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Marking imprecision or conveying surprise? *Like* between hedging
and mirativity.

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1 Introduction

The linguistic category of *mirativity* refers to a range of constructions used to express surprise or exceeded expectation (i.a. DeLancey 1997; Peterson 2010; Rett 2011; Rett and Murray 2013).¹

Across languages, this category is expressed through a variety of different forms, which can be divided into two main types (Rett 2012). *Independent* manifestations, on the one hand, realize mirativity through linguistic means that have the exclusive function of communicating surprise or unexpectedness. A salient example of this type is the exclamative construction in English, in which surprise is typically expressed either through a marked syntactic structure – e.g. a pseudocleft – or a dedicated intonational contour on its own (steady rise, abrupt fall (Cruttenden 1986) see also

¹The term *admirativity* has also been used, see Friedman (1986).

Bianchi et al. (2015) on Italian). *Dependent* manifestations, on the other hand, express mirativity through linguistic markers that are also responsible for encoding other, seemingly unrelated functions. Such cases are widely attested in the domain of evidentiality, where mirativity is often expressed through evidential markers that, in other contexts, mark an indirect source of evidence for an at-issue proposition *p*; the examples in (1) illustrate such an example from Turkish (Slobin and Aksu 1982; Peterson 2010). Similar cases have been documented across a number of unrelated languages, including Cheyenne, (Rett and Murray 2013), Albanian (Friedman 1986), Cuzco Quechua (Faller 2002), Ostyak (Nikolaeva 1999), Mapundungun (Aikhenvald 2004); and Tajik (Lazard 2009).

- (1) Kemal gel-**miş**.
 Kemal come-EVID/MIR
Kemal came. Turkish; Peterson (2010)

Reading 1: The speaker sees Kemal’s coat hanging in the closet and infers he has arrived.

Reading 2: The speaker sees Kemal arrive but was not expecting for him to attend.

In this paper, we show that the English particle *like* features a parallel polysemy between a hitherto undocumented mirative use (2b) and its better-known *hedging* use (2a), which expresses weakened commitment to the strict denotation of a linguistic expression.

- (2) a. They were *like* 10 dollars or something.² ≈approximately
 b. I just realized I’ve been eating chips that are 5 months old but they’re *like*...really good.³

²Twitter use @ChrissyCostanza, 8 July 2015.

³Twitter use @spiraledbass, 27 April 2017.

Our analysis aims to address the two following questions. First, how are the hedging and mirative effects of *like* conceptually related? Second, how does the connection between these two uses relate to other expressions that feature a similar polysemy between mirative and non-mirative effects, such as those as we observe in the domain of evidentials? After presenting several diagnostics that point to a genuine empirical difference between the hedging and the mirative functions of *like*, we propose that both uses widen the size of a contextually restricted set, admitting elements that were previously excluded. More specifically, hedging *like* expands the set of “similar enough” interpretations that we can apply to a linguistic expression in the context, including interpretations that we would normally consider to be too different from the target one; mirative *like* on the other hand expands the set of worlds that we are willing to consider as candidates for the actual world in the conversation. The result includes worlds that interlocutors have previously ruled out due to perceived outlandishness. We therefore suggest that the two uses are best treated as sharing a common semantic kernel, deriving hedging and mirativity as effects of the particular type of object to which *like* applies.

From a wider perspective, the proposed account contributes to the study of mirativity on two levels. From an empirical standpoint, it provides a detailed case study of how expressions of surprise can be parasitic on constructions that fall outside the domain of evidentiality, enriching the previously established cross-linguistic inventory of dependent instantiations of mirativity. From a theoretical standpoint, it points to a principled connection between surprise and hedging, affording a (partially) unified analysis of these two functions, and motivating the broader hypothesis that mirativity tends to latch on to constructions that are typically associated with a weakened commitment

on the part of the speaker.

The paper is structured as follows. In Section 2 we illustrate the two uses of *like*. In Section 3 we present their compositional similarities, as well as the diagnostics that help us distinguish between them. In Sections 4 and 5 we propose an analysis of the hedging and mirative functions respectively. In Section 6 we discuss the core semantic kernel shared by these two uses of *like*, framing their behavior within the broader picture of mirative phenomena. Section 7 concludes.

2 Two uses of *like*: a descriptive overview

2.1 *Like* as a hedging particle

The expression *like* in English presents a constellation of uses and functions, which have been categorized through a number of taxonomies (see in particular D’Arcy 2005 for extended discussion). In the present paper, we focus on the *discourse particle* use of *like*, whose pragmatic function has been informally described in terms of *hedging* (Dinkin and Maddeaux 2017; Dinkin 2016; Sharifian and Malcom 2003; Siegel 2002; Jucker and Smith 1998; Schourup 1985)

- (3) a. One of them was called *like* Prophecy or something like that. Jucker & Smith (1998):
186
- b. There’s a foreign boy in my group and he’s *like* European or something.⁴
- c. They had *like* scraped her. D’Arcy (2007: 171)

Intuitively, in all the examples above, *like* does not add to the propositional content of the utterance. Consistent with the typical behavior of discourse particles, it instead modulates an aspect of the re-

⁴Twitter use @catimacri, 19 September 2016.

lationship between the speaker and the proposition, in this case signaling that the speaker has some sort of *weakened* degree of commitment towards the assertion. With respect to its contribution, it has been suggested that *like* “is used to express a possible unspecified minor nonequivalence of what is said and what is meant” (Schourup 1985: 42); “indicates that the closeness of fit between the utterance and the thought it represents is looser than the hearer may otherwise have expected.” (Jucker and Smith 1998: 185); and signals “that the phrase it is attached to is detached slightly from commitment to a literal reading” (Dinkin 2017: 238). As suggested by such paraphrases, commitment weakening surfaces in different forms depending on the particular nature of the content.⁵

2.2 *Like* in mirative contexts

In addition to the contexts above, *like* is also commonly found in situations in which the speaker seems to find the embedded proposition surprising or unexpected, similar to what happens in mirative constructions (see Section 1). Examples of such scenarios, which to our knowledge have not yet been described in the literature on *like*, can be seen in the naturally occurring sentences reported below in (4). In such cases, *like* commonly occurs with other indicators of surprise (e.g. exclaimatives such as *Whoa!* in (4)); however, it is also found on its own, as in (5).⁶

⁵It has been observed that in assertions containing predicates denoting quantities or amounts, *like* has the effect of an approximating adverb, and is thus roughly translatable as *approximately* or *about* (D’Arcy 2005). However, there is no consensus that the contribution of *like* can be adequately captured by an adverb like *approximately*. See Siegel (2002) for further discussion.

⁶A reviewer expressed surprise at the fact that mirative *like* has not been described in the literature. While an exhaustive discussion of the sociolinguistic landscape of this construction is beyond the scope of this paper, two observations might be useful to explain this. First, the mirative use appears to be remarkably less frequent than other uses of *like*. A search on the Corpus of Contemporary American English (Davies 2010) returned 15497 hits for *like* enclosed between

- (4) a. Never thought I would say this, but Lil Wayne, is *like*... smart.⁷
- b. My friend I used to hang out with is *like* ... rich now. WHOA!⁸
- c. Whoa! I *like* ... totally won again!⁹
- (5) a. I just realized I've been eating chips that are 5 months but they're *like*... really good.¹⁰
- b. not to alarm anyone but his hand is *like*.. really really fast..¹¹
- c. Yeah it was some dude who was a janitor at a school. Hes *like*... a millionaire now.¹²

Intuitively, the use of *like* in the contexts above signals that the following facts are somewhat surprising or odd: that the rapper Lil Wayne is smart (4a); that the speaker's former friend is now rich (4b); that the speaker won again (4c). In (5a), the surprise stems from the fact that even five-month old chips taste good (5a), in (5b) that a guitar player's hand moves quickly while he's two commas, an environment in which the hedging variant is typically found (Siegel 2002); it only returns 255 results for *like* followed by ellipsis, a punctuation style that is distinctive of the mirative use (see Section 3). Second, this use does not seem to be available to all speakers of American English, as shown by the anecdotal observation that listeners seem to perceive mirative *like* as a stronger social marker than hedging *like*. Building on Dinkin and Maddeaux (2017) study, we asked three native speakers of American English (age 27, 29 and 34) to impressionistically assess the association between each use of *like* and low degrees of Articulateness, Confidence and Intelligence, three speaker's traits that the authors showed to be linked to the perception of *like*. Remarkably, the association was deemed much stronger when *like* was used in a mirative context, suggesting that this variant of *like* is more likely to be sociolinguistically stratified than the hedging one. We defer a systematic testing of these observations to future research.

⁷Twitter use @ shabangcohen, 12 May 2015.

⁸Twitter use @hogwartsgrand, 21 Jul 2015.

⁹<https://www.reddit.com/r/TheSimpsons/comments>

¹⁰Twitter use @spiraledbass, 27 April 2017.

¹¹Twitter use @seeingblind, 11 November 2017.

¹²Twitter use @EliShovan, 1 November 2017.

playing, or in (5c) that someone who was formerly a janitor is now a millionaire.¹³ Notably, the contribution of *like* closely resembles the one attributed to mirative evidentials in the literature as summarized by Rett and Murray (2013: 457), where these forms have been described as signalling a lack of “psychological preparation” on the part of the speaker (DeLancey 1997: 35); or as marking “a more or less spontaneous reaction to a new, salient, often surprising event” (Aikhenvald 2004: 197).

