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Metalinguistic gradability*

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Abstract We present a novel semantic and conversational framework for a class of gradable-like constructions. These include **metalinguistic comparatives**, like *Ann is more a linguist than a philosopher*, as well as metalinguistic equatives, degree modifications, and conditionals. To the extent previous literature discusses such **metalinguistic gradability**, the focus has been on comparatives. We extend our account of metalinguistic comparatives (Rudolph & Kocurek 2020) to cover a broader range of metalinguistic gradable constructions. On our **semantic expressivist** view, these all serve in various ways to express speakers' relative commitments to different linguistic interpretations.

Keywords: metalinguistic comparatives, gradability, common ground, interpretation, expressivism

1 Introduction

Words like *tall*, *large*, and *smart* are canonical examples of gradable adjectives. Not only can someone be smart or not smart, but they can be smart in varying degrees. This gradability comes out in a variety of constructions, such as:

(1) a. Ann is smarter than Ben.
b. Ann is as smart as Ben.
c. Ann is very/sorta smart.

Intuitively, these sentences are about the degrees to which individuals possess some scalar property. Gradability of this sort is a familiar and widely discussed topic within semantics and pragmatics. Less often discussed is the fact that many expressions besides canonical gradable adjectives can occur in similar constructions:

(2) a. Ann is more a linguist than a philosopher.
b. Ann is as much a linguist as a philosopher.
c. Ann is very much/sorta a linguist.

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Previous discussion in this area has focused on cases like (2a), often labeled **metalinguistic comparatives**. As Huddleston & Pullum (2002: 1122) put it, these comparatives are metalinguistic because they are "concerned not with segments on [a] scale … but with the relative applicability of the linguistic expressions." Intuitively, (2a) means that it is, in some sense, better to call Ann a *linguist* than to call her a *philosopher*. Similarly, (2b) seems to convey that Ann is as aptly called a *linguist* as a *philosopher*, while the variations in (2c) express certainty or ambivalence about describing her as a *linguist*.

We will use the term **metalinguistic gradability** (or **metagradability** for short) for constructions like those in (2): a category that includes metalinguistic comparatives (MCs), as well as other gradable constructions understood, intuitively, to be about ways of using language. In this paper, we develop a general framework for analyzing metagradability according to which these constructions all serve to express speakers' relative commitments to different linguistic interpretations. In this, we expand on our account in Rudolph & Kocurek 2020, which applied only to MCs.

Our approach involves an important change in perspective from previous related literature. Discussion of MCs originally grew out of studies of the grammar of comparative constructions (Bresnan 1973, McCawley 1998, Huddleston & Pullum 2002). While some recent theorists provide semantic accounts of MCs situated within the literature on gradability (e.g., Giannakidou & Yoon 2011, Giannakidou & Stavrou 2009, Morzycki 2011, Wellwood 2014, 2019), the focus has still overwhelmingly been on the comparative. The neglect of other forms of metalinguistic gradability comes out starkly in Morzycki's (2021) survey of gradable adjectives and degree expressions, where MCs are treated as an "exotic" type of comparative, and substantive discussion of other gradable constructions deals only with gradable adjectives. For us, MCs are just one example of metagradability, along a whole parallel track of such constructions. As we'll see, an examination of metagradability reveals semantic puzzles that go unnoticed if one focuses only on comparatives.

We present a general framework, **semantic expressivism**, for modeling communication not only about descriptive facts, but also about ways of using language. This view holds that, in making assertions, speakers express their semantic commitments (i.e., their plans for how to interpret linguistic expressions) in addition to their factual commitments. This view is motivated independently of metagradibility by so-called "metalinguistic" (or what we will later call "interpretive") uses of ordinary predications (Barker 2013, Kocurek et al. 2020, Mena 2023). For instance, consider an assertion of *Pluto is a planet* in a context where speakers are debating how to define *planet*. This assertion need not communicate factual information; all of that can be common ground. Instead, it expresses a commitment about how to interpret the language.

Communication with metagradable constructions, however, requires us to recognize that speakers hold more nuanced attitudes towards language than simply accepting or rejecting interpretations. Commitments to interpretations must also come in varying strengths. This is analogous to how an agent's doxastic attitudes are not exhausted by their full beliefs but also include credences. We develop a neo-Stalnakerian theory of communication that takes the conversational common ground to include rankings of linguistic interpretations. Assertions of metagradable constructions express speakers' commitments regarding such rankings.

The paper is structured as follows. In Section 2, we give an overview of data involving metagradability, highlighting features that distinguish it from ordinary gradability. In Section 3, we present the semantic expressivist framework — the approach we believe can best account for communication with metagradable assertions. In Section 4, we present our basic semantic analysis of metalinguistic comparatives and equatives. In Section 5, we compare our approach to some previous ones. In Section 6, we extend the basic semantics to other metagradable constructions, like degree modifications and conditionals. We close in Section 7 with some avenues for future research.

2 Data

In this paper, we discuss four main types of metalinguistic gradable constructions:

(3) a. Ann is more a linguist than a philosopher. *comparative*
b. Ann is (exactly) as much a linguist as a philosopher. *equative*
c. Ann is very much/sorta/mostly a linguist. *modifications*
d. If anyone is a linguist, Ann is. *conditional*

In this section, we present some key data points about these constructions, focusing mainly on the comparative and equative. More data about metalinguistic modifications and conditionals will be introduced in Section 6.

Left out of (3) is one common type of gradable construction: the superlative. Superlative constructions are more marginal in the metalinguistic case compared to the ordinary gradable one:

(4) Ann is the smartest in the class. *ordinary*

(5) ??Ann is a linguist the most. *metalinguistic*

Although we arguably do find some metalinguistic superlatives in the wild,[1] it is more natural to express metalinguistic superlative meanings with a quantified comparative (*more than anyone else*) or a conditional, as in (3d). We will discuss these constructions in Sections 6.2–6.3.

2.1 Morphosyntax

Morphosyntactic markers support metalinguistic gradability as a distinct category. Unlike ordinary gradability, metagradable constructions are flexible in the syntactic categories of their constituents. This is noted in the literature on metalinguistic comparatives (MCs), with examples like the following (Morzycki 2011: 2.3; see also McCawley 1998, Huddleston & Pullum 2002).

(6) a. Laura is more [$_{\text{DP}}$ a syntactician] than [$_{\text{DP}}$ a semanticist].
b. Harriet more [$_{\text{VP}}$ stumbled into a solution] than [$_{\text{VP}}$ sought it].
c. George is more [$_{\text{AP}}$ afraid of spiders] than [$_{\text{PP}}$ in love with them].

The same flexibility is present in metalinguistic equatives and modifications:

(7) a. George is as much afraid of spiders as in love with them.
b. The dog is very much sitting on your head.

Our analysis in Sections 4 and 6 will accommodate this syntactic flexibility. There are other morphosyntactic markers of metagradability we will not explain, as we are primarily concerned with the semantics of these constructions. Still, we note some below to further illustrate the distinctiveness of metagradability.

