic analysis of the copy raising sentences that license the individual acquaintance inference. This is worked out within an event semantic framework (Davidson, 1967, Parsons, 1990, 1995). Thus, to see the problem with the perceptual source as defined by Asudeh and Toivonen (2012) and those who follow them, it will be useful to contrast this role with a more familiar role within event semantics. The idea in the copy raising literature is that just as, in (21a), Mary plays the role of AGENT, so, in (21b), the set plays the role of PSOURCE.¹⁴ (For reasons that will emerge shortly, I switch to a new example of a copy raising sentence that mentions no perceiving subjects.)

- (21) a. Mary is running.
b. The set looks like it's falling apart.

Note that while the discussion in 2.3 showed that not all copy raising sentences license the individual acquaintance inference, (21b) does indeed have this inference, as shown in (22).

- (22) #The set looks like it's falling apart, but I haven't seen it.

Thus, according to the Acquaintance-PSOURCE Link, the subject in this sentence would be assigned the role of perceptual source.

¹⁴Asudeh and Toivonen (2012) draw a distinction between thematic roles, of which AGENT is an example, and semantic roles that are not thematic, of which the PSOURCE is an example. However, the difference is not material to my discussion here.

If we are just considering simple assertions of copy raising sentences, the parallel between the PSOURCE and other semantic roles seems unproblematic. And it seems straightforwardly to explain the infelicity of the copy raising assertion in contexts where the speaker does not perceive the subject. The sentence claims this individual to be the perceptual source, but it cannot be playing this role in the context, and so the assertion is false. For the same reason, an assertion of (21a) is false in a context where Mary isn't doing anything.

Upon closer inspection, however, we can see that it is a mistake to build anything about *perception* into the truth conditions of appearance sentences.¹⁵ The truth of the copy raising sentence in (21b) does not depend on the existence of a perceptual event in which the set is perceived, in the way that the truth of (21a) does depend on the existence of a running event with Mary as agent. This comes out through the contrast, in (23), between counterfactual statements about each situation.

- (23) a. #Even if Mary weren't doing anything, she would still have been running.
 b. Even if no one saw it, the set would still have looked like it was falling apart.

(Whatever some philosophers may end up saying, as far as natural language is concerned, if a tree falls with no one around, it does make a sound.)

Similarly, note that negating the claim about agenthood justifies rejecting (21a), while negating the perceptual claim does not justify rejecting (21b).

- (24) a. Mary isn't running — she isn't doing anything at all!
 b. #The set doesn't look like it's falling apart — No one's seen it!

The behavior with negation, granted, is compatible with the perceptual source claim being a *presupposition* of copy raising sentences. But we can quickly see that it can be no ordinary presupposition, given its behavior in other embedded environments.¹⁶

Consider embedding under *probably*, for instance. First, observe that,

¹⁵Within the copy raising literature, Rett and Hyams (2014) may be able to avoid this problem. Though they follow Asudeh and Toivonen in including the PSOURCE in their analysis, they take it to be part of the not-at-issue content of appearance assertions. However, they do not discuss how their analysis makes the right predictions about the kinds of embedding constructions I will discuss below. The proposal that I will develop in this section — which does away with the PSOURCE altogether — is, I believe, better equipped to make those predictions.

¹⁶For related discussion in connection with the acquaintance inference with predicates of personal taste, see Ninan 2014, Muñoz 2019. Note that these considerations do not rule out an analysis on which the acquaintance inference is a special kind of presupposition, which can be “obviated” by certain operators, as in, e.g., Anand and Korotkova 2018, Ninan 2020.

again, we see the (supposed) perceptual source role in (25b) behaving in a non-parallel fashion compared with the agent role in (25a).

- (25) a. Mary is probably running.
b. The set probably looks like it's falling apart.

(25a) says that it's probably the case that Mary is running, and this means that it's probably the case that there is an event with Mary as agent. However, (25b), in saying that it's probably the case that the set looks like it's falling apart, *does not* mean that there's probably a perceptual event in which the speaker (or indeed anyone) is seeing the set. It can be common knowledge that the set is being observed by no one, and yet (25b) can be perfectly felicitous. Indeed, it can even be common knowledge that the set will never be observed by anyone:

- (26) The set probably looks like it's falling apart, but we'll never find out because it's about to be razed without anyone inspecting it.