A crucial property of *like* moreover is that the surprise effect is crucially tied to the hearer, and not just to the speaker. In other words, for *like* to be felicitous it is not sufficient that the speaker finds the proposition surprising; it must be the case that the speaker believes that the hearer will also find *p* surprising. This is indicated by three observations. First, the use of *like* is not felicitous in a situation in which the speaker *is* indeed surprised, but already knows that the hearer does *not* find *p* surprising. For example, let us suppose that John has long been telling Sue that Bill has become rich, but that Sue for some reason has always refused to believe him. Let us now imagine that Bill pulls up in a fancy car in front of them, showing that John was right after all. While it is felicitous for Sue to convey her surprise via an exclamation, it would be odd for her to do so with *like*.

(6) **Context:** John has long been telling Sue that their old high school friend Bill has become rich. Sue never believed him, though. One day, Bills pulls up in a fancy car in front of both of them.

a. **Sue, to John:** ✓ (Wow,) Bill is rich now!

b. **Sue, to John:** # Bill is *like*. . . rich now.

¹³We note that the reduplicated use of the adverb signals emphasis of the predicate.

Furthermore, similarly to mirative constructions, this use of *like* is generally constrained by what Rett and Murray call “the recency restriction” in their work on evidentials: the explicit marking of surprise needs to be made within a reasonably short time after the content of the proposition has been comprehended by the interlocutors. The example below, modified from Rett and Murray (2013), shows that exclamative intonation and *like* both share this property. If surprise is expressed at a later stage, as in (7b), the use of a mirative marker is infelicitous.

- (7) a. **Context:** John and Sue see their old high school friend Bill pull up in a fancy car.
Sue, to John: (Wow,) Bill is rich now! / Bill is *like*... rich now.
John: Yes, how crazy!
- b. **Context:** John and Sue see their old high school friend Bill pull up in a fancy car.
Sue, to John: I thought that Bill lost all his money to a gambling debt.
John: I did too.
Sue: #(Wow,) Bill is rich now! / #Bill is *like*... rich now.

The example above might suggest that both *like* and exclamatives behave in the same fashion with respect to this restriction. Upon further examination however it can be noted that in the case of the *like*, the recency restriction essentially applies to the hearer rather than the speaker. This is shown by the observation that the particle can still be felicitous when the restriction is violated on the speaker’s part, as long as it still holds from the hearer’s perspective – for example, in a context in which the speaker has long known that *p* but has reason to believe that the information is nevertheless new and surprising for the interlocutor. This by contrast is not the case for exclamatives, which are degraded in this context.¹⁴

¹⁴Whether the recency restriction can be hearer-oriented with mirative evidentials is not discussed in the literature,

(8) **Context:** Sue sees her old high school friend Bill pull up in a fancy car. Three weeks later she runs into John, who just got back to town after spending a month abroad. Sue has reason to believe that John has never seen Bill in his fancy car.

a. **Sue, to John:** #(Wow,) Bill is rich now!

b. **Sue, to John:** ✓ Bill is *like*. . . rich now.

Finally, the hearer-oriented nature of *like* is shown by the fact that the particle is odd in contexts without any addressee, contrary to other markers of surprise:

(9) **Context:** Sue is walking alone on the street and sees her old high school friend Bill pull up in a fancy car. Taken aback by what she sees, she utters:

a. **Sue, alone:** ✓ (Wow,) Bill is rich now!

b. **Sue, alone:** # Bill is *like*. . . rich now.

As will be discussed in Section 4, the apparent hearer-orientedness of the surprise effects conveyed by *like* will motivate an analysis that treats the particle as operating over the Common Ground of the participants, i.e., a shared conversational space by the interlocutors. Before proceeding any further however, let us consider a possible objection to the claim that *like* operates as a mirative marker. The skeptical reader might point out that in the examples above, intonation seems at first glance to be doing a lot of the work to convey the speaker's surprise. *Like* might therefore simply be filling a prosodic pause linked to the speaker's unpreparedness to learn the content of the proposition, without providing any independent semantic or pragmatic contribution. We argue against this and is thus not an available data point at this time.

view on the grounds of two pieces of evidence. First, the prosodic contour of the examples with *like* is distinct from the contour of a typical exclamative declaratives; we discuss the prosodic behavior of *like* in more detail in Section 3.2. Second, while simply eliminating *like* from the same examples does indeed convey a mild sense of surprise, it does not achieve the same effect of bewilderment that the inclusion of *like* does:

- (10) a. Never thought I would say this, but Lil Wayne, is . . . smart.
b. I just realized I've been eating chips that are 5 months but they're . . . really good.

The fact that *like* occurs in these contexts is puzzling. Contrary to the cases discussed in the previous section, none of the contexts above seem to suggest that the speaker is less than fully committed to the assertion. More specifically, the attested co-presence of other mirative markers – e.g. exclamative intonation in (4b), or markers of full speaker commitment such as *totally* in (4c) – indicate at least impressionistically that the speaker *does* in fact thoroughly endorse the assertion. This raises the issue as to whether (and how) the use of *like* in (10) relates to the hedging uses presented in the previous section. Before addressing this issue, we first offer and discuss a series of diagnostics that illuminate the different pragmatic and distributional properties of the hedging and mirative uses.

3 Diagnosing hedging and mirative uses

3.1 Hedging and mirative uses: both are non-at issue

While they appear to contribute different effects, both mirative and hedging *like* share two important properties. First, neither of them is part of the at-issue content of the utterance, i.e., neither con-

tributes to the proposition that represents the “main point” of what the interlocutors are addressing in the discourse (Tonhauser et al. 2013). This property of *like* is revealed by two diagnostics. First, both hedging and mirative *like* fail to interact with logical operators such as negation or modals, similarly to what has been observed for presuppositions and conventional implicatures (Potts 2005 among others). This property is shown in the examples below: while *like* can occur to the right of negation (11) or a modal (12) in surface linear order, its contribution always “escapes” the scope of these modifiers, suggesting that the particle is encoded on a different level from the rest of the proposition.¹⁵

- (11) a. Mary’s shoes didn’t cost, *like*, twenty dollars.

Intended: # It is not the case that the speaker is hedging the claim that M’s shoes cost 20 dollars.

Intended: ✓ It is not the case that M’s shoes cost twenty dollars, but the speaker is hedging this claim.

- b. My friend I used to hang out with isn’t *like* ... rich anymore.

Intended: # It is not the case that the speaker is surprised that the friend they used to hang out with is no longer rich.

Intended: ✓ It is not the case that the friend the speaker used to hang out with is rich, and the speaker is surprised.

- (12) a. Mary’s shoes might cost, *like*, twenty dollars.

Intended: # It might be the case that the speaker is hedging the claim that M’s shoes cost 20 dollars.

¹⁵This is true whether the constituent following *like* is a nominal or propositional phrase.

Intended: ✓ It might be the case that Mary's shoes cost 20 dollars, but the speaker is hedging this claim.

- b. My friend I used to hang out with might be *like* . . . rich now.

Intended: # It might be surprising that the friend the speaker used to hang out with is rich.

Intended: ✓ It might be the case that the friend the speaker used to hang out with is rich, and this possibility is surprising.

Second, *like* cannot be directly agreed or disagreed with by the interlocutor with responses that deny (or affirm) the truth of the proposition. Instead, *like* can only be challenged with the use of constructions that call into question the more general felicity conditions of the utterance, such as the widely discussed *Hey, wait a minute!* response (henceforth, HWAM, see Shanon 1976):

- (13) a. A: Mary's shoes cost *like* twenty dollars.

B: # No, that's false! They cost exactly twenty. Why do you sound so tentative?

B: ✓ Hey, wait a minute. They cost exactly twenty. Why do you sound so tentative?

- b. A: My friend I used to hang out with might be *like* . . . rich now.

B: # No, that's false! This is very plausible.

B: ✓ Hey, wait a minute. This is very plausible. Why do you suggest this is surprising?

Having ascertained that both hedging and mirative *like* are not part of the at-issue content, we now move on to show that these two uses behave differently according to a variety of criteria.

3.2 Teasing apart hedging and mirative uses

The first set of diagnostics concern the prosodic properties of *like*. On the one hand, hedging *like* does not present a specific intonational profile. Siegel (2002) observes that it can be surrounded by pauses, which surface as parenthetical commas in the written transcription on a par with appositives. However, it is also possible to find cases in which hedging *like* is prosodically integrated with its surrounding material, as shown by the many examples attested in the literature and on the web that are written without any punctuation. By contrast, mirative *like* is necessarily followed by a longer pause, represented (henceforth) with ellipses (which are also commonly found in on-line uses, as well). As a result, while a hedging interpretation is normally available when *like* is prosodically integrated, a mirative reading becomes unavailable if there is no pause following *like*, as shown by the examples below.