Even when metagradable constructions involve ordinary gradable adjectives, they are still morphosyntactically distinct. Metalinguistic comparatives, unlike ordinary ones, cannot use the synthetic *-er* comparative form, but must instead use the analytic form with *more* (Bresnan 1973, Huddleston & Pullum 2002, Embick 2007).

(8) a. Al is wiser than Sam. *ordinary*
b. *Al is wiser than clever. **metalinguistic*
c. Al is more wise than clever. *metalinguistic*

Although (8c) involves ordinary gradable adjectives, it is a metalinguistic comparative. It means, roughly, that Al is more aptly described as *wise* than *clever*.

1 For example, many sentences like (i) can be found on social media.

(i) Of all the things that never happened, this never happened the most.

The placement of degree expressions is also more flexible in metagradable constructions (Embick 2007):

(9)
a.	Al is more intelligent than Sam.	*ordinary*
b.	*Al is intelligent more than Sam.	**ordinary*
c.	Your problems are more financial than legal.	*metalinguistic*
d.	Your problems are financial more than legal.	*metalinguistic*

The same holds for *as much*, with both of the following metalinguistic constructions being acceptable:

(10)
a. Your problems are as much financial as legal.
b. Your problems are financial as much as legal.

Cross-linguistic observations further support the distinctiveness of metagradability. Many languages use different morphemes for MCs and ordinary comparatives. In Greek, *apoti* 'than' can be used in either metalinguistic or ordinary comparatives, but *para*, also glossed 'than', can only be used metalinguistically (Giannakidou & Stavrou 2009). In Korean, MCs use *kopota*, which can be morphologically analyzed as a combination of *ki* 'saying', and *pota* 'than', whereas ordinary comparatives simply use *pota* (Giannakidou & Yoon 2011). Japanese has a metalinguistic comparative marker, *iu-yori*, which can also be glossed as 'say-than' (Sawada 2010: p. 225–26). In Russian, MCs also have distinctive morphosyntax (Zevakhina et al. 2017: sec. 4). Though we are focusing on English, this cross-linguistic evidence supports the distinctiveness of MCs as compared with ordinary comparatives. Whether there is additional cross-linguistic evidence regarding other metagradable constructions remains an open question.

2.2 Nongradable arguments

Metagradable constructions are also semantically flexible in that their arguments need not be gradable. Words like *financial*, *wooden*, and *forbidden*, are classic examples of nongradable adjectives, yet they easily appear in metagradable constructions:

(11)
a. Your problems are more financial than legal. (McCawley 1998)
b. This chair is more wooden than metallic. (Morzycki 2011)
c. Taking extra Halloween candy is more discouraged than forbidden.

(12)
a. Your problems are as much financial as legal.
b. This chair is sorta wooden.
c. Taking extra Halloween candy is very much forbidden.

Note, this is compatible with such words being "vague" in that they admit of borderline cases. While vagueness and gradability are clearly related, it is generally acknowledged that they do not always go together (Kennedy 2007, Burnett 2016, Morzycki 2021).

2.3 Role of the positive form

A distinguishing feature of metagradable constructions is the role of "positive form" sentences in their semantic evaluation. Compare, for instance, the ordinary comparative in (13a) with the MC in (13b) (Wellwood 2014: 222ff; Wellwood 2019: 136ff).

(13) a. Box A is taller than Box B.
b. Box A is more tall than Box B.

The truth of (13a) depends only on the relative heights of the two boxes. However, to assess (13b), one must assess the appropriateness of the positive form claims *Box A is tall* and *Box B is tall*. The truth values of (13a) and (13b) intuitively come apart in a situation where Box A is only slightly taller than Box B but both of them are significantly taller than the other boxes under discussion. Given this, while (13a) is true, (13b) seems false since both boxes seem to have equal claim to being tall.

The contrast also comes out with the following:

(14) a. Box A is taller than it is wide.
b. Box A is more tall than it is wide.

With the synthetic *-er* form, (14a) can only be heard as an ordinary comparative. On the other hand, (14b) has a reading as an MC. Their truth values come apart in a case where Box A's height is greater than its width (so (14a) is true), but Box A's height is very similar to the heights of the other boxes under discussion, while its width is significantly greater than those of the other boxes (so (14b) is, intuitively, false).

2.4 Paraphrasing

Many metagradable constructions can be equivalently paraphrased using *that*-clauses as constituents (even if the result can be stilted):

(15) a. Laura is more a syntactician than a semanticist.
≈ It's more the case that Laura is a syntactician than it is the case that she is a semanticist.

b. George is as much afraid of spiders as in love with them.
≈ It's as much the case that George is afraid of spiders as it is the case that he's in love with them.

c. The dog is very much sitting on your head.
≈ It's very much the case that the dog is sitting on your head.

As we discuss more in Section 4.1, this suggests we can think of metalinguistic degree expressions as taking sentential arguments at LF. Indeed, some MCs, such as (16) and (17), can only be stated using sentential arguments.[2]

(16) The Red Sox are more legitimate than the Orioles are fraudulent. (Kennedy 1997, 2001)

(17) Esme is more beautiful than Einstein is intelligent. (Bale 2008)

By contrast, we cannot equivalently paraphrase ordinary gradable constructions in this way. Related to the observation in Section 2.3, the following are not equivalent.

(18) a. Box A is taller than Box B.
b. It's more the case that Box A is tall than that Box B is tall.

The same goes with modified sentences:

(19) a. Ann is very tall.
b. It's very much the case that Ann is tall.

Ann can be a clear case of being tall, making (19b) true, but still not count as very tall, making (19a) false.

2.5 A puzzle about entailment patterns

Metalinguistic comparatives and equatives display some puzzling entailment patterns. First, note that MCs share entailment patterns with comparatives with relative gradable adjectives. Relative gradable adjectives, like *tall*, can have a standard anywhere on the scale (Kennedy & McNally 2005, Kennedy 2007, Rotstein & Winter 2004). Given this, neither of the following entailments holds:

2 While some authors distinguish MCs from these other potentially nonstandard types of comparatives (Kennedy's "comparisons of deviation" and Bale's "indirect comparisons"), we follow Wellwood (2014, 2019) in taking these all to belong to a single category of metalinguistic comparatives (her "categorizing comparatives").

(20) Ann is taller than Ben. *relative gradable adj.*
⇏ Ben is not tall.
⇏ Ann is tall.

This contrasts with absolute gradable adjectives, which have standards at one end of the scale. In such cases, at least one of the entailments holds.

(21) The table is flatter than the floor. *absolute (max) gradable adj.*
⇒ The floor is not flat.

(22) The stick is more bent than the rod. *absolute (min) gradable adj.*
⇒ The stick is bent.

In this respect, MCs pattern with relative gradable adjectives:

(23) Ann is more a linguist than a philosopher. *metalinguistic*
⇏ Ann is not a philosopher.
⇏ Ann is a linguist.