The perceptual source role, if it exists as defined, would have to behave very differently in embedded contexts from the agent role.

Furthermore, we can see that the perceptual source claim would have to behave very differently from ordinary presuppositions. Presuppositions project when embedded under *probably*, as illustrated in (27) (Karttunen, 1973). But the perceptual inference clearly does not project in (25b), as illustrated in (28).¹⁷

- (27) Mary probably stopped smoking.
↪ Mary smoked in the past.
(28) The set probably looks like it's falling apart.
↯ Someone has seen the set.

Nothing about perception is either entailed or presupposed by the copy raising sentence. Of course, something about perception is a condition on the felicitous assertion of the sentence, i.e., such assertions license acquaintance inferences. And how those inferences arise is something we will have to grapple with. Before moving to that in 3.3, however, we must consider whether we do need a role in the semantics assigned to (at least some) copy raising subjects, even if it's not the perceptual source role as previously defined.

¹⁷Alternatively, the presupposition in (27) may be locally accommodated, implying that Mary probably smoked in the past. But the analogue, that someone has probably seen the set, also fails to be implied in (28).

3.2 Replacing the perceptual source

The perceptual source, defined as something perceived in a perceptual event or state, has no place in the truth conditions of appearance sentences. Still, there is a difference between the meaning of at least some copy raising appearance sentences and their expletive subject variants. To see this, observe that while (29a) does not require the speaker to have perceived Tom (i.e., does not license the individual acquaintance inference), it still is not equivalent with (29b).

- (29) a. Tom probably looks like he's cooking.
b. It probably looks like Tom is cooking.

Neither of these sentences license acquaintance inferences, of either the individual or evidential varieties. That is, neither requires the speaker to have seen Tom, nor the evidence of his cooking. But still, Tom figures in the truth conditions of (29a), with the embedded copy raising construction, differently from in (29b), with the embedded expletive subject construction. (29a) means that it's probably the case that *Tom's own appearance* evidences his cooking. Perhaps it's probable that he is covered in splatters from the sauce bubbling on the stove. By contrast, (29b) means only that it's probable that *some appearances or other* evidence that Tom is cooking. Perhaps it's probable that the kitchen, even without Tom present, looks like the mess it tends to be in when Tom cooks. So, operating within an event semantics framework, Tom, in (29a), is still filling a role that goes only existentially quantified over in (29b). It's just that this role should not be defined as something perceived.

If we describe the distinctive role played by the copy raising subject, in a way that persists in embedded contexts, it is simply the following: The copy raising subject is *the individual whose appearance evidences the embedded claim*. An individual can have such an appearance, whether or not anyone perceives it. I will call this role the APPEARANCE THEME. The reason is that, of the traditional event semantics roles, THEME is the one that best fits the subject of appearance sentences (see e.g., [Parsons 1995](#), 1.1, 1.3). But the label here is not ultimately very important. The crucial thing is that we don't assign to copy raising subjects any role that builds in perception.

The present point requires us to revise the analysis we arrived at in section 2. There, we saw that not all copy raising sentences (especially those with the main verbs *seem* and *look*) licensed the individual acquaintance inference, and so, under the assumption of the Acquaintance-PSOURCE Link, not all had PSOURCE subjects. Now that we have rejected that link and replaced the PSOURCE in the way suggested here, this must be revised to the claim that not all copy raising sentences have APPEARANCE THEME (A-THEME) subjects.

The available meanings for *seem* and *look* in copy raising sentences are thus

as in (30a–b), with the expletive subject meaning as in (30c). (The natural modifications can be made for *look*.)

- (30) a. $\llbracket \text{seem}_{\text{CR}} \rrbracket = \lambda P. \lambda x. \lambda s [\text{seem}(s, x, P(x)) \wedge \text{A-THEME}(s) = x]$
 b. $\llbracket \text{seem}_{\text{CR}'} \rrbracket = \lambda P. \lambda x. \lambda s. \exists y [\text{seem}(s, y, P(x)) \wedge \text{A-THEME}(s) = y]$
 c. $\llbracket \text{seem}_{\text{ES}} \rrbracket = \lambda p. \lambda s. \exists x [\text{seem}(s, x, p) \wedge \text{A-THEME}(s) = x]$

Copy raising sentences that employ (30a) will have A-THEME subjects. This is the case, for instance, in (31) (repeated from (9b)).