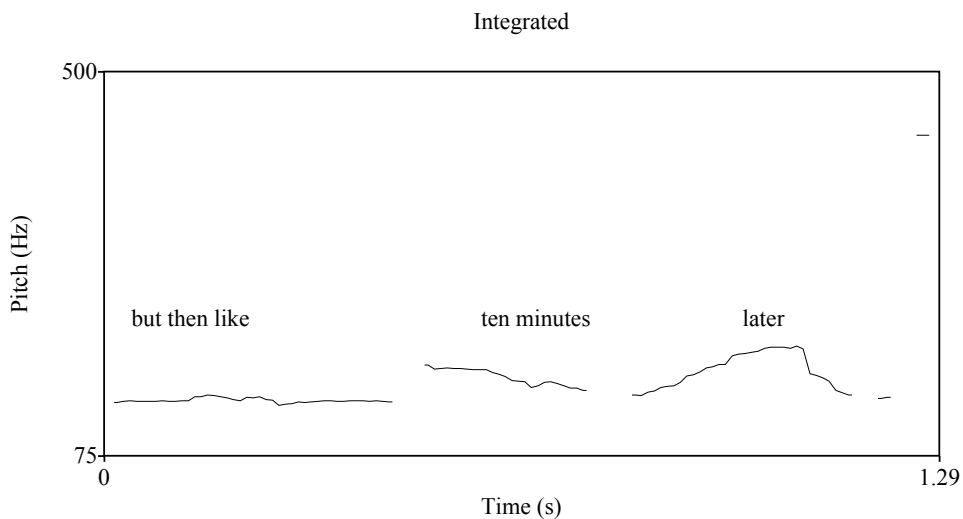
- (14) a. ✓Mary's shoes only cost, *like*, twenty dollars. Pause, hedging
b. ✓Mary's shoes only cost *like* twenty dollars. Prosodically integrated, hedging
- (15) a. ✓My friend I used to hang out with is *like* . . . rich now. Pause, mirative
b. # My friend I used to hang out with is *like* rich now. Prosodically integrated, mirative

The following prosodic contours extracted from Praat (illustrate this difference. The utterances come from a native speaker of American English as part part of a conversation found in the *Lambada* transcript of the Santa Barbara Corpus of Spoken American English (SBCSAE) (Bois et al. 2000). The two utterances are taken from a single speaker, and are found in the same section of the transcript, in which the speaker is telling a story:

- (16) Context: Miles is telling his friends about a recent experience at a dance club.
- a. ...but then **like ten minutes later** she and her friend are over at their table.
 - b. ...twenty minutes later, they were kinda **like .. all over each other**.¹⁶

The use of *like* in (16a) is a clear instance of *like* as a hedging marker, in which Miles gives a rough time estimate. In (16b) however, Miles expresses the surprise one might have at the reported turn of events. In the graph below in (17) we show the pitch contours for uses of hedging *like*. (17) shows the integrated prosody of *like*, where there is no major pause preceding or following the particle.

(17)

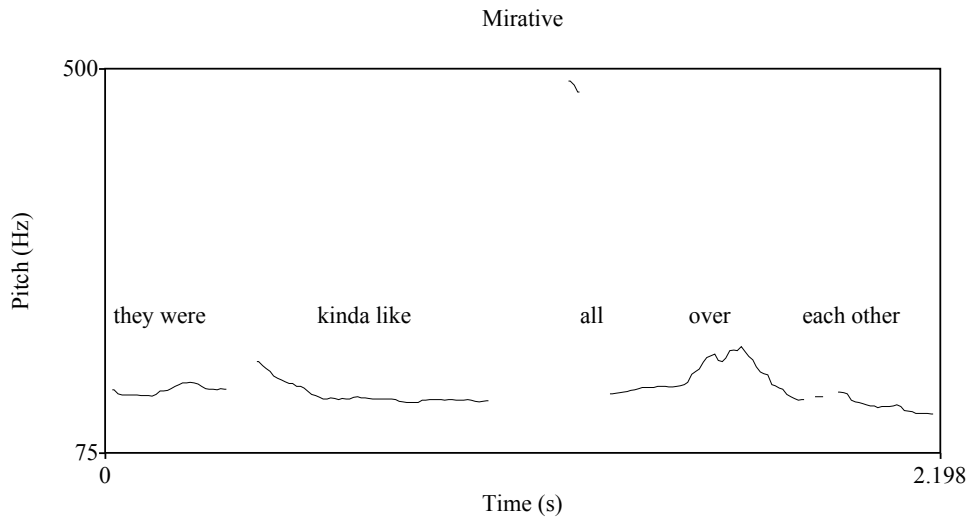


This type of contour differs from the pitch behavior of mirative *like*, which is characterized both by a long pause following *like* and a unique prosodic signature on the predicate, *all over each other*. This pause is also indicated with ellipses in the written transcript above.¹⁷

¹⁶Interestingly, this particular occurrence of mirative *like* is preceded by *kinda*, a marker that provides an approximating contribution that intuitively resembles the one of hedging *like*. In this specific case, we take the approximator to modify the event denoted by the predicate (i.e., “being all over each other”). As confirmed with native speakers, this use of *like* is not indicative of a hedging use.

¹⁷Note also the distinct prosodic contour from exclamative uses, which exhibit a steady rise, followed by an abrupt

(18)



A second difference concerns the compatibility of *like* with other modifiers. Mirative *like* is perfectly felicitous, and in fact widely attested, with markers that indicate full commitment to the proposition on the part of the speaker, such as *totally* or *definitely*. Hedging *like* on the other hand cannot co-occur with such markers. This is shown in (4c) above, reproduced below in (19b), where *totally* is part of the original sentence. This stands in contrast to examples such as (19a), modified here to illustrate the infelicity of such modifiers in hedging uses.

- (19) a. # Mary's shoes only cost like {totally/definitely} twenty dollars. Hedging
b. ✓ Whoa! I like ... totally won again! Mirative

A third difference between hedging and mirative uses surfaces in contexts in which *like* is embedded under the matrix subject of a reportative predicate, such as *say* in (20). In hedging uses, the effects of *like* can be ascribed either to the speaker or the matrix subject, whereas in mirative uses the surprise effect contributed by *like* must exclusively be ascribed to the speaker, and not to fall (Cruttenden 1986), which is not what we observe here.

the matrix subject.¹⁸

- (20) a. John said that Mary's shoes cost *like* twenty dollars. Anchor: ✓ John; ✓ Speaker
b. John said that his friend is *like* ... rich now. Anchor: # John; ✓ Speaker

A fourth difference is that while both mirative and hedging *like* are part of the non-at-issue content, they interact with other components of the utterance's meaning in distinct ways. Siegel (2002) observes that hedging *like* can have an effect on the truth conditions of the sentence, at least indirectly. This is shown in the dialogues in (21). Here, speaker A is objecting to speaker B's denial by countering that her use of *like* as a hedge makes her first utterance true, contrary to what the hearer suggests (21a). The same maneuver is however not possible for mirative uses, where the use of *like* cannot be used as evidence for contesting the truth-value judgment of the hearer (21b).

- (21) a. A: Mary's shoes only cost, *like*, twenty dollars.
B: No, they cost 17 dollars.
A: ✓ Well, I said *like*.
b. A: My friend I used to hang out with is *like* ... rich now.
B: No! He isn't actually that rich!
A: # Well, I said *like*.

Mirative *like* moreover, contrary to its hedging counterpart, interacts with the illocutionary mood of the utterance, i.e. with the properties that pertain to the speech act that the speaker is

¹⁸Siegel 2002 argues that hedging *like* is also necessarily speaker-oriented. This empirical observation is not reflected in judgments collected from 4 native users of *like*.

producing. First, mirative *like* is constrained by choice of speech act in that it is restricted to assertions, appearing to be infelicitous in non-assertive moves such as the posing of constituent questions or the use of imperatives. Below, (22a) cannot be interpreted as an order in which the speaker is surprised at the possibility that the addressee be smart; in the same vein as (22b), which cannot be interpreted as a question where the speaker is surprised at whoever the smart person might be.

- (22) a. # Be *like*... smart now!
b. # Who is *like*... smart now?

In contrast, hedging *like* presents no such restrictions, and can seamlessly operate under the scope of questions or imperatives:

- (23) a. Bring me *like* 20 dollars!
b. How *like* much did the shoes cost?

Second, mirative and hedging *like* engender different types of unacceptability when their content is overtly denied in the continuation of the utterance. This diagnostic was first utilized by Murray (2010) to highlight a difference between evidentials receiving an indirect versus mirative interpretation in Cheyenne. On the one hand, explicitly denying the contribution of the former would give rise to a logical contradiction, similar to what happens when one asserts that it is simultaneously raining and not raining; on the other hand, denying the contribution of the latter would engender an effect resemblant of Moore's Paradox, where the oddness is rooted in a violation of the felicity conditions of the assertion, rather than the logical relation between parts of its content.

While the judgments are admittedly subtle, the two uses of *like* seem to pattern in exactly the same way: while denying hedging *like* has a contradiction-like effect, denying mirative *like* gives rise to an instance of Moore’s Paradox.

(24) **Contradiction**

- a. #It’s raining, and it’s not raining
- b. #The shoes cost *like* 20 dollars and they are cost 20 dollars.

(25) **Moore’s Paradox**

- a. #It’s raining, but I don’t believe it’s raining.
- b. #My friend I used to hang out with is *like* . . . rich now, and this is not surprising.