Imagine Ann holds a PhD in philosophy and is employed in a philosophy department but conducts research mostly in linguistics. Then, Ann might be more a linguist than a philosopher, but she is also a philosopher (she could be both). Conversely, imagine Ann is a shoddy researcher overall but is slightly more accomplished in linguistics than philosophy. In that case, she might be more a linguist than a philosopher but fail to be a linguist (she could be neither).

We will use $\succ$ for the metalinguistic *more than*. So $A \succ B$ symbolizes "It is more the case that A than that B". (Sentences of the form "a is more F than G" are symbolized as $Fa \succ Ga$. More on this in Section 4.1.) With this, we can state the observation in (23) more generally:

Observation 1. $A \succ B, A \wedge B \nRightarrow \bot$ and $A \succ B, \neg A \wedge \neg B \nRightarrow \bot$. (see (23))

That is: MCs are consistent with the truth of both constituents and with the falsity of both (see also Domosławski 2024).[3]

Still, MCs are not logically independent of their arguments. For example, the following inferences seem good:

(24) Ann is more a linguist than a philosopher. *metalinguistic*
⇒ If Ann is a philosopher, she is a linguist.

(25) Ann is a linguist but not a philosopher.
⇒ Ann is more a linguist than a philosopher.

3 Interestingly, this seems to mark an empirical difference between MCs with *more* and some other types of MCs, like those with German *eher* (Umbach & Solt 2022: 73–75).

This mirrors what we find with ordinary comparatives:

(26) Ann is taller than Ben. *ordinary*
⇒ If Ben is tall, Ann is tall.

(27) Ann is tall but Ben is not.
⇒ Ann is taller than Ben.

This suggests two further observations.

Observation 2. $A \succ B, B \Rightarrow A$. (see (24))

Observation 3. $A, \neg B \Rightarrow A \succ B$. (see (25))

Observation 2 says if B is true and it's more that A than that B, then A is true. Observation 3 says if A is true and B is false, then it's more that A than that B.

Let's now add metalinguistic equatives (MEs) to the mix. The relationship between MCs and MEs mirrors that between ordinary comparatives and equatives. In particular, comparatives and equatives are incompatible:

(28) #Ann is taller than Ben, and she's (exactly) as tall as Ben.

(29) #Ann is more a linguist than a philosopher, and she's (exactly) as much a linguist as a philosopher.

Note, while *as much as*, without any qualification, often conveys the force of an equative (*exactly as much as*), this seems to be a pragmatic implicature. For instance, the following sounds fine (cf. Schwarzschild 2008: 315 on ordinary gradable adjectives):

(30) Ann is as much a linguist as a philosopher — in fact, much more so.

However, when we make the equative reading explicit, the result is marked:

(31) #Ann is exactly as much a linguist as a philosopher — in fact, much more so.

We'll use $\approx$ for the metalinguistic equative. So $A \approx B$ symbolizes "It is exactly as much the case that A as it is the case that B". The above observations can thus be stated generally as follows:

Observation 4. $A \approx B \Rightarrow \neg(A \succ B) \wedge \neg(B \succ A)$. (see (29))

That is, metalinguistic equatives contradict MCs with the same constituents.

Two corollaries about MEs: First, given Observations 1 and 4, MEs are compatible with the truth (and with the falsity) of their constituents: $A \wedge B \not\Rightarrow A \approx B$ and $\neg A \wedge \neg B \not\Rightarrow A \approx B$. Ann could be both a linguist and a philosopher but not (exactly)

as much a linguist as a philosopher. Likewise, she could be neither, but still be one more than the other. Second, given Observations 3 and 4, MEs together with one of their constituents entail the other: $A \approx B, A \Rightarrow B$. For example, if Ann is (exactly) as much a linguist as a philosopher and she's a linguist, then she's also a philosopher.

While we take these observations to be reasonable, it turns out that there is a tension between Observations 3 and 4. Consider the following ME:

(32) Pluto is (exactly) as much a planet as not.

This seems coherent. One could imagine a speaker uttering it in a context where the reasons for considering Pluto a planet are about as strong as those against.[4] More generally:

Observation 5. $A \approx \neg A \not\Rightarrow \bot$. (see (32))

That is, it's consistent for it to be the case that A exactly as much as it's the case that not.

However, Observations 3–5 are classically incompatible.[5] To see the problem intuitively, note that while (32) is acceptable, (33a–b) are marked:

(33) a. ??Pluto is a planet and it is (exactly) as much a planet as not.
b. ??Pluto is not a planet and it is (exactly) as much a planet as not.

So while $A \approx \neg A$ seems consistent, in line with Observation 5, it also seems inconsistent with A and with $\neg A$, as Observations 3 and 4 predict. Yet in classical logic, if B is inconsistent with A and with $\neg A$, then B is inconsistent.

We thus face a choice: either give up one of Observations 3–5 and attempt to explain away their motivating data or give up classical logic.[6] To foreshadow, we adopt the latter in Section 4. We can maintain Observations 3–5 if we adopt a nonclassical notion of entailment akin to "informational entailment" in analyses of epistemic modals (Yalcin 2007).

4 Note, though, that our account in Sections 3–4 will not require the commitments communicated with metagradable constructions to be reasons-based.

5 Proof: By Observation 3 (where $B = \neg A$), $A \Rightarrow A \succ \neg A$ and $\neg A \Rightarrow \neg A \succ A$. Since $\Rightarrow A \vee \neg A$, we obtain $\Rightarrow (A \succ \neg A) \vee (\neg A \succ A)$ via proof by cases. Yet by Observation 4, plus De Morgan's laws, $A \approx \neg A \Rightarrow \neg((A \succ \neg A) \vee (\neg A \succ A))$. So $A \approx \neg A \Rightarrow \bot$, contrary to Observation 5.

6 Interestingly, this choice does not arise for ordinary gradable constructions, since there's no analogue of Observation 5 for ordinary equatives, which only take the form "a is as F as b".

3 Communication

What do speakers communicate when they assert metagradable constructions? In this section, we show how to generalize a traditional Stalnakerian theory of communication to capture the communicative effects of metagradability.

3.1 Stalnaker's theory

On the Stalnakerian picture (e.g., Stalnaker 1999), the **common ground** of a conversation is the set of propositions that the speakers mutually accept (at least for the purposes of the conversation). Propositions are modeled as sets of worlds. A speaker accepts a given proposition just in case it is compatible with every world left open by what they accept. We can model the common ground (also known as the "context set") as a set of worlds too: the worlds left open by everything the conversational participants mutually accept.

The content of an assertion is also modeled as a set of worlds: the worlds where the assertion is true. The effect of an assertion is to (propose to) rule out of the common ground every world where the content asserted is not true. That is, if the assertion is accepted by the other conversational participants, the common ground will update by intersecting with the content of the assertion. This captures the idea that assertion adds information to the common ground: it rules out possibilities for how the world could be.