- (31) Tom seems like he’s cooking.

This sentence is true, according to our revised semantics, just in case Tom’s own appearance evidences that he is cooking. In the perceptual source framework of section 2, this sentence’s truth depended on a perceptual event in which Tom was perceived. That is no longer the case. But still, the subject’s appearance is relevant to the truth of the sentence in a way that it need not be in all copy raising sentences.

Copy raising sentences that employ (30b) will *not* have A-THEME subjects. This is the case in (32) (repeated from (17b)).

- (32) Tom seems like he’s an experienced cook.

This sentence is true just in case some appearance or other evidences that Tom is an experienced cook. It doesn’t have to be Tom’s appearance, but can instead be the appearance of the food that he has prepared. Expletive subject sentences have truth conditions equivalent to the copy raising cases without A-THEME subjects.

It is crucial that, at this point, the difference between (31) and (32) is a difference in truth conditions, not in acquaintance inferences. The difference in acquaintance inferences between (31) and (32) — namely that the first but not the second licenses the individual acquaintance inference — will be *derived from* these truth conditions, in 3.3. The difference in acquaintance inferences does not simply fall out of the semantic clauses in (30).

Within the appearance theme framework, the verbs *sound*, *smell*, *taste* and *feel*, uniformly assign the A-THEME role to subjects in copy raising sentences — just as, within the perceptual source framework, copy raising sentences with these verbs uniformly had P-SOURCE subjects. This is captured with the clause in (33a). As with *seem* and *look*, expletive subject sentences with these verbs existentially quantify over the A-THEME role; this is provided for with the clause in (33b). (Obvious modifications can be made for the other verbs.)

- (33) a. $\llbracket \text{sound}_{\text{CR}} \rrbracket = \lambda P. \lambda x. \lambda s [\text{sound}(s, x, P(x)) \wedge \text{A-THEME}(s) = x]$
 b. $\llbracket \text{sound}_{\text{ES}} \rrbracket = \lambda p. \lambda s. \exists x [\text{sound}(s, x, p) \wedge \text{A-THEME}(s) = x]$

The result is that the copy raising *sound*-sentence in (34a), for example, is true just in case Claire’s own auditory appearance evidences that Claire owns a cat; while the expletive subject sentence in (34b) is true just in case some auditory appearance evidences that Claire owns a cat.

- (34) a. Claire sounds like she owns a cat.
b. It sounds like Claire owns a cat.

Again, the truth of neither of these sentences depends on those appearances being perceived by any observers.

We have now translated into the APPEARANCE THEME framework the key lessons that we reached regarding the PERCEPTUAL SOURCE in section 2, while, however, doing away with the problematic role that the latter framework gave to perception in the semantics. The revision is simple, and yet conceptually crucial for formulating an adequate account of the acquaintance inferences of appearance sentences. The perceptual requirements that arise in the form of acquaintance inferences are not to be explained through a stipulation in the definition of a semantic role. To do so, as we saw in 3.1, makes the wrong predictions about the projection behavior of acquaintance inferences. Instead, they should be explained through the interaction of truth conditions that don’t involve perception, together with other principles that explain why assertions of such sentences, in their simple, unembedded forms, by default license acquaintance inferences. Several explanations along these lines have been offered in the subjectivity literature, though their focus has been on predicates of personal taste. Assertions about personal taste don’t display the same complexities in acquaintance behavior that assertions about appearances do. I turn next to the task of showing how a promising account of the acquaintance inference with predicates of personal taste can be adapted to cover appearance language as well.

3.3 *Predicting the acquaintance inferences*

It may seem that, in replacing the PERCEPTUAL SOURCE with the APPEARANCE THEME, we’ve removed our ability to explain why appearance sentences license acquaintance inferences. After all, Tom’s appearance can evidence that he’s cooking, and I can plausibly learn that this is the case, whether or not I have actually perceived him. So the content of the appearance sentences no longer seems to predict either the individual acquaintance inference — that the speaker have perceived the subject — nor the evidential acquaintance inference — that the speaker have perceived evidence of the embedded clause. But while this might make it seem like we’ve taken a step backwards, we’ve in fact laid the groundwork for an account of those inferences that avoids the problematic implications, seen in 3.1, of the perceptual source approach. To

show this, I will sketch an expressivist account of the acquaintance inferences with appearance verbs inspired by the account of the acquaintance inference with predicates of personal taste due to [Willer and Kennedy \(2020\)](#).¹⁸ There are three key pieces of their account that are relevant for our purposes, which I will discuss in turn.