3.3 Interim Summary

We have compared the grammatical properties of the hedging and the mirative use of *like*. While both uses are encoded as part of the non-at-issue content, they present distinct prosodic profiles, and behave differently with respect to a variety of compositional diagnostics. The table below summarizes them.

Table 1: Hedging vs. mirative *like*

Use	Commitment markers	Shifts to Subj.	Affects TC	Quest/Imp	Denying produces
Hedge	#	✓	Yes	✓	Contradiction
Mirative	✓	#	No	#	Moore’s Paradox

What this discussion suggests is that mirative occurrences of *like* appear to be treated differently by the grammar, suggesting that they ought to be considered as a genuinely distinct usage from the hedging one. On these grounds, we can now move on to address the following question: What is the common core shared by these two uses? That is, what is it about the underlying meaning of the discourse particle *like* that makes it natural to explain the emergence of these two (seemingly) unrelated pragmatic effects? We begin with the hedging use, and then move on to the mirative.

4 Hedging *like*: widening pragmatic halos

Building on Siegel (2002)'s account, we propose that hedging *like* signals that the modified linguistic expression can receive a looser interpretation than the one that it would normally receive in the same context in the absence of *like*. More specifically, hedging *like* increases the degree of deviation from the form's literal meaning that can be tolerated in a particular communicative situation, widening the *pragmatic halo* of the expression (Lasersohn 1999). In doing so, this use of *like* signals that a wider range of similar denotations are admissible alternatives to the denotation of the form that the speaker chose. It is this halo-widening mechanism that derives the intuition that a speaker using *like* is less than fully committed to the proposition.

4.1 Precision, halos and widening: an informal characterization

It has been observed that we are often imprecise in the way that we communicate (Lasersohn 1999). For example, if a driver is driving at a speed of 72 mph, we will normally accept as true a statement that the driver is proceeding at a rate of 70 mph. Strictly speaking, such a statement is not true, but nonetheless acceptable. By the same token, if ten people out of three million are awake in the city

of Chicago, we are unlikely to take issue with the statement that “everyone in Chicago is asleep,” even though, again, this is not a true description of the current state of affairs.

The amenability of (certain) expressions to be interpreted imprecisely has been captured by the suggestion that such expressions come equipped with a *pragmatic halo* – a set of objects of the same denotation type, which differ only in “pragmatically ignorable” ways (Lasersohn 1999). Crucially, the size of the halo is determined contextually (Lasersohn 1999). In particular situations – e.g. talking sports at a bar – we might be more willing to apply a larger margin of tolerance to the interpretation of an expression than in others – e.g. discussing the set up of a chemistry experiment. Informally, we propose that hedging *like* works as a *halo widener*. More specifically, the particle signals that the expression that it modifies comes with a larger pragmatic halo than the one that would normally be tolerated in that context. This, in turn, has the effect of broadening the set of that expressions’s denotations that may be considered.

4.2 Expanding halos: a semantics for hedging *like*

Various authors have offered different perspectives on the proper treatment of pragmatic halos and their size (i.a. Krifka 2006; Sassoon and Zevakhina 2012; Lauer 2012). In the present paper, we follow Morzycki’s (2011) proposal to recast halos as a set of denotations that bear a contextually determined *degree of resemblance* to the denotation of the linguistic form they apply to. The notation we make use of henceforth does not hinge on a particular conceptual stance regarding the notion of imprecision; rather, it is adopted to highlight the parallel between the contribution of *like* in hedging and in mirative contexts, as we now discuss in the remainder of the paper.

The particular model we adopt captures imprecision through the proposal that the interpretation of a linguistic expression is constituted by a set of alternatives that includes the semantic value

of the expression itself, in addition to objects of the same denotation type that bear (at least) a minimum degree of resemblance to the original denotation. The notion of resemblance is modeled via a cross-categorical “approximateness” relation \approx , which holds between two objects if they are similar to at least degree d in context C , where d is a real number consisting of a value between 1 and 0.

- (26) a. $[[\alpha]]^{d,C} = \{\beta: \beta \approx_{d,C} \alpha\}$
- b. $\beta \approx_{d,C} \alpha$ iff, given the ordering imposed by the context C , β resembles α to (at least) degree d and α and β are of the same type.

Crucially, different contexts impose different similarity orderings, as well as different standards of required similarity. The higher the minimum degree of resemblance, the fewer alternatives qualify as similar, and the smaller the halo and vice versa: the lower the degree, the more same-type denotations will be admissible as legitimate interpretations of the original one, and the larger the halo. To see how this works in practice, let us consider the expression “\$20” in (27).

- (27) Those shoes cost **\$20**.

Let us now consider three different contexts. In Context 1, (27) is uttered by a college student during a conversation at a bar, a scenario in which a relatively large amount of deviation from the literal meaning is tolerated (d set at 0.7). In Context 2, (27) is uttered by a frequent customer of the store to a person who has asked about the price of the shoes, a situation in which a higher degree of precision can be expected (d set at 0.9); and finally in Context 3, (27) is uttered by a shop attendant in response to an inquiry by a customer, a situation in which virtually no deviation from the literal

meaning is to be expected (d set at 1, the maximum). The resulting interpretation can be captured as follows:

- (28) a. **Context 1:** $\llbracket \$20 \rrbracket^{0.7,C} = \{\$17, \$18, \$19, \$20, \$21, \$22, \$23\}$
 b. **Context 2:** $\llbracket \$20 \rrbracket^{0.9,C} = \{\$19, \$20, \$21\}$
 c. **Context 3:** $\llbracket \$20 \rrbracket^{1.0,C} = \{\$20\}$

We are now in the position of characterizing the semantic contribution of hedging *like*. We suggest that the modifier widens the size of the halo of a linguistic expression, signaling that a less stringent standard of precision ought to be adopted in interpreting the expression in the context. More specifically, modifying (the halo of) an expression α with *like* amounts to fixing the degree of similarity required for a same-type semantic value β to be part of the halo of α to a lower value (d' , below) than the one imposed by the context (i.e. d). The effect is that of expanding the set of admissible interpretations that the target expression can receive in the communicative situation in which *like* is used. To state this meaning more formally, we compare the set of admissible values for α and its halo with and without modification via *like* in (29). Crucially, in (29b) the halo of α is parameterized to d' , a degree that is lower than d .¹⁹

- (29) a. $\llbracket \alpha \rrbracket^{d,C} = \{\beta: \beta \approx_{d,C} \alpha\}$ (reproduced from (26a))

¹⁹Such an account is in line with the spirit of Siegel's (2002) analysis. In Siegel's account, however, the particle is taken to signal that the interpretation of the expression could either coincide with its denotation, or can be a member of the expression's pragmatic halo. In our proposal we instead assume that the pragmatic halo of the expression is *always* there, regardless of whether *like* is present. This assumption is independently motivated by the observation that imprecision, as reflected in Morzycki's system and in Lasersohn's original discussion, is a general pragmatic phenomenon underlying the interpretation of natural language.

$$b. \llbracket \text{like} \rrbracket(\llbracket \alpha \rrbracket^{d,C}) = \{ \beta : \beta \approx_{d',C} \alpha \wedge d' < d \}$$

We can see how this would work with the contexts above: for each of them, the effect of *like* would be to relax the minim degree of similarity required for computing the halo of the expression.

- (30) a. **Context 1:** $\llbracket \text{like} \rrbracket(\llbracket \$20 \rrbracket^{0.7,C}) = \{ \text{Number:Number} \approx_{d',C} 20 \wedge d' < 0.7 \}$
- b. **Context 2:** $\llbracket \text{like} \rrbracket(\llbracket \$20 \rrbracket^{0.9,C}) = \{ \text{Number:Number} \approx_{d',C} 20 \wedge d' < 0.9 \}$
- c. **Context 3:** $\llbracket \text{like} \rrbracket(\llbracket \$20 \rrbracket^{1.0,C}) = \{ \text{Number:Number} \approx_{d',C} 20 \wedge d' < 1 \}$

Note that imprecision is not necessarily rooted in cardinalities or amounts – the observed effect in expressions such as “\$20” is only one instantiation of how halos, and modifiers such as *like*, operate. In the case of “European” above, for instance, paraphrases for *like* such as *approximately* or *about* do not appear to be accurate. However, the underspecified nature of halos correctly predicts that, in the right context, imprecision could be observed for virtually any type of linguistic expression, as long as it is possible to compute a similarity ordering between its semantic value and some salient same-type alternative set. One such ordering could involve predicates denoting the property of being from a non-European country, where lower degrees would instead incrementally admit as legitimate alternatives the denotation of predicates picking out the property of coming from other countries, where the lower the degree of precision, the longer the tolerated distance of the country from Europe.

5 Mirative *like*: widening Context Sets

Having provided an analysis of hedging *like*, we now move on to the mirative use. In a nutshell, we propose that mirative *like* operates as a device used by the speaker to facilitate acceptance of an assertion by the interlocutor; specifically, the particle signals that the *Context Set* of the conversation, that is the set of possible worlds that are considered by the speakers as candidates for the actual world, should be expanded to admit worlds that were previously held out of consideration due to their perceived outlandishness. The link between hedging and mirativity lies in the fact that both uses of *like* widen a pragmatically restricted set, relaxing the contextual parameter that determines what members can be part of the set – alternative interpretations in the hedging case, possible worlds in the mirative case. The Section is organized as follows: Section 5.1 introduces the basic ingredients of the analysis, Section 5.2 spells out the analysis, and Section 5.4 returns to the empirical properties distinguishing hedging and mirative uses, explaining them in light of the present account.