3.2 Interpretations

The Stalnakerian picture has trouble accounting for cases where what is communicated concerns the linguistic interpretation that the speaker adopts rather than factual information. Consider, for instance, an assertion of (34) in a context where all the relevant physical characteristics of Pluto (its size, shape, orbit, etc.) are common ground (Kocurek et al. 2020).

(34) Pluto is a planet.

Here, the speaker communicates their adherence to the folk definition of *planet*, rejected by the International Astronomical Union in 2006. Assuming it's commonly understood that the speaker accepts the folk definition, the set of worlds they express with (34) is already common ground. The Stalnakerian framework thus predicts that the communicative effect of the speaker asserting (34) is trivial. This seems incorrect: the speaker is, in some sense, communicating their commitment to an interpretation of *planet* on which Pluto falls in its extension at the actual world. Call this an **interpretive use** of the sentence.

To capture the communicative effects of interpretive uses of sentences like (34), the common ground of a conversation should include not only speakers' shared factual assumptions but also their assumptions about how to interpret language. This can be achieved through a simple extension of the Stalnakerian picture where we replace *worlds*, wherever they occur in the theory, with *interpretation-world pairs*, $\langle i, w \rangle$.

This move takes inspiration from Barker (2002), as well as MacFarlane (2016), on gradable adjectives. Barker holds that assertions with vague adjectives impose constraints on the *delineation*-world pairs left open in the common ground, where a delineation sets the threshold for the application of the positive forms of these adjectives. Whereas Barker takes the delineation to be fixed by context, MacFarlane adopts an expressivist view: there is no antecedently-fixed "correct" delineation in a context. Instead, the function of vague assertions is to express one's commitments regarding delineations and thereby to negotiate which delineations to leave open in the conversation.

Where Barker introduced *delineations* for gradable adjectives, we appeal to *interpretations*, which fix the meaning of all linguistic expressions (see also Krifka 2012, Umbach & Solt 2022, Mena 2023). Like MacFarlane, we adopt an expressivist account. There is no single interpretation fixed by context. With assertions of sentences like (34), speakers express their interpretive commitments. For this reason, we call our approach **semantic expressivism**.

According to semantic expressivism, an interpretive assertion expresses a speaker's commitment to a way of using language without explicitly stating (as part of the truth-conditional content) that they have such commitments. Compare this with another example of the assertion-expression distinction: just as a speaker may use (35a) to express what they would assert with (35b), so too, a speaker may use (36a) to express what they would assert with (36b).

(35) a. It's raining.
b. I believe that it's raining.

(36) a. Pluto is a planet.
b. As I interpret the word *planet*, Pluto is a planet.

While (36a) is used to express the speaker's interpretive commitments regarding the term *planet*, (36b) is a factual statement about how the speaker does interpret the term.[7] This means that if speakers disagree over (36b), their disagreement is not faultless. However, disagreement over (36a) could be faultless. This is because there

7 Pragmatically, however, the audience would naturally assume that in asserting (36b), the speaker wants others in the conversation to follow their interpretation. The same is true for *believes* (e.g., *I believe everyone deserves universal basic income*).

is not one "true" interpretation for the word *planet*, on our view. Instead, speakers negotiate what to mean by *planet*, engaging in metalinguistic negotiation (Plunkett & Sundell 2013, Kocurek 2023, Rudolph 2023).

By contrast, disagreement over either (35a) or (35b) would not be faultless. Disagreement over (35b) concerns what the speaker believes, which is a factual matter. Disagreement over (35a) (in most contexts) comes down to speakers' factual commitments, which have an objective standard of correctness. Interpretive and factual commitments have different directions of fit.

We can model interpretations formally as functions from linguistic expressions to intensions (more on this in Section 4). Contents are now modeled as sets of interpretation-world pairs $\langle i, w \rangle$. A speaker accepts a content just in case it's compatible with all their factual and interpretive commitments. The common ground is modeled as the set of $\langle i, w \rangle$ pairs left open by everything the speakers mutually assume about the world and about how to interpret language.

An assertion of (36a) is a proposal to remove from the common ground any interpretation-world pairs $\langle i, w \rangle$ where Pluto is not in the extension of *planet* at w according to i. In the given context, where the worldly facts are already common ground, the effect of asserting (36a) (if accepted) is to remove from the common ground all interpretations on which Pluto does not count as a planet.

This appeal to interpretations is further supported by data suggesting that they are shiftable parameters of indices. Consider the following conditional:

(37) If Pluto were a planet, there would be dozens of planets in our solar system. (Kocurek et al. 2020: 5)

This conditional is not naturally interpreted as considering what would follow if, e.g., Pluto's orbit were different, but rather what would follow under a different interpretation of *planet*. Such "counterconventionals" (Einheuser 2006) motivate introducing the interpretation parameter in the index (as we will do in Section 4), which in turn suggests interpretations play a role in the analysis of common ground.[8,9]

8 Einheuser (2006) refers to *character*-shifting expressions as "c-monsters". These are distinct from what Kaplan (1977: 499) calls "monsters", which shift the *context*. For discussion of monsters in natural language, see Schlenker 2003, Anand & Nevins 2004, Santorio 2012, Rabern 2012, Yli-Vakkuri 2013, Rabern & Ball 2019, Deal 2019.

9 Could Stalnaker's two-dimensional framework (e.g., Stalnaker 1978) work for our purposes? On this approach, the diagonal proposition expressed by *Pluto is a planet* is that the referent of *Pluto* is in the extension of *planet*. One might think that this is a reasonable candidate for what is communicated by (34). However, this approach assumes the world settles the meaning of *planet* — something we do not believe is realistic or desirable. For related discussion about the threshold for vague adjectives, see MacFarlane 2020a: 1.6.

3.3 Semantic orderings

Metagradability motivates a further extension of Stalnaker's framework beyond interpretation-world pairs. Consider:

(38) Pluto is more an asteroid than a planet.

In asserting (38), the speaker does not need to rule out any interpretations. They don't need to accept an interpretation on which Pluto is an asteroid; nor do they need to reject one on which it is a planet (they may think that something can be both). Instead, they express a comparative commitment: they rule out certain ways of *ordering* interpretations.

To capture the communicative effects of metagradable assertions, like (38), it's not enough for the common ground to distinguish between linguistic interpretations that are left open by the speakers' commitments and those that are ruled out. The common ground should also include speakers' shared assumptions about how to *rank* interpretations. Correspondingly, speakers' mental states should be characterized not only by which interpretations they leave open, but by their relative commitments to different interpretive choices.

This is analogous to the relationship between belief and credence. Agents don't just believe some propositions and fail to believe others. Their doxastic attitudes are more nuanced: they have higher or lower credences in certain propositions compared with others. For instance, even if someone fails to believe that Ann is a linguist or a philosopher, they may have a higher credence in the former.