Expression of experiential attitudes. Assertions of different kinds express different types of attitudes that speakers may have. A plain assertion involving a factual predicate, like *contains gluten* in (35), expresses the speaker’s belief, or doxastic attitude, regarding the proposition in question.

(35) The cake contains gluten.

By contrast, according to Willer and Kennedy, plain assertions with predicates of personal taste express EXPERIENTIAL ATTITUDES. Experiential attitudes are mental states that can only be acquired by “undergoing some distinguished experiential episode” ([Willer and Kennedy, 2020, 3](#)). As [Franzén \(2020\)](#), who holds a related view, describes it, the experiential attitude expressed by (36), say, is the attitude of *finding* the cake tasty (see also [Franzén 2018, Charlow 2021](#)).

(36) The cake is tasty.

Just as factual assertions express beliefs without having the speaker’s beliefs as part of their truth conditions, so too assertions with PPTs express experiential attitudes, again without having the speaker’s experiences as part of their truth conditions.

But if plain assertions with PPTs express experiential attitudes, then very plausibly plain assertions with appearance verbs do so as well. All the distinctive features of experiential language associated with predicates of personal taste show up equally with appearance language ([Bylinina, 2017, Rudolph, 2020](#)). For instance, like predicates of personal taste and unlike factual predicates, appearance verbs can be modified by experiencer prepositional phrases (e.g., *to me*), as in (37).

(37) a. #The cake contains gluten to me.
b. The cake is tasty to me.

¹⁸I work with this theory in order to offer a concrete illustration of how a promising approach to the acquaintance inference with PPTs may be extended to appearance language. I do not rule out that other viable approaches developed for PPTs may also be adapted in this way. Further options worth considering include those in [Anand and Korotkova 2018, Muñoz 2019, Kennedy and Willer 2020, Ninan 2020](#). My first attempt at an expressivist account of the acquaintance inference, which shares some features with the view I present here, is in [Rudolph 2019c](#), chap. 4.

- c. The cake tastes to me like it contains cinnamon.

Appearance verbs can also felicitously embed under the subjective attitude verb *find*, as in (38) (Sæbø, 2009, Kennedy and Willer, 2016, Coppock, 2018).

- (38) a. #I find that this cake contains gluten.
- b. I find that this cake is tasty.
- c. I find that this cake tastes like it contains cinnamon.

Furthermore, appearance claims can be involved in cases of so-called “faultless disagreement”. The case in (39) will be familiar to anyone who was on the internet around 2015:

- (39) **A:** The dress looks like it’s blue and black.
- B:** No, it looks like it’s white and gold.

Plausibly, some speakers had disputes of this form, where each of their claims was appropriately grounded in their own experiential reactions; and yet there is the sense that there is a genuine disagreement present. Cases of faultless disagreement have been widely discussed with predicates of personal taste, like *tasty*, but do not arise in the same way with factual predicates. I won’t go into detail on faultless disagreement here, as it leads to many controversies (see, e.g., Kölbel 2004, Lasersohn 2005, 2016, Stojanovic 2007, Sundell 2011, MacFarlane 2014, Beddor 2019). I simply observe that the experiential differences that lead to plausible cases of faultless disagreement about appearances parallel the kinds of experiential differences that lead to the paradigmatic cases of faultless disagreement about matters of personal taste. This bolsters the idea that if personal taste assertions express experiential attitudes, so too do appearance assertions.