5.1 Preliminaries: Context Set, Plausibility, Assertions

Let us begin by introducing the basic ingredients of the analysis. Despite our relentless quest for knowledge, we never truly have a full picture of the state of the current world. For example, at the moment of writing, we are not in the position of knowing whether our best friend is still at their office, whether it's raining in Chicago, etc. What we can do, however, is entertain different hypotheses about how the world *could* be with respect to these issues, and progressively discard them as we learn more information – for example, if we find out that our friend is on vacation, then we can rule out the hypothesis that they are working. The upshot is that while our knowledge

will never allow us to “identify a single world as the actual world” (Pearson 2017), it can help us establish at each moment in time which worlds can be considered viable *candidates* for the actual world, and which worlds can be ruled out. On this view, conversation can be seen as a collective endeavor to pool our resources en route to narrowing down our set of candidates: each conversational move can be seen as a step towards collectively learning more about the state of the world and, at the same time, discarding alternatives that are no longer compatible with what we know.

In technical terms, we follow Stalnaker (1978, 2002) in representing each conversational state in terms of the Common Ground, a notion that helps us characterize two aspects that are central to communication. On the one hand, the Common Ground represents what the participants already *know* at a certain point in the exchange. In this perspective, the CG can be seen as the repository of those propositions that are mutually taken to be true in every world in the CG by all conversational participants – in Stalnaker’s terminology, the *presuppositions* of the speakers. On the other hand, the CG allows the speakers to keep track of what worlds are still possible candidates. Informally, such worlds are those that are compatible with what the interlocutors know about the current world. More formally, such a set is obtained by taking the conjunction/intersection of all the sets of worlds representing the propositions contained in the Common Ground. We follow Stalnaker in calling this set the *Context Set* of the conversation, that is, the set of worlds that are recognized by speakers as ‘live options’ for representing the current world. In sum:

(31) a. **The Common Ground (henceforth, CG):**

The propositions that all participants believe to be true, and that they believe that they believe to be true.

b. **The Context Set (henceforth, CS):**

The worlds that are recognized by the speakers to be the candidates for the actual world.

As we will discuss shortly, we suggest that mirative *like* precisely intervenes on the structure of the Context Set. Specifically, we assume that each CS is bound by a pragmatic restriction that prevents outlandish-though-compatible worlds from being taken into consideration as candidate; and we argue that *like* serves as an invite to the hearer to relax such a restriction, effectively re-admitting such worlds into the CS. Before seeing how *like* interacts with this process, let us discuss the nature of the Context Set more closely.

As a first step, we treat the Context Set as a set of *doxastic alternatives*, each of which represents a possible world that is still in contention for being the current world on the basis of what the conversational participants believe to be true. We call this set $CS_{w,G}$, where G represents the group of participants, and w represents the actual world.

$$(32) \quad CS_{G,w} = \{w' : \text{it is compatible with what } G \text{ believe for } w' \text{ to be } w.\}$$

Note that this representation mirrors Hintikka's (1969) and Pearson's (2017) representation of the individual doxastic states of each discourse participant, which contains the set of candidates that a particular individual considers to be in contention. In this perspective, we essentially treat the Context Set as a *collective* doxastic state – that is, as a set of doxastic alternatives that need to be compatible with the shared beliefs of all the participants, rather than with the beliefs of a single speaker. The second step towards understanding how mirative *like* operates – and perhaps, the most important conceptual move of our analysis – is the following: doxastic states, including Context

Sets, are pragmatically restricted, just as are the interpretations of linguistic expressions. Specifically, we tend to exclude from our doxastic states *outlandish* worlds, that is, worlds that are too distant from the current one, even if they are in principle compatible with what we know. To see a concrete example, consider again the following proposition.

(33) $p =$ A friend that I used to be close with is now rich.

Let us imagine that the CG contains only worlds in which the propositions above are true: the person in question comes from a low-income family; they were very unsuccessful at school; they had a merely average work ethic; and they were rather unambitious. Crucially, none of such worlds are incompatible with worlds in which such a person is now rich. They could have won the lottery, or suddenly had a brilliant idea. But while these possibilities cannot be excluded, they are, at best, highly remote. Given what we know about this person, it is exponentially more likely that the actual world will turn out to be one in which such a person is *not* rich. This makes the worlds in which the person is rich so outlandish that, for pragmatic purposes, we can rule them out from our Context Set. In other words, even if we do not have any information on this person's current income, we can proceed under the assumption that this person is not rich, purposefully ignoring possibilities in which they actually are. Evidence supporting the idea that outlandish worlds are routinely ignored when we engage in conversation comes from the domain of modals, that is expressions that operate by quantifying over possible worlds (Kratzer 1991). Consider the following example, from Klecha (2014):

(34) Alice: I want to go outside, but I don't want to get wet.

Bryan: You have to wear the raincoat.

Alice: # No, I don't have to. I could cover every inch of my skin in duct tape.

In the exchange above, Alice is strictly speaking right – there is one possible world in which one could avoid getting wet by wrapping themselves up in duct tape, making Bryan's use of *have to* too strong. Yet, Bryan is still using language in a felicitous way, to the point that Alice's reply is likely to come across as unnecessarily pedantic. While not being categorically ruled out by what we know about the current world, worlds in which people cover their skin with duct tape to fight the rain are so unlikely that they routinely escape the modal base of *have to*, qualifying Bryan as a savvy speaker. Note that, crucially, different contexts might impose different standards on how outlandish a world must be to be ignored. Let us consider the following two contexts, also from Klecha (2014): a science olympiad where teams compete to solve engineering problems; and a Rube Goldberg device olympiad, which has the same rules but encourages participants to solve their problems in creative, roundabout ways.

(35) a. **At a Science Olympiad:**

In order to get the ball across this gap, we *have to* lay down a bridge. *True*

b. **At a Rube Goldberg device-building olympiad:**

In order to get the ball across this gap, we *have to* lay down a bridge. *False*

In the first context, the option of building a Rube Goldberg device, while not impossible, requires such a high amount of time and procedural complexity that it can be safely ruled out as an unreasonable possibility, much like the option of covering one's body with duct tape in (34) above,

leading us to judge the sentence in (35a) as true – constructing the bridge is the right thing to do. In the second context, however, using complicated devices is the defining trait of the competition. As such, worlds in which we build one of them are no longer outlandish, but fully fall within the domain on which the modal operates, engendering the intuition that the sentence in (35b) – according to which the obvious solution is to build a bridge – is false. Through this exercise, it is possible to see that the pragmatic practice of excluding outlandish worlds is not just a minor detail about the conversational setting; rather, it is deeply ingrained in our way of interpreting and processing meaning, to the point that it affects our judgments about a sentence containing an operator that quantifies over worlds.

Going back to the main issue under discussion, it therefore seems reasonable to posit that plausibility-based restrictions on possible worlds should not just be taken into account to analyze the semantics of modal operators, but should also be incorporated into our understanding of how we reason about possible worlds more generally. This, crucially, also includes the process whereby we compute candidates for the actual world based on the information that we have in our Common Ground. We thus propose to enrich the notion of a Context Set by suggesting that, for a group of participants G , CS includes worlds that are not only compatible with what the speakers know/believe, but also reasonable.

(36) $CS_{G,w} = \{w' : (i) \text{ it is compatible with what } G \text{ believe for } w \text{ to be } w';$

$(ii) \text{ } w' \text{ is } \underline{\textit{reasonable}}.\}$

To model this second property, we make use of the following ingredients. First, following

Klecha (2014), we propose to measure the outlandishness of a world by means of ST, an operator that applies to two worlds v and w and returns the degree of stereotypicality of v given what we know in w relative to context C .

(37) $ST(v)(w)$ in $C = d$: v is d -stereotypical given circumstances in w in C

Second, we enrich the meaning of $ST(v)(w)$ with a parameter θ , representing the minimum threshold of stereotypicality that a world must have (with respect to the evaluation world) to count as plausible.²⁰ To have access to such parameters, we assume that CS itself is parameterized not just to a group of participants and a world of evaluation, but also to a threshold, thus providing the required elements to assess the reasonability of a world. With these tools, we are ready to formalize the notion of reasonable Context Set informally sketched out above. $CS_{G,w}^\theta$ will contain those worlds that are compatible with what the speakers mutually believe (per the definition of CS), as well as those that are greater or equal in plausibility to the threshold θ in C .²¹ In more formal terms, for a world v and an evaluation world w :

(38) $CS_{G,w}^\theta = \{w' : (i) \text{ it is compatible with what G believe in } w \text{ for } w \text{ to be } w';$

(ii) $ST(w')(w) \geq \theta\}$

We argue that, by means of using *like*, the speaker signals to the hearer that the Context Set

²⁰This notion of stereotypicality is slightly different from the notion used by Kratzer (1991) in her seminal work on modality. See Klecha (2014) for extended discussion.