Representing doxastic states using credence, and not merely full belief, is essential for understanding behavior under uncertainty as well as for analysing probabilistic language.[10] Consider:

(39) It's more likely that Ann is a linguist than that she's a philosopher.

With (39), the speaker expresses their higher credence that Ann is a linguist than that she is a philosopher — that is, they express their comparative credences in the two propositions (without asserting that their credence in one is higher). On our proposal, metalinguistic comparatives like (38) express comparative commitments to interpretations just as likelihood claims express comparative credences.

More precisely, we propose revising the semantic expressivist picture from Section 3.2 by replacing interpretations with **semantic orderings**. We'll elaborate on these orderings in the next section. For now, we can think of semantic orderings as rankings of interpretations (allowing for ties). We thus represent the common

10 See, e.g., Yalcin 2010, Moss 2018; also Lassiter 2011, 2020, Klecha 2014 on gradability and probalistic language.

ground, as well as the contents of assertions, as sets of *ordering-world pairs*, $\langle \leqslant, w \rangle$. With an assertion of (38), the speaker expresses (but does not assert) their stronger commitment to an interpretation according to which Pluto is an asteroid than to one on which Pluto is a planet. If accepted, their assertion removes from the common ground all ordering-world pairs whose ordering lacks this feature.

The data that motivates introducing a shiftable interpretation parameter in the index similarly motivates introducing semantic orderings as a shiftable parameter. Consider:

(40) If Pluto were more a planet than an asteroid, then dozens of other objects in our solar system would be too.

This conditional is naturally interpreted as considering what would follow from a different semantic ordering rather than from a change in Pluto's physical characteristics. This suggests that conditionals can shift the semantic ordering just as they can shift interpretations, which in turn suggests they play a role in the analysis of common ground.

What does this mean for simple interpretive assertions, like (34) (*Pluto is a planet*)? We can recover interpretation-world pairs from ordering-world pairs by pairing the world with all the top-ranked interpretations. We thus define the assertoric content $|A|$ of sentence A as follows (note we have not yet defined the semantic value function $[\![\cdot]\!]^{\leqslant,i,w}$; more on this in Section 4.2):

(41) $|A|^{\leqslant,w} = 1$ iff $\forall i\colon\ \neg\exists i'(i < i') \Rightarrow [\![A]\!]^{\leqslant,i,w} = 1$.

In words: the assertoric content of A is true at an ordering-world pair iff A is true at every top-ranked interpretation.[11] A speaker accepts a content just in case it is true on all the topmost interpretations of any semantic ordering left open by the speaker's relative interpretative commitments. An assertion is a proposal to rule out of the common ground those pairs $\langle \leqslant, w \rangle$ such that $|A|^{\leqslant,w} = 0$, i.e., pairs where at least one top-ranked interpretation falsifies A. For example, an assertion of (34) rules out ordering-world pairs $\langle \leqslant, w \rangle$ where at least one interpretation ranked at the top of $\leqslant$ excludes Pluto from the extension of *planet* at w.

11 This assumes semantic orderings have maximal elements. If we want to drop this assumption, we can generalize the theory as follows: an assertion of A rules out those ordering-world pairs where every A-interpretation is ranked no higher than some $\neg A$-interpretation. In other words, to accept an assertion of A is to adopt a semantic ordering on which A is "eventually settled true".

4 Basic semantics

In this section, we provide a formal semantic analysis for metalinguistic comparatives (MCs) and metalinguistic equatives (MEs).

4.1 Syntax

We start with a simple language with names ($a_1, a_2, \ldots$), predicates ($P^n_1, P^n_2, \ldots$), boolean connectives, and a sentential metalinguistic comparative connective $\succ$ ("more… than…"). The formulas are given in Backus-Naur form as follows:

(42) $A ::= Pa_1 \ldots a_n \mid \neg A \mid (A \wedge A) \mid (A \vee A) \mid (A \supset A) \mid (A \succ A)$

Again, $A \succ B$ symbolizes "It is more the case that A than it is the case that B", or "A more than B". MCs with nonsentential constituents can be regimented in this language, too. For example, sentences of the form "a is more F than G" are symbolized as $Fa \succ Ga$:

(43) Ann is more a linguist than a philosopher.
≈ It is more the case that Ann is a linguist than that she is a philosopher.
≈ Ann is a linguist more than she is a philosopher.

$$Linguist(ann) \succ Philosopher(ann)$$

We follow Giannakidou & Yoon (2011) and Wellwood (2019), who postulate that the metalinguistic *more than* takes full sentences as arguments at LF. In cases where the MC does not take sentential complements at the surface, Giannakidou & Yoon (2011) suggest the *than*-clause contains elided material, as in:

(44) Ann is more a linguist than ~~Ann is~~ a philosopher.

This approach is suggested by the fact that MCs are generally paraphraseable using sentential constitutents (Section 2.4). It also aligns with standard views about ordinary comparatives (e.g., Bresnan 1973, Cresswell 1976, Chomsky 1977, Heim 2000, Bhatt & Pancheva 2004). For example, it's often assumed that the ordinary comparative below contains ellipsis:

(45) Ann is more liberal than Ben ~~is liberal~~.

Additionally, this approach accounts for the syntactic flexibility of MCs (Section 2.1). Even MCs with arguments from different syntactic categories can be accommodated:

(46) George is more [$_{\text{AP}}$ afraid of spiders] than ~~George is~~ [$_{\text{PP}}$ in love with them].

$$Afraid(george, spiders) \succ Loves(george, spiders)$$

Thus, there's no loss of generality in treating the metalinguistic *more* as a sentential operator.[12]

4.2 Semantics

Given a background set of worlds W and domain of objects D, an **interpretation** is a function i where:

(i) $i(a)\colon W \to D$ for each name a

(ii) $i(P^n)\colon W \to \wp(D^n)$ for each n-place predicate P^n.

A **semantic ordering** is a total preorder $\leqslant$ on a set of interpretations:

- *reflexivity:* $i \leqslant i$
- *transitivity:* if $i_1 \leqslant i_2 \leqslant i_3$, then $i_1 \leqslant i_3$
- *totality:* either $i \leqslant j$ or $j \leqslant i$.

We can think of semantic orderings as linear orderings of sets of interpretations (Figure 1). This ordering represents a potential speaker's strength of interpretive commitments: $i \leqslant j$ iff the speaker is at least as strongly committed to adopting j as they are to adopting i.

Truth is evaluated relative to a world w, an interpretation i, and a semantic ordering $\leqslant$. The semantics for the atomic case is given as follows (booleans work as expected):

(47) $\quad [\![P^n a_1 \ldots a_n]\!]^{\leqslant,i,w} = 1 \quad \text{iff} \quad \langle i(a_1)(w), \ldots, i(a_n)(w)\rangle \in i(P^n)(w).$

For example, *Ann is a linguist* is true at $\langle \leqslant, i, w\rangle$ just in case the individual denoted by the name *Ann* according to i at w is in the extension of the predicate *linguist* according to i at w. (Note, $\leqslant$ does no work in this case.)