Sincerity conditions and experiential grounding. Assertions have sincerity conditions. Willer and Kennedy (2020) distinguish two general types of sincerity conditions associated with all assertions, which they call INTEGRITY and GROUNDING. Integrity requires a speaker to only assert what they are committed to (“don’t lie”, in short). Grounding requires a speaker to make their assertion on the appropriate grounds. In the case a factual assertion, like (35) (*The cake contains gluten*), this amounts to a requirement that the speaker’s doxastic state be able to distinguish worlds in which the cake contains gluten from those in which it does not. The speaker can get into such a doxastic state in many ways, e.g., by inspecting the cake or by learning about it through testimony. Thus, factual assertions can satisfy the grounding condition without the speaker being directly acquainted with any particular individual. If the speaker’s doxastic state does not make the relevant distinction, they fail to meet the grounding condition, and are, in effect, “bullshitting” in

something like the sense of Frankfurt (2005) (Willer and Kennedy, 2020, 15, fn. 10).

As we saw above, a plain assertion involving a PPT, like *tasty* in (36), expresses the speaker’s experiential attitude regarding the proposition in question. This assertion is appropriately grounded in the speaker’s mental state if and only if the speaker’s experiential state can distinguish worlds in which the cake is tasty from worlds in which it is not. In other words, it is a sincerity condition on taste assertions that the speaker’s experiences decide one way or another about the truth of the proposition. But this is just to say that the speaker has to have experienced the subject matter in question. Thus, on this approach, the (individual) acquaintance inference with PPTs is predicted because such first-hand experience is required for a sincerity condition on the assertion to be met.

Why do plain assertions with PPTs require experiential grounding, and are unacceptable with mere doxastic grounding? For Willer and Kennedy, predicates are associated with default grounding conditions, as part of dynamic lexical entries for the terms. Crucially, that a PPT assertion be experientially grounded is not part of its truth conditions on this approach, but rather its assertion conditions (just as a factual assertion being doxastically grounded is not part of *its* truth conditions). Willer and Kennedy leave open whether a predicate could have the same truth conditional meaning as, say, *tasty* but require doxastic grounding rather than experiential grounding (26). One might think that this should be ruled out: that there should be a close connection between truth conditional content and grounding conditions. According to Muñoz (2019), for example, experiential predicates like PPTs attribute dispositions to produce certain experiences. While this truth conditional content is consistent with no one actually having the relevant experience, this semantics nonetheless leads to a commitment to first-hand experience on the part of speakers asserting unembedded PPT sentences. The reason, roughly, is that with such assertions speakers commit to beliefs about taste properties, and such beliefs must be gained through experience on the assumption that a speaker’s doxastic commitments are a subset of their perceptual commitments (Muñoz, 2019, chap. 4). While there are interesting differences between the approaches from Muñoz and Willer and Kennedy, some story along these lines could help forge a link between the semantics of experiential predicates and the grounding conditions of plain assertions involving them. For our purposes, though, the key point is that if we extend the requirement of experiential grounding to appearance assertions, we can predict the complex acquaintance inferences that they license.

Given that appearance claims also express experiential attitudes, they too have the sincerity condition that they be grounded in the speaker’s experiential state — i.e., that the speaker’s experiential state be able to distinguish

situations in which the assertion is true from those in which it is false. This grounding condition, together with the semantics from 3.2, yields the prediction of the individual acquaintance inference with copy raising assertions that have APPEARANCE THEME matrix subjects. Recall (40) from the “absent cook” case (repeated from (9b), (31)).

(40) Tom seems like he’s cooking.

The truth conditional content of this assertion, given the clause in (30a), is that Tom’s appearance evidences that he is cooking. For such an assertion to be felicitous, it must be grounded in the speaker’s experiential state, i.e., the speaker’s experiences must be able to distinguish worlds where Tom’s appearance provides this evidence from worlds where it does not. But for the speaker’s experiences to do this, the speaker must have direct experience of Tom’s appearance. This thus predicts the individual acquaintance inference with such assertions. The assertion cannot be appropriately grounded unless the speaker is acquainted with the A-THEME, Tom.

Contrast this with (41) (repeated from (17b), (32)), from the “absent experienced cook” case.

(41) Tom seems like he’s an experienced cook.

The truth conditional content of this assertion, given the clause in (30b), is that some appearance evidences that Tom is an experienced cook. For recall that the A-THEME role is existentially quantified over in this case. The assertion must still be grounded in the speaker’s experiential state, but this condition can be met without the speaker being acquainted with Tom himself. All that is required is that the speaker’s experience pick out evidence of Tom’s cooking abilities. Seeing the product of his cooking can be sufficient. In this way, we predict no individual acquaintance inference with copy raising assertions whose matrix subjects are not A-THEMES.