²¹For a given pair of worlds, θ might be different depending on the type of setting in which the conversation is taking place. While we will omit C from further representations of the CS to improve readability, we always assume that, similar to thresholds of precision, thresholds of stereotypicality are also context-sensitive.

should be expanded to include worlds that, due to their outlandishness, were previously excluded from contention. As we discuss below, this move serves as a strategy from the speaker to facilitate acceptance of their assertion in contexts in which the assertion is especially likely to be rejected – that is, in contexts in which all p -worlds are highly implausible, and thus excluded from the set of worlds under consideration to begin with.

5.2 The problem of updating with outlandish worlds

To see how this contribution can be modeled, let us begin by reviewing the process whereby we update our pool of candidate worlds. First of all, we follow Stalnaker and much of the subsequent literature in assuming that conversation is aimed at narrowing down the Context Set, so as to inch closer towards a representation of the current world. This goal is pursued by means of uttering linguistic *assertions*. Specifically, every time we accept a proposition asserted by our interlocutor, we *eliminate* from the CS those worlds that are not compatible with the proposition – that is, the worlds in which the proposition is false – via set intersection. The CG resulting from an accepted assertion will be one in which the assertion has become a presupposition; the ensuing CS will be one in which only the worlds in which the asserted proposition is true are preserved, while the others are ruled out. To see how this process works, let us start with a simple assertion, such as (39):

(39) A friend that I used to be close with now has two kids.

Furthermore, let us imagine that there are four possible worlds: two in which p is true, w_{11} and w_{22} ; and two in which p is false, w_{33} and w_{44} .

(40) $p =$ A friend that I used to be close with now has two kids.

a. $p(w11) = 1$

b. $p(w22) = 1$

c. $p(w33) = 0$

d. $p(w44) = 0$

Let us now imagine a two-party conversation between Sue and John, taking place in an actual world $w1$ in which p is reasonably plausible. For instance, such a world is one in which the speakers know that the person in question comes from an already well-off family, showed strong motivation, and displayed a rare talent since the early stages of their education. In such a world, all possible worlds have relatively high stereotypicality values. On the one hand, it is reasonable that the person is now rich, given the advantageous circumstances; on the other hand, it is likewise reasonable that the person is *not* rich, given the fact that motivation and talent, while conducive to financial success, are by no means sufficient to attain it. As such, for a plausibility threshold set at 0.1, they all comfortably make the cut to be in the Context Set of the conversation involving the group of participants G (i.e. Sue and John).

(41) a. $ST(w1)(w11) = 0.4$

b. $ST(w1)(w22) = 0.3$

c. $ST(w1)(w33) = 0.4$

d. $ST(w1)(w44) = 0.5$

e. $CS_{G,w1}^{0.1} = \{w11, w22, w33, w44\}$;

Let us now imagine that Sue learns that the person in question is now indeed rich, and wants to share this information with John their interlocutor. Following the standard Stalnakerian view, the update procedure proceeds as follows: first, Sue asserts that p ; second, if John accepts the assertion – or, to put it more precisely, unless John has any explicit objection to it – the Common Ground is updated by intersecting the worlds in the Context Set with the worlds in which p is true. This process narrows down the CS, maintaining in it only the worlds in which the asserted proposition is true, and eliminating those in which it is false. (42) provides a step-by-step breakdown of the process:

- (42) a. Initial state: $CS_{G,w_1}^{0.1} = \{w11, w22, w33, w44\}$;
 b. Sue asserts p .
 c. John accepts the assertion.
 d. New state: $CS_{G,w_1}^{0.1} = \{w11, w22\} \cap \{w11, w22, w33, w44\} = \{w11, w22\}$

Let us contrast this situation with the actual world $w2$ described in the previous §5.1, where both Sue and John believe that the possibility of the person being rich, given the circumstances, is very remote. Here, all worlds in which the person is rich have very low stereotypicality value. Hence, for θ set at 0.1, the Context Set of a conversation between Sue and John contains only $\neg p$ worlds.

- (43) a. $ST(w2)(w11) = 0.08$
 b. $ST(w2)(w22) = 0.07$
 c. $ST(w2)(w33) = 0.7$
 d. $ST(w2)(w44) = 0.8$
 e. $CS_{G,w_1}^{0.1} = \{w33, w44\}$;

What happens if, in w_2 , Sue learns that the friend wins the lottery and intends to assert it, so as to share this news with John? Since there are no p -worlds in the Context Set, intersection with p worlds would lead to the empty set, that is, to an inconsistent Common Ground.

- (44) a. Initial state: $CS_{G,w_1}^{0,1} = \{w_{33}, w_{44}\}$;
 b. Sue asserts p .
 c. John accepts the assertion.
 d. New state: $CS_{G,w_1}^{0,1} = \{w_{11}, w_{22}\} \cap \{w_{33}, w_{44}\} = \emptyset$

Needless to say, such an effect would be highly disruptive for the collective endeavor in which the conversation participants are engaging, jeopardizing their epistemic quest for identifying the actual world; in terms of discourse, indeed, a conversational state with an inconsistent Common Ground is *in crisis* (Farkas and Bruce 2010). Such a state of affairs is identical to a state resulting from asserting a proposition that contradicts what is in the Common Ground, an act that Stalnaker labels as *self-defeating* (Stalnaker 1978: p. 44). Should we then conclude that the stereotypicality restrictions on the Context Set makes it impossible for us to assert, and therefore to turn into common knowledge, a proposition that is only true in implausible worlds? This seems to be too strong a constraint. First, the worlds in which the friend is rich, though outlandish, are after all *compatible* with the actual world, and are therefore not impossible. In addition, it is well known that pragmatic restrictions excluding outlandish worlds are *defeasible* (Klecha 2014): they can be lifted, slackened or tightened by the interlocutors throughout the conversation. As such what needs to be done to resolve the issue is to first re-admit outlandish worlds into the Context Set. Once this is done, it will then be possible to eliminate the $\neg p$ worlds and, eventually, add the proposition to the Common

Ground via a regular update operation. We suggest that mirative *like* precisely serves the purpose of facilitating this operation.

5.3 Mirative *Like*: Addressing scrutiny, expanding Context Sets

While the listener always has the possibility of autonomously considering remote worlds, this is not guaranteed to happen. In fact, assertions proposing counter-expectational updates are very likely to undergo special scrutiny before p becomes common knowledge. In particular, it has been observed that a natural reaction to such proposals is a “double-checking” move: a response whereby the addressee explicitly asks the speaker to confirm the appropriateness of adding p to the Common Ground, deferring any decision on the acceptance of the proposal until receiving such a confirmation. Typical examples of such double-checking reactions are *really, did that really happen?*, and similar expressions (Romero and Han 2004 for extensive discussion of double-checking moves.)

(45) a. Sue: My friend I used to hang out with is rich now.

Joe: *Wait, really?*

b. Luke: I won again!

Mary: *Wait, is it true?*

We suggest that *like*, by lowering the stereotypicality restrictions on the Context Set, serves as an explicit marker to win over the hearer’s potential skepticism and ensure acceptance of the proposal without further scrutiny. Specifically, we argue that the use of *like* facilitates the update in two ways. On a compositional level, it expands the pool of candidate worlds. As such, it creates the conditions for the hearer to accept the assertion and successfully eliminate the $\neg p$ worlds, while reducing the

risk of leading the conversation in a state of inconsistency (see (44) above). On a pragmatic level, it indirectly signals that the speaker themselves acknowledges the outlandish nature of the asserted content – if this weren't the case, there would have been no need to use *like* in the first place. This acknowledgement serves as a further attestation to the speaker's cooperativeness, showing that they took the listener's perspective into consideration, and that they are willing to go out of their way to make sure that the assertion enriches the Common Ground – the main goal of any conversational exchange.

We implement this idea in the following way. To begin with, we follow Krifka in seeing speech acts as functions that take a proposition and an input conversational state as argument, and return an output conversational state (Krifka 2001). Against this background, we assume assertions can be represented through a multi-layered structure, which minimally encode two components: the proposition p ; and the *illocutionary* content, i.e. the effect that the author of the speech act aims to obtain on the discourse state. In the standard Stalnakerian view, the illocutionary content of an assertion consists of a proposal to add p to the CG. Following the procedure described above, this result amounts to generating an output Context Set of the conversation by intersecting the candidate worlds in the input Context Set with the worlds in which p is true. Following the notation introduced above, G represents the group of participants, w the world in which the conversation is taking place and θ the degree of stereotypicality of the Context Set. To facilitate readability, we omit from the representation of the CS the condition that the candidate worlds must be compatible with what we already know – i.e., (i) in (38). We assume that that the conditions remains in place, of course.

(46) a. A friend that I used to hang out with is rich now.

- Input Proposition: $p = \lambda w.$ “A friend . . . rich now” is true in w .
- Input CS: $CS_{G,w}^\theta = \{w' : ST(w')(w) \geq \theta\}$
- Illocutionary content: $CS_{G,w}^\theta \cap \{p\}$

We suggest that, by using *like*, the speaker specifies that the p -update operation ought to be carried out not with respect to the Input CS, but to CS+, a widened Context Set whose threshold of stereotypicality is lower than the one of the Input CS – that is, the one that had been in place up until that moment in the conversation. To see how this is implemented in the dynamics of assertion, let us first compare the internal structure of CS and CS+. The two sets are identical, with the exception that the threshold for filtering out outlandish worlds in CS+ is θ' , that is, a lower one than the one in the original set. This ensure that CS+ is a superset of CS; it contains all the worlds that were already candidates before, plus some outlandish-but-CG-compatible candidates that were previously excluded.