Metalinguistic comparatives We propose to analyze MCs as follows (where $i < j$ iff $i \leqslant j$ and $j \not\leqslant i$):[13]

(48) $\quad [\![A > B]\!]^{\leqslant,i,w} = 1 \quad \text{iff} \quad \exists i' \leqslant i\colon$

(i) $\quad [\![A \wedge \neg B]\!]^{\leqslant,i',w} = 1$

(ii) $\quad \forall i'' \leqslant i\colon\ [\![B \wedge \neg A]\!]^{\leqslant,i'',w} = 1 \Rightarrow i'' < i'.$

12 Morzycki (2011: 69) presents an alternative, namely to postulate ambiguity in metalinguistic *more*: for each type of argument MCs can take, there is a separate homonymous *more*. For simplicity, we set this aside and work with the sentential operator.

13 This semantics for MCs is based on Rudolph & Kocurek 2020, with some improvements.

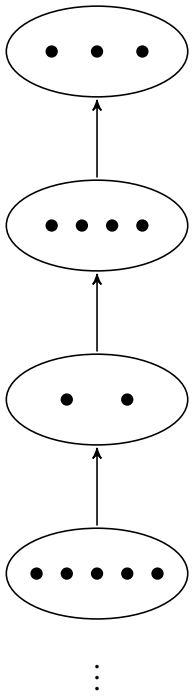

Figure 1 Illustration of a semantic ordering. Dots within a circle represent interpretations that are equally ranked according to the preorder.

In words, A more than B iff there's an $(A \wedge \neg B)$-interpretation that's ranked higher than any $(B \wedge \neg A)$-interpretation. Thus, in asserting an MC like (49), the speaker expresses their stronger commitment to an interpretation on which Ann is a linguist (and not a philosopher) than one on which Ann is a philosopher (and not a linguist).

(49) Ann is more a linguist than a philosopher.

Several comments about this semantics are in order. First, the semantics for $A \succ B$ compares $(A \wedge \neg B)$-interpretations with $(B \wedge \neg A)$-interpretations. Why not simply compare A-interpretations with B-interpretations? The reason is that, per Observation 1, $A \succ B$ may be true even if both A and B are true (and thus, no A-interpretation is ranked higher than every B-interpretation). For example, (49) is consistent with Ann being both a linguist and a philosopher.[14]

Second, the semantics for $\succ$ only compares interpretations that are ranked no higher than the interpretation of the index. This restriction helps avoid awkward sentences like the following (cf. Observation 2):

14 Our analysis in Rudolph & Kocurek 2020 failed to capture this; see Domosławski 2024 for discussion.

(50) ??Pluto is more a planet than not, but Pluto is not a planet.

Because MCs only compare interpretations ranked no higher than the interpretation of the index, (50) is unsatisfiable: if Pluto is not a planet on i, there can't be a planet-interpretation that is both higher than any not-planet-interpretation and no higher than i.

Third, semantic orderings only rank a *set* of interpretations. They do not necessarily rank every conceivable interpretation. This allows us to predict the oddness of sentences like:

(51) ??Ann is more a semanticist than a linguist.

For most speakers, there are no remotely plausible interpretations on which someone is a semanticist but not a linguist. That is, most speakers do not rank interpretations violating "analytic" truths like *Every semanticist is a linguist*. Thus, without further context, (51) sounds incoherent.

That said, nothing stops speakers from ranking such interpretations in some contexts. One can imagine the following being asserted by a linguist who doesn't want to prioritize hiring a semanticist:

(52) Semanticists are more philosophers than linguists.

Even "analytic" truths need not always be held fixed across ranked interpretations.

Lastly, our semantics for MCs correctly predicts the role of the positive form, noted in Section 2.3 (Wellwood 2014, 2019). Recall that while (14a) must be interpreted as an ordinary comparative, (14b) has a reading as an MC.

(14) a. Box A is taller than it is wide.
b. Box A is more tall than it is wide.

On the standard semantics for gradable adjectives, the truth of (14a) depends only on the height and width of Box A. On our semantics for MCs, however, the truth of (14b) depends on the relative rankings of interpretations that make *Box A is tall* (and *Box A is not wide*) true as compared with interpretations that make *Box A is wide* (and *Box A is not tall*) true.

Metalinguistic equatives We can define a metalinguistic equative operator $\approx$ as follows:

(53) $(A \approx B) \quad := \quad \neg(A > B) \wedge \neg(B > A).$

We can read $A \approx B$ as "It's (exactly) as much the case that A as it is the case that B" or "A (exactly) as much as B". The truth conditions are as follows:

(54) $[\![A \approx B]\!]^{\leqslant,i,w} = 1$ iff $\forall i' \leqslant i$:
(i) if $[\![A \wedge \neg B]\!]^{\leqslant,i',w} = 1$, then $\exists i'' \leqslant i$: $[\![B \wedge \neg A]\!]^{\leqslant,i'',w} = 1$ & $i' \leqslant i''$
(ii) if $[\![B \wedge \neg A]\!]^{\leqslant,i',w} = 1$, then $\exists i'' \leqslant i$: $[\![A \wedge \neg B]\!]^{\leqslant,i'',w} = 1$ & $i' \leqslant i''$.

In words, A as much as B iff for every $(A \wedge \neg B)$-interpretation, there's a $(B \wedge \neg A)$-interpretation that's ranked at least as high and vice versa. In most cases, this occurs when the topmost $(A \wedge \neg B)$-interpretation is ranked equally high as the topmost $(B \wedge \neg A)$-interpretation.[15]

On this semantics for MEs, the truth conditions for $A \approx \neg A$ reduce to the following (where $j \equiv k$ iff $j \leqslant k$ and $k \leqslant j$):

(55) $[\![A \approx \neg A]\!]^{\leqslant,i,w} = 1$ iff $\exists i' \equiv i$: $[\![A]\!]^{\leqslant,i',w} \neq [\![A]\!]^{\leqslant,i,w}$.

In other words, $A \approx \neg A$ is true iff some top-ranked interpretations make A true while others make A false. Put loosely, *Pluto is (exactly) as much a planet as not* communicates that Pluto is a "borderline" planet — that is, the speaker's interpretive commitments do not settle whether *planet* applies to Pluto. Already, then, we can see why *Pluto is (not) a planet and it is (exactly) as much a planet as not* sounds incoherent: saying *Pluto is a planet* seems to imply it's not a borderline case, whereas *Pluto is (exactly) as much a planet as not* does. We'll return to this in Section 4.4.

Weak metalinguistic comparatives We can introduce a "weak" metalinguistic comparative $\succcurlyeq$ as follows:

(56) $(A \succcurlyeq B) \quad := \quad (A \succ B) \vee (A \approx B)$.