The sincerity conditions on appearance assertions also allow us to predict their evidential acquaintance inferences. Although these inferences do not arise with PPT assertions, the present adaptation of Willer and Kennedy’s framework already contains the necessary tools. As we said in 3.2, the truth conditions of all appearance sentences involve there being some appearance-based evidence for the embedded *like*-clause. Let’s work with (40) for illustration. For this assertion to meet the experiential grounding requirement — that the speaker’s experiences distinguish worlds where Tom’s appearance evidences that he is cooking from worlds where it does not — it is necessary but not sufficient for the speaker to be experientially acquainted with Tom. The reason such acquaintance (required by the individual acquaintance inference) isn’t sufficient is that not just any acquaintance with Tom will be enough to

tell whether his appearance evidences that he's cooking. A fleeting glimpse of the top of his head through a window, for instance, would likely not be enough. This brings us close, but not all the way, to predicting the evidential acquaintance inference.

So far, we only predict that the speaker must be able to tell, in their experience, *whether* there is evidence for the embedded claim. But this could be satisfied if the speaker sees Tom and his appearance does *not* evidence that he is cooking. To see why the evidential acquaintance inference is present, though, we must simply remember that there is the further integrity condition on assertion: One must only assert what one believes to be true. Since the appearance sentence in (40) is true just in case Tom's appearance evidences his cooking, and the individual acquaintance inference requires that the speaker have visual acquaintance with Tom robust enough to tell whether Tom's appearance evidences his cooking, integrity kicks in to ensure that the assertion is only felicitous if the evidence goes in the direction of evidencing that he is cooking, rather than that he is not.¹⁹ Thus, the evidential acquaintance inference arises from a combination of the requirement that the speaker's experiential state be able to determine whether Tom's visual appearance gives evidence of a certain kind, together with the requirement that one only assert what one believes to be true.

Shifting the grounds. The final relevant piece of the expressivist account of acquaintance inferences is that the default grounding conditions associated with a given predicate can be overridden by certain operators, which shift the grounding conditions. The plain PPT assertion of (36) (*The cake is tasty*) expresses an experiential attitude whose sincerity requires the speaker to be acquainted with the cake. But (42), with the PPT embedded under an epistemic modal, no longer expresses the same kind of attitude.

(42) The cake must be tasty.

Various operators, including epistemic modals, shift the grounding conditions so that embedding constructions do not require experiential grounding. Our

¹⁹One might wonder whether the integrity and grounding conditions could be fulfilled in ways that pull in opposite directions. For instance, I can see Tom well enough to tell whether his appearance gives evidence that he's cooking (so grounding is satisfied), but that appearance gives evidence *against* him cooking; and yet for independent reasons, I'm committed to the truth of his appearance in fact evidencing that he's cooking (so integrity is also satisfied). This is a scenario where I have reason to think my perception of Tom is not picking up his "true" appearance. Because the sincerity conditions are both satisfied, we might expect that the assertion, *Tom looks like he's cooking*, should be felicitous; and yet, my intuition is that it is not. Because of this, we may need to strengthen the experiential grounding condition to require that the speaker's experiences positively decide in favor of the embedded claim. Thanks to Patrick Muñoz and Melissa Fusco for feedback on this issue.

extension of this approach predicts, equally, that an embedded appearance assertion like in (43) does not give rise to either type of acquaintance inference, while however still maintaining a special interpretive role for the matrix subject.

(43) Tom probably seems like he's cooking.

An assertion of (43) states that it's probably the case that Tom's appearance evidences that he is cooking. And the speaker can felicitously make this claim even if it is grounded in states other than their own experiences. By contrast, with the perceptual source analysis there was no way to separate out the requirement that it's Tom's own appearance that is relevant — which is still true when embedded — from the requirement that the speaker be perceptually acquainted with Tom — which is no longer true once embedded.

4 Appearance language and evidentiality

Many theorists have observed that appearance vocabulary in English conveys evidential information (Rett and Hyams, 2014, Chapman et al., 2015, Asudeh and Toivonen, 2017). Though appearance verbs do not count as grammatical evidentials in the sense of Aikhenvald (2004), they share notable features with grammatical evidentials. In this section, I will distinguish four such features, and explain how they connect with the approach to appearance language presented in the previous two sections.