- (47) a. $CS_{G,w}^\theta = \{w' : ST(w')(w) \geq \theta\}$
 b. $CS+_{G,w}^{\theta'} = \{w' : ST(w')(w) \geq \theta' \wedge \theta' < \theta\}$

We propose that assertions modified by *like* differ from regular assertion by making use of CS+ in the illocutionary proposal, as opposed to CS.

- (48) a. **A friend that I used to hang out with is *like* . . . rich now.**
- Input Proposition: $p = \lambda w.$ “A friend . . . rich now” is true in w .
 - Input CS: $CS_{G,w}^\theta = \{w' : ST(w')(w) \geq \theta\}$
 - Expanded Input CS: $CS+_{G,w}^{\theta'} = \{w' : ST(w')(w) \geq \theta' \wedge \theta' < \theta\}$

•Illocutionary content: $\text{CS} +_{G,w}^{\theta} \cap \{p\}$

On this view, mirative *like* operates indirectly modifies the illocutionary force of an assertion. While the essential effect of the assertion remains the same – namely, adding p to the CG – the proposal put forward by an assertion modified by the particle operates over a different input, one that includes (at least some) outlandish worlds as candidates. This captures the desired effect: by expanding the CS, the use of *like* ensures that at least some of the worlds in which p is true are also part of the pool of candidates for the current world; this crucially reduces the risk that the update of the assertion lead to an inconsistent Common Ground, putting the listener in a better condition to accept the proposal. Note that using *like*, however, does not guarantee that the update will actually go through. Following the standard view of assertion, whether the proposal is accepted remains out of the speaker’s hands, and is ultimately up to the addressee’s discretion. Using the particle when uttering an assertion true in outlandish worlds, however, will increase the likelihood for this to happen.

Before returning to the comparison between hedging and mirative *like*, two observations are in order. First, the association between *like* and surprise emerges as a side effect. *Like* does not mark surprise per se; however, if the speaker is accompanying an assertion with a signal that remote worlds should now be considered, it follows that those worlds are indeed those in which the asserted proposition is true, triggering the inference that p is unexpected. On this view, the contribution of mirative *like* crucially differs from the one of markers that directly convey the speaker’s feeling of bewilderment towards the content of what they are asserting, such as exclamative intonation, and markers such as *wow!* (Rett 2011). Second, by targeting a *shared* space in the conversation – as opposed to a private one – the effect of particle crucially involves both interlocutors, and not just the

speaker. This correctly captures the observation that the felicitous use of the particle requires that the asserted content must be hard to believe for the addressee as well, and not just to the speaker. Again, this seems to make *like* different from mirative markers that are more inherently anchored to the speaker's perspective, such as exclamatives (see (8)-(9) above).

We now return to the central theme of the article, and discuss how the proposed analysis help us make sense of the differences between hedging and mirative uses of the particle.

5.4 Capturing the differences

As can be recalled from the previous discussion, mirative *like* can be distinguished from the hedging version by virtue of: (i) being compatible with markers of maximal certainty; (ii) failing to impact the truth-conditions of the assertion; (iii) being unavailable in unbiased questions and command imperatives; and (iv) resisting shifting when embedded under the subjects of attitude or reportative verbs.

First, compatibility with markers of epistemic confidence stems from the fact that mirative *like* is used by the speaker to enhance the possibility that their proposed update is accepted by their interlocutor. As such, any assertion in which the particle is used shares with regular assertions the felicity condition that the speaker individually believes that p – that is, that the proposition is true in all the available doxastic alternatives in the speaker's epistemic state (Searle 1969; Hintikka 1969). As such, using mirative *like* is perfectly compatible with markers that explicitly signal epistemic certainty towards the proposition. By contrast, hedging *like*, by widening the allowable pragmatic halo of an element within the asserted content, gives rise to a weaker assertion than what would have been produced without *like*. As such, even though hedging *like* does not directly lower the speaker's commitment, adding a marker of confidence is inconsistent with the weakening effect

associated with widening the halo, thus giving rise to a pragmatically incongruous behavior. In light of this, it is also possible to understand why hedging, but not mirative, *like* has an effect on the truth conditions of the utterance.

On the one hand, the halo-widening contribution of hedging *like* crucially affects which individuals fall into the extension of a predicate. For example, the fact that a wider range of prices can be accepted for interpreting “\$20” will ultimately impact the process whereby we assign truth to “The shoes cost \$20.” While this contribution does not emerge by directly modifying the descriptive content, it effectively makes the truth-conditions less stringent.²² This does not happen with mirative *like*. Because the particle targets the illocutionary content of an assertion, it is inert with respect to the logical content of what is being asserted, thus failing to impact the truth-conditions of the statement.

The limitation of mirative *like* to assertions follows from the fact that the particle is used to facilitate the addition of a proposition to the Common Ground; such a specification cannot be made in speech acts in which no update is proposed to begin with, constraining the use of *like* accordingly. Concerning questions, the illocutionary content does not encode a proposal; rather, it presents the listeners with two alternative routes through which the Common Ground could be updated, and towards which the speaker has no particular commitment (see Farkas and Bruce (2010) for further discussion). Concerning imperatives, these speech acts aim at bringing about changes in the actual world, rather than attaining its correct representation. As such, the felicity conditions of these utterances are related to notions such as authority, performativity and preferences (see Condoravdi and Lauer 2012), and have little to do with the status of the proposition in the picture of the world shared by the interlocutors making the contribution of *like* non-congruent. By contrast, because

²²See Siegel (2002): 64 for further discussion on how the the truth-conditional effects of hedging *like*.

hedging *like* targets the linguistic interpretation of individual predicates, its use is insensitive to the specific type of speech act used in the context, as well as the pre-conditions of such a speech act. As a result, the use of hedging *like* is felicitous whenever the semantic interpretation of the content of the utterance is important, i.e. in virtually any type of utterance that makes use of natural language.

Finally, the strong tendency of mirative *like* to resist embedding is linked to its status as a speech act modifier. By modifying the input of the proposal made by the assertion, its contribution is inherently anchored to the participants in the *here-and-now* of the conversation. This also applies to situations in which the content of the assertion features other doxastic agents which in principle could serve as the anchor, but which are not involved in producing the very utterance in which *like* is used. This is not the case for hedging *like*, however. Because this use of the particle conveys a metalinguistic commentary that is independent from the properties of the speech act in which it occurs, it can shift under any agent that could in principle produce such a commentary: the speaker, which is always an option, or other subjects involved in reportative or belief events.

6 The encoding of mirativity: from *like* to evidentials

Now that we've proposed an analysis that accounts for the two uses of *like*, we return to the more general issues that were raised at the beginning of the paper. First, how are the hedging effect and the mirative effect of *like* conceptually related? Second, how does the connection between these two uses speak to other expressions that feature a similar polysemy between mirative and non-mirative effects? We begin by discussing the underlying similarities between the hedging and mirative contribution of *like* as well as their differences; we then proceed to situate the case of *like* in the cross-linguistic landscape of mirative expressions.

6.1 *Like*: the common core behind hedging and mirative effects

While the hedging and mirative functions of *like* appear to be unrelated at first sight, the analysis outlined above has suggested that they are in fact linked to the same core operator. In both uses, *like* relaxes a context-sensitive pragmatic restriction that determines the cutoff point for what elements are part of a pragmatic halo and a doxastic state, respectively. The contextual restrictions that the presence of *like* manipulates in both uses respond moreover to very similar pragmatic demands. Assuming a certain amount of deviation from the truth conditions of an expression and its actual interpretation allows us to describe the world in a perspicuous way, sparing us the burden of providing unnecessarily fine-grained details; similarly, ruling out outlandish worlds allows us to work with fewer candidates in our quest for achieving a representation of the actual world, sparing us “the cognitive difficulty of processing unexpected/non-stereotypical propositions” (Klecha 2013: 144).

If the two uses fundamentally bring about the same type of manipulation over very similar pragmatic restrictions, how can we explain the fact that, as discussed in §2, only hedging *like* contributes a weakening effect, while mirative *like* does not? We suggest that the difference is not grounded so much in the contribution of *like* as it is in the distinct properties of the different semantic objects that *like* operates over. More specifically, we suggest effects of weakening/strengthening are ultimately determined by the differential interaction between the size of the set as well as the pragmatic strength associated with pragmatic halos and context sets. In the case of halos, the larger the set of the admissible alternatives to an expression, the larger the amount of deviation from the expression’s literal interpretation. This in turn dilutes the strength of the assertion: because more possibilities that are compatible with the speaker’s communicative intention remain open,

the assertion will allow us to learn less about the state of the world than the its *like*-free counterpart. The situation is different with context sets. Here, considering non-stereotypical worlds is a pre-condition for accepting an assertion that instead leads us to learn *a lot* about the world. For example, learning that a person that we didn't expect to have financial success is actually rich allows us to eliminate many candidates for the actual world, leading us to gain more knowledge than we would have gained had we learned that this person, as expected, wasn't rich. Thus follows the intuition that assertions with mirative *like*, contrary to those modified by the hedging variant, are not weak; they are, in fact, quite informative.