We can read $A \succcurlyeq B$ as "It is at least as much the case that A as it is the case that B" or "A at least as much as B"). Its truth conditions reduce to the following:

(57) $[\![A \succcurlyeq B]\!]^{\leqslant,i,w} = 1$ iff $\forall i' \leqslant i$:
if $[\![B \wedge \neg A]\!]^{\leqslant,i',w} = 1$, then $\exists i'' \leqslant i$: $[\![A \wedge \neg B]\!]^{\leqslant,i'',w} = 1$ & $i' \leqslant i''$.

In effect, the semantics for $A \succcurlyeq B$ is the second clause of the semantics for $\approx$. Weak MCs will play a prominent role in Section 6.3.

4.3 Remarks

A degree-theoretic formulation It is common to analyze ordinary comparatives using degrees on a linear scale (Cresswell 1976, von Stechow 1984, Kennedy 2007,

15 Less commonly, there may be no "topmost" $(A \wedge \neg B)$- and $(B \wedge \neg A)$-interpretations, but instead an infinite ascending chain of alternating $(A \wedge \neg B)$- and $(B \wedge \neg A)$-interpretations.

Kennedy & McNally 2005, among many others). Several compositional semantic analyses of MCs also employ degrees (Bale 2008, Morzycki 2011, Wellwood 2019). As our main concern is with the truth conditions of metalinguistic gradability, we aim to remain largely neutral on issues of compositionality. But although we have not taken a degree-theoretic approach here, there is an equivalent degree-theoretic formulation of our semantics. Adopting such a formulation would allow us to incorporate the compositional work on MCs from other theorists into our framework.

The key is to take the "metalinguistic degree" of a sentence A (relative to an index $\langle \leqslant, i, w \rangle$) to be a *set of sets of interpretations*. The details are given elsewhere (Kocurek 2024). Essentially, where $[\![B]\!]_i^{\leqslant,w} = \{j \leqslant i \mid [\![B]\!]^{\leqslant,j,w} = 1\}$:

(58) $\quad \deg(A) = \{[\![B]\!]_i^{\leqslant,w} \mid [\![A \approx B]\!]^{\leqslant,i,w} = 1\}.$

This is effectively the $\approx$-equivalence class of $[\![A]\!]_i^{\leqslant,w}$, i.e., the set of interpretations (ranked no higher than i) at which A is true. We can then define an ordering $\sqsupset$ on degrees so that:

(59) $\quad [\![A > B]\!]^{\leqslant,i,w} = 1 \quad \text{iff} \quad \deg(A) \sqsupset \deg(B)$
$\quad\quad [\![A \approx B]\!]^{\leqslant,i,w} = 1 \quad \text{iff} \quad \deg(A) = \deg(B).$

Thus, much of the compositional machinery developed in degree-theoretic accounts of MCs can be adapted to our semantics by replacing their notion of degree with the one suggested here.

These metalinguistic degrees are not "degrees of truth". Even if a sentence is true, it may not have the maximal metalinguistic degree $\deg(\top) = \{[\![\top]\!]_i^{\leqslant,w}\}$, which requires truth at all ranked interpretations. Put loosely, metalinguistic degrees measure not just *closeness* to truth but also the *robustness* of truth across reinterpretations. This will allow us to analyze degree modifiers like *very much*, which convey something stronger than that its argument is true (Section 6.1).

Totality The current semantics for MCs and MEs assumes semantic orderings are total, meaning any two interpretations are comparable: either $i \leqslant j$ or $j \leqslant i$. This has the consequence that at any index, one of the following three sentences must be true:

(60) a. Ann is more wise than tall.
b. Ann is more tall than wise.
c. Ann is (exactly) as tall as wise.

We are unsure whether this prediction is desirable.[16] On the one hand, all three claims seem odd since being tall seems unrelated to being wise. However, this doesn't mean

16 See Dorr et al. 2023 for a defense of totality for comparative expressions generally.

they're jointly inconsistent. Contrast (60), for example, with the disjunction in (61), which to some ears might sound tautologous.

(61) Ann is either more wise than tall, more tall than wise, or (exactly) as tall as wise.

Our semantics can be generalized to accommodate nontotal orderings (Kocurek 2024). To simplify the formalism, however, we proceed here under the assumption of totality. None of the entailment predictions below depend on this choice.

On *metalinguistic* Following much previous literature, we have adopted the label "metalinguistic" for the phenomenon under discussion. Admittedly, this label for MCs and MEs is appropriate in some ways but potentially misleading in others. These constructions are "metalinguistic" in the sense that they express speakers' linguistic commitments. But they are not "metalinguistic" in the sense of being "about" language, nor in the sense of operating outside linguistic theorizing.[17]

The sense in which metagradable constructions are "metalinguistic" on our view differs from the sense in which, according to Barker (2002), assertions with gradable adjectives can be "metalinguistic". Barker distinguishes different potential uses of a single sentence. He calls an assertion of, say, *Feynman is tall* "metalinguistic" if it rules out delineations for the interpretation of *tall* from the common ground, while he calls it "descriptive" if it rules out possibilities regarding Feynman's height.

An analogous distinction can be made in our framework between uses of, say, *Pluto is a planet*, depending on whether it rules out interpretations or worlds from the common ground. Metalinguistic comparatives and other metagradable constructions are, however, "metalinguistic" in a deeper sense than this: their truth conditions involve shifting the interpretations used to evaluate constituent expressions. While there is clearly some connection between the two notions, we reserve the label "metalinguistic" for the latter. We use the label "interpretive" for uses of sentences that rule out interpretations.

4.4 Two notions of entailment

There are two natural ways to define entailment in the current framework: truth-preservation and acceptance-preservation. It is the latter, we argue, that is relevant for explaining the entailment patterns governing MCs and MEs from Section 2.5.

17 On this latter point, we agree with Giannakidou & Stavrou (2009: 57), who hold that "metalinguistic functions are encoded in the grammar in a systematic way, and are not merely pragmatic devices." (See also Giannakidou & Yoon 2011: 625–626.) This view is also in line with Morzycki (2011: 82), whose analysis "places metalinguistic comparison deep into the sinews of the grammar."

Let's start with "classical" entailment ($\models$) defined as truth-preservation:

(62) $A_1, \ldots, A_n \models B$ iff for all $\langle \leqslant, i, w \rangle$:
if $[\![A_1]\!]^{\leqslant,i,w} = \cdots = [\![A_n]\!]^{\leqslant,i,w} = 1$, then $[\![B]\!]^{\leqslant,i,w} = 1$.

This notion of entailment vindicates Observations 1, 2, 4, and 5:

(a) $A \succ B, A \wedge B \not\models \bot$ and $A \succ B, \neg A \wedge \neg B \not\models \bot$

(b) $A \succ B, B \models A$

(c) $A \approx B \models \neg(A \succ B) \wedge \neg(B \succ A)$

(d) $A \approx \neg A \not\models \bot$.