First, as is often taken to be at least partly definitional of evidentials, appearance verbs impose restrictions on the TYPE OF EVIDENCE the speaker must have for their claim. A speaker must have some kind of perceptual evidence for a *seem* claim, visual evidence for a *look* claim, olfactory for *smell*, and so on. In the analysis presented above, this results from a combination of two factors. First, the truth conditions of appearance sentences are about the appearance-based evidence, of the modality associated with the main verb, for the embedded claim. Second, following the Willer and Kennedy-inspired expressivist approach to acquaintance inferences, a sincerity condition on uttering such sentences yields the requirement that the speaker have direct ex-

perience of this appearance-based evidence.²⁰

This brings us to a second commonality between grammatical evidentials and appearance verbs: Assertions with both are as a default SPEAKER-ORIENTED. That is, it is the speaker, and not any other agent, who must have the perceptual evidence in question. This, again, follows from the expressivist account of acquaintance inferences presented in 3.3.

The account also predicts a third commonality, which is that the evidential information about the speaker is NOT DIRECTLY CHALLENGEABLE in conversation, as shown in (44).

- (44) **A:** It looks like John is tired.
B: #No, you haven't seen that.

In this respect, appearance verbs in English and grammatical evidentials in other languages both differ from expressions like *I heard...* where the speaker having a certain kind of evidence is part of the at-issue content of the resulting sentence — only anchored to the speaker because of the pronoun, *I*, and targetable by a direct challenge (*No, you didn't hear that*).²¹ The expressivist approach to the acquaintance inferences predicts this not-at-issue status of the acquaintance information, given that sincerity conditions more generally are not directly challengeable.²²

²⁰When applied to the sentences in question, this requirement of experiential grounding looks very similar to a requirement of direct evidentiality — and some accounts of the acquaintance inference with subjective language have indeed tied it to direct evidentiality (Muñoz, 2019, Klempner, 2018, Anand and Korotkova, 2018). Willer and Kennedy (2020) resist taking all acquaintance-type requirements to stem from requirements of direct evidentiality, largely because of their aim to unify the acquaintance inference with predicates of personal taste with a similar phenomenon with moral language. I don't wish to take a stand on that issue here, and so do not claim to have ruled out direct evidentiality accounts of acquaintance inferences. Importantly, taking there to be direct evidentiality requirements on experiential assertions is fully compatible with the claim, in Asudeh and Toivonen 2017, that appearance constructions also convey *indirect* evidential information: namely, that the speaker only has indirect evidence for the *embedded claim*. One can have direct perceptual evidence for the copy raising claim, *Tom looks like he's cooking*, while having only indirect evidence for the embedded claim, *he is cooking*. Indeed, appearance constructions tend to be more appropriate in contexts where the evidence for the embedded claim is somewhat indirect or inferential; in this respect, appearance verbs are similar to epistemic *must* (Chapman et al., 2015, von Stechow and Gillies, 2010).

²¹Of course, it is odd to challenge a speaker about what they heard, given that there is often a presumption that they would be better informed about this than their interlocutor. But this kind of oddness does not call for any special linguistic explanation. (Though compare Korotkova 2016a.)

²²Various accounts of speaker-orientation and non-challengeability have been proposed in the evidential literature; see, e.g., Korotkova 2016b and references therein. The account in Faller 2002 that takes evidential requirements to be sincerity conditions on speech acts, bears some similarity with the account of the acquaintance inferences given in section 3.

Fourth, the patterns that we saw emerge with copy raising appearance sentences in section 2 fits with a cross-linguistic pattern of evidential constructions. There, we saw split behavior, with *seem* and *look* in one group — allowing for non-APPEARANCE THEME matrix subjects in copy raising constructions — and *taste*, *smell*, *feel* and (perceptual) *sound* in a second group — always having APPEARANCE THEME subjects in copy raising constructions. This led us to adopt non-uniform analyses for the first group, and uniform analyses for the second. While this may seem rather complex and disunified, that appearance verbs in these two groups should call for different styles of analysis is not surprising, from the point of view of evidentiality. Many languages have designated evidentials for claims based on perception in general, or specifically on visual perception; but none have designated evidentials for the specific senses of taste, smell, or touch (Aikhenvald, 2004, 64). The split that we found, between the behavior of the general perceptual *seem* and the visual *look*, on one side, and the rest of the specific sensory verbs on the other side, conforms to this pattern. While some languages have auditory evidential markers, many do not distinguish among the non-visual senses. Thus, while it might have been theoretically neater if we had parallel behavior across all appearance verbs, if any are to show distinct linguistic features, it is expected that these should be *seem* and *look*.