The proposed analysis leaves one question open: how does the hedging/mirative polysemy of *like* relate to the the other pragmatic and syntactic functions that this form can have in English? As discussed in §2.1, the empirical picture appears to be especially complex. D'Arcy (2007) has individuated as many as nine separate functions, which, aside from the discourse particle use, include the following uses (among others):

- (49) a. Mary feels *like* she's going to succeed. *conjunction*
 b. The doll was child-*like*. *suffix*
 c. Mary was *like*, "why not?" *quotative complementizer*

In light of this rich constellation of uses and contributions, the question arises as to whether the analysis outlined above, or at least the common core that links the hedging and the mirative contribution, can illuminate whether a similar semantic affinity connects the other uses as well. While an exhaustive answer would go well beyond the scope of the paper, we provisionally note that the notion of relaxing a standard of similarity between two linguistic expressions and two worlds –

the essential commonality shared by hedging and mirativity – seems to be potentially relevant to at least the conjunction (49a), the suffix (49b) and and quotative uses (49c). The crucial notion tying of all these uses together is the fact that *like* is placing two distinct entities in a relationship of *similarity* to one another. All of these intuitively involve a comparable similarity relationship between two close-though-not-identical objects of the same linguistic type, such as two individuals for the conjunction use, two adjectives for the suffixal use, or two speech events for the quotative use (see Davidson 2015 for an extended semantic analysis of this use). Further illustrating the fact that *like* can be used to relate two objects as being “similar enough” is the use of *like* in so-called similatives:

(50) Mary dances *like* John does. *similative*

In Rett’s (2013) treatment of similatives, she argues that the two types of dancing here can be related along a variety of similarity criteria. Perhaps the most relevant similarity in an example such as (50) can be thought of as a *similarity of manner*, e.g., both Mary and John use their arms a lot while dancing. What all of these uses of *like* share is the fact that they place two objects in a relationship of rough similarity with one another. In the case of conjunction, the embedded proposition is in a relation of similarity to what Mary feels, and represents moreover that she is not quite sure about her success. In the case of its suffixal use, *like* indicates that the doll in (49b) is similar to a child, but is not quite one. In the case of the quotative complementizer, the direct quotation in (49c) places the content of Mary’s utterance in a relationship with Mary’s state. Finally, in the case of the similative in (50), the presence of *like* equates some manner of Mary’s dancing with one of John’s. Whether the proposed formalization of such a similarity standard in terms of a context-

sensitive numerical parameter is adequate for all these uses remains to be seen. However it is at the very least encouraging to observe that, despite their important different syntactic and pragmatic properties, these uses of *like* could also lend themselves to a partially unified semantic analysis.

6.2 Mirativity: the cross-linguistic picture

Stepping back to the broader picture, an outstanding issue concerns the relationship between *like* and other dependent manifestations of mirativity cross-linguistically, in particular with the widely attested cases of evidentials. Needless to say, addressing such a puzzle in a comprehensive fashion would require a detailed comparative analysis of *like* and the known cases of mirative evidentials, which would extend well beyond the scope of the present paper; we nevertheless find it worthwhile to make several preliminary observations, focusing on the following question: what semantic/pragmatic property(ies) construe(s) *like* and narrative/indirect evidentials as a suitable natural class for the expression of speaker's surprise?

Among the vast literature on evidentiality, we would like to mention two accounts aiming at connecting the encoding of indirect evidence and mirativity. In Rett and Murray's (2013) work on Cheyenne, the link is modeled in semantic terms. Both indirect and mirative evidentials relate the at-issue proposition p to some contextually salient set E of epistemically accessible propositions. What determines the difference between the two meanings is the temporal relation between the utterance and the event of the speaker learning that p . If the assertion is made within a short time period of time after the learning moment, E is valued as the speaker's own expectations, triggering the mirative reading; if the assertion is made a long time after the learning moment, E is valued as the community's expectations, triggering the indirect interpretation. It is difficult to directly compare this proposal with the account of the polysemy of *like* outlined in this paper. In particular,

the effect of lowering the required threshold of precision, as done by hedging *like*, seems to have little to do with the encoding of information, making these analysis difficult to pit against one another. However, there are two ways in which the polysemy featured by *like* seems to be related to that of the evidentials examined by Rett and Murray. First, the availability of a mirative interpretation is semantically motivated by the logical form of the expression it is parasitic on. Whether it is about valuing a set of propositions, as evidentials do, or a pragmatic restriction over a set, as *like* does, mirativity arises through a structurally similar mechanism to the one that yielded the other reading. Second, in both accounts mirativity is modeled as a speech act phenomenon: its contribution not encoded as part of the propositional content, but pertains to the illocutionary contribution of an assertion. In both cases, this claim is substantiated by similar empirical properties, such as speech-act-level restrictions, Moore’s Paradox effects, and resistance to perspective shifts (see §3.2). Accordingly, the question follows as to whether the compositional commonalities between *like* and mirative evidentials point to a more general cross-linguistic property of the expression of surprise, highlighting mirativity as a phenomenon that is inherently encoded as a speech act property, as opposed to other types of non-at-issue meaning. We see this as an important question for cross-linguistic semantics, and for linguistic theory more broadly.

Peterson (2010), by contrast, suggests that mirative interpretations of evidentials are the result of an implicature, framing mirativity as a *pragmatic* phenomenon. The implicature arises whenever a speaker utters an assertion with an indirect evidential in a context in which they have direct knowledge of a situation. This move would violate Grice’s Quantity Maxim: since a stronger assertion could have been made – that is, one without an evidential – the speaker is clearly being under-informative. As a way of reconciling this linguistic behavior with a cooperativeness, the evidential is re-interpreted as a marker of the speaker’s mental unpreparedness with respect to the

proposition, thus imbuing the evidential with a flavor of surprise. Concerning *like*, it is not possible without detailed diachronic data to determine whether the mirative variant effectively emerged via a similar conversational implicature. While we think that this is a very plausible hypothesis, the fact that it is not possible to cancel the mirative contribution without generating infelicity indicates that, in any event, this effect has now become conventionalized as part of *like*'s lexical meaning, similar to the cases discussed in Rett and Murray.

(51) #My friend I used to hang out with is *like* . . . rich now, but this is not surprising.

It can furthermore be observed that, from a synchronic perspective, hedging *like* and indirect evidentials are indeed both associated with speech acts that are crucially weaker than their unmodified counterparts: while asserting p , the speaker leaves open the possibility that things might be otherwise, either due to lack of direct evidence, or by signaling that a strict interpretation of the sentence's content might not apply. In this respect, what both hedging and indirect evidentiality share is that they leave room for a $\neg p$ option that would have been instead unavailable – or at least much more backgrounded – in the case of non-hedged statements or assertions backed up by direct evidence. Notably, the underlying presence of a $\neg p$ option is also present in the expression of surprise. In particular, it has been suggested that mental states of surprise arise from a contrast between the expectation that the proposition is false (hence, $\neg p$), and the observation that it is actually true (hence, p), which, likewise, contributes to making $\neg p$ salient. Giannakidou (2015) formalizes this intuition by proposing that, if a speaker s is surprised that p , then she must have believed that $\neg p$, at a time t' prior to the time of utterance (see Giorgi and Pianesi 1997, Giannakidou and Mari 2016 for different proposals).²³ The emerging picture is one in which the availability of a $\neg p$ alternative

²³Crucially, the association of surprise with a negative proposition is empirically substantiated by several indepen-

provides a conceptual bridge between hedging *like* and indirect evidentials on the one hand, and the effects of speaker's surprise that these expressions can convey on the other. More specifically, a hypothesis following from this observation is that constructions that independently leave room for $\neg p$ worlds are suitable linguistic forms to express the category of mirativity; the specific semantic/pragmatic mechanism through which surprise is expressed, however, will ultimately depend on the particular type of semantic contribution whereby each form makes $\neg p$ available. On this view, it is remarkable that a similar connection between $\neg p$ and mirativity seems to be at work for other expressions beyond evidentials and *like*. For example, the subjunctive mood in Italian is licensed either in situations characterized by a lack of commitment to the truth of p , or under the scope of predicates that presuppose commitment to p , but express emotion and surprise (Giannakidou and Mari 2016). Such examples provide encouraging, if preliminary, evidence that dependent manifestations of mirativity might be found across many more linguistic domains than evidentiality, pointing to the expression of surprise as a phenomenon that encodes a general semantic/pragmatic core, but which nonetheless surfaces in different ways depending on the specific nature of the linguistic form that conveys it.

7 Conclusion

In this paper we have shed light on a previously undocumented use of *like* as a mirative particle. In addition to highlighting and modeling a novel category in the complex constellation of uses of *like*, the proposal outlined in this paper paves the way for a more systematic investigation of the manifestation of mirativity in natural language, raising a number of issues that, if adequately

dent properties, such as the observation that verbs of surprisal can license negative polarity items, as in "I am surprised that we found *any* ticket." See Giannakidou (1999) for further discussion.

addressed, could greatly improve our understanding of how surprise is linguistically conveyed and encoded across a wide variety of different languages and constructions.

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