Furthermore, many languages have designated evidentials for claims based on hearsay or on inference. It’s plausible that these are the closest grammatical evidential parallels for representational *sound*, *look* and *seem*. Again, that representational uses of these verbs behave differently from their perceptual counterparts conforms with wider patterns in evidential constructions.

There is a great deal of variability in the perceptual requirements of appearance reports. But we find more order in the picture than there may initially seem to be, once we appreciate parallels between appearance constructions in English and evidentials more generally.

5 Conclusion

The acquaintance inferences of appearance sentences are variable in a way that has no analogue in the more widely-discussed cases with predicates of personal taste. Simple appearance assertions, as in (45)–(46), convey that the speaker has perceptual evidence for the embedded clause. That is, they license the EVIDENTIAL ACQUAINTANCE INFERENCE. Depending on the case, they may or may not also convey that the speaker is perceptually acquainted with a specific individual. That is, they may or may not license the INDIVIDUAL ACQUAINTANCE INFERENCE.

(45) Tom seems like he’s cooking.

- \rightsquigarrow *speaker has perceived evidence that Tom is cooking* Evid. AI ✓
 \rightsquigarrow *speaker has perceived Tom* Ind. AI ✓
 (46) Tom seems like he’s an experienced cook.
 \rightsquigarrow *speaker has perceived evidence Tom is experienced cook* Evid. AI ✓
 $\not\rightsquigarrow$ *speaker has perceived Tom* Ind. AI ✗

I have proposed an account of the semantics and pragmatics of appearance language that predicts that the evidential acquaintance inference arises with all assertions involving unembedded appearance verbs, while the individual acquaintance inference only arises in a more restricted group of cases. In doing so, I built on two main previous lines of research: first, the literature on copy raising, which has aimed to account for the individual acquaintance inference via the perceptual source semantic role; second, the subjectivity literature, which has explored in depth the discourse status of acquaintance inferences with predicates of personal taste, but hasn’t given much attention to appearance language.

In section 2, I developed the most empirically-sound version of a PSOURCE theory so far on offer. Then, in section 3, I showed how we could hold onto the insights from that approach, while however excising the perceptual source itself from our theory. The result is an analysis on which the truth conditions of appearance sentences are simply that some individual have an appearance with some evidential import — with some appearance sentences specifying which particular individual (the APPEARANCE THEME) has this appearance and some existentially quantifying over this role. This cleared the ground for an expressivist account of the acquaintance inferences of appearance sentences — an account capable of predicting these inferences without taking anything about perception to be part of the truth conditional content of such claims. The acquaintance inferences arise, in short, because appearance assertions express experiential attitudes. The sincerity of such assertions thus requires acquaintance analogously to how the sincerity of factual assertions requires belief. Finally, in section 4, I drew some comparisons between appearance language in English and evidential constructions more generally. These connections help us see that some of the complex patterns with English appearance verbs are not as unexpected as they may initially have seemed.

The present investigation sets up important questions for future work on the acquaintance inferences of appearance language, including: What determines which specific copy raising sentences (with *seem* and *look*) license the individual acquaintance inference? The examples discussed here suggest that specific embedded predicates have an effect, but what useful generalizations are supported here (Rudolph 2019a and fn. 13 above); and do other factors, like topic or focus, play a role too (Kim, 2014)? What is the relationship between perceptual and representational versions of *sound*, *seem* and *look*, and to

what extent are such uses of corresponding verbs available cross-linguistically? What is the relationship between appearance verbs and attitude verbs (e.g., Doran 2015, chap. 4), including *feel* as used in, e.g., *I feel like there's a problem here* (Srivastava, 2020), and the subjective attitude verb *find*?

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