We also obtain some other nice predictions worth highlighting:[18]

(e) $A \succ B \models \neg(B \succ A)$

(f) $\models \neg(A \succ A)$

(g) $A \succ B, B \succ C \models A \succ C$

(h) $A \succ B \models \neg B \succ \neg A$

(i) $A \succ (B \vee C) \models (A \succ B) \wedge (A \succ C)$

(j) $(A \wedge B) \succ C \models (A \succ C) \wedge (B \succ C)$

(k) $\models A \approx A$

(l) $A \approx B \models B \approx A$

(m) $A \approx B \models \neg A \approx \neg B$

(n) $\models (A \succ B) \vee (B \succ A) \vee (A \approx B)$ (only given totality of $\leqslant$).

Importantly, however, truth-preservation does not vindicate Observation 3: $A \wedge \neg B \not\models A \succ B$. Even if i satisfies $A \wedge \neg B$, it might be equally ranked with an interpretation j that satisfies $B \wedge \neg A$, in which case $A \succ B$ is false at i. For a similar reason, $A \approx B, A \not\models B$. This is unsurprising given the puzzle mentioned in Section 2.5, viz., that Observations 3–5 are classically incompatible. What, then, are we to make of the felt entailment in (25)?

(25) Ann is a linguist but not a philosopher.
⇒ Ann is more a linguist than a philosopher.

18 In rare cases, our semantics for MEs in Section 4.2 violates transitivity: $A \approx B, B \approx C \not\models A \approx C$. The semantics for MEs can be revised to validate transitivity, however; see Kocurek 2024. Since none of the entailment predictions below are affected by this complication, we use the simpler semantics for MEs in (54) in what follows.

We propose the following diagnosis: while $A \wedge \neg B$ does not classically entail $A \succ B$ in the truth-preserving sense, one cannot *accept* the former without accepting the latter. Recall from Section 3.3 that an agent accepts a sentence A if for any pair $\langle \leqslant, w \rangle$ they leave open, $[\![A]\!]^{\leqslant, i, w} = 1$ on all $\leqslant$-maximal i. Suppose a speaker accepts $A \wedge \neg B$. That means on any semantic ordering they leave open, all the top-ranked interpretations are $(A \wedge \neg B)$-interpretations. So every $(B \wedge \neg A)$-interpretation must be ranked below all of these. Hence, if an agent accepts $A \wedge \neg B$, they must also accept $A \succ B$.

Similarly, while $A \approx B$ and A do not classically entail B, one cannot accept the former without accepting the latter. Suppose a speaker accepts both $A \approx B$ and A. That means on any semantic ordering they leave open, (i) all the top-ranked interpretations make A true, and (ii) for any $(A \wedge \neg B)$-interpretation, there is a $(B \wedge \neg A)$-interpretation that's ranked at least as high. Since all of the top-ranked interpretations satisfy A by (i), none of the top-ranked interpretations can satisfy $\neg B$ by (ii). Hence, if an agent accepts both $A \approx B$ and A, they must also accept B.

This diffuses the tension between (32) and (33) from Section 2.5.

(32) Pluto is (exactly) as much a planet as not.

(33) a. ??Pluto is a planet and it is (exactly) as much a planet as not.
b. ??Pluto is not a planet and it is (exactly) as much a planet as not.

A speaker can accept $A \approx \neg A$ if all the semantic orderings they leave open contain some A-interpretations and some $\neg A$-interpretations at the top. This is why (32) is acceptable. But a speaker cannot simultaneously accept $A \approx \neg A$ and accept A. If they accept A, the top-ranked interpretations on any semantic ordering they leave open are all A-interpretations. In that case, the speaker must accept $A \succ \neg A$, and thus cannot accept $A \approx \neg A$. This is why (33a) is unacceptable. Similarly for (33b).

This suggests another notion of entailment as **acceptance-preservation** ($\Vdash$):

(63) $A_1, \ldots, A_n \Vdash B$ iff for all $\langle \leqslant, w \rangle$:
if $|A_1|^{\leqslant, w} = \cdots = |A_n|^{\leqslant, w} = 1$, then $|B|^{\leqslant, w} = 1$.

All of the (non)entailments mentioned in (a)–(n) above apply equally to $\Vdash$.[19] Moreover, as we observed above, $A, \neg B \Vdash A \succ B$. Thus, $\Vdash$ vindicates Observations 1–5, including Observation 3.

Acceptance-preservation avoids the tension with Observations 3–5 because it is nonclassical. Specifically, it invalidates proof by cases: while $A \Vdash A \succ \neg A$ and $\neg A \Vdash \neg A \succ A$, and while $\Vdash A \vee \neg A$, still $\not\Vdash (A \succ \neg A) \vee (\neg A \succ A)$. This failure of classicality is similar to what has been observed for "informational entailment" in

19 Since truth-preservation implies acceptance-preservation, (b)–(c) and (e)–(n) automatically carry over to $\Vdash$. Non-entailments (a) and (d) for $\Vdash$ are straightforward to verify.

the epistemic modals literature (Yalcin 2007): while A seems to imply $\Box A$ (where $\Box$ is epistemic *must*) and $\neg A$ seems to imply $\Box\neg A$, still $A \vee \neg A$ doesn't seem to imply $\Box A \vee \Box\neg A$. The standard diagnosis is that while anyone who "accepts" (i.e., is certain of) A must accept $\Box A$, and anyone who accepts $\neg A$ must accept $\Box\neg A$, it does not follow that anyone who accepts $A \vee \neg A$ must accept $\Box A \vee \Box\neg A$. Metagradable constructions similarly exemplify this form of nonclassicality with acceptance-preservation.[20]

5 Comparison with other approaches

Before turning to other metagradable constructions (Section 6), we next compare our semantics for MCs with others from the literature. While our account takes inspiration from these, they each face problems that our semantic expressivist account overcomes.

5.1 Preference and appropriateness

Giannakidou & Stavrou (2009), and later Giannakidou & Yoon (2011), analyze MCs in terms of what is more appropriate or preferable to say: *Ann is more a linguist than a philosopher* means that it is more appropriate or preferable to say that Ann is a linguist than to say that she is a philosopher (see also Embick 2007). More precisely, they analyze the truth conditions of $A \succ B$ as follows:

(64) Where R is a contextually supplied gradable propositional attitude (e.g., deeming it appropriate to say) and α is a contextually supplied anchor of comparison (usually the speaker), the degree d to which α Rs A is greater than the degree d' to which α Rs B.

For Giannakidou & Stavrou (2009), the propositional attitude R is either epistemic or preferential. For Giannakidou & Yoon (2011), R is always an attitude of preference relativized to a goal supplied by context. Thus, MCs are expressions of the speaker's preferences about what to say.

Neither appropriateness nor preference accurately predicts the acceptability of MCs, however. On the one hand, as shown in (65), deeming one thing more appropriate or preferable to say than another is not sufficient to license an MC (Morzycki 2011: 47).

(65) [Herman approaches the bereaved at a funeral and says, "Sorry your mother croaked." Herman's friend takes him aside and says. . .]

20 A related observation applies to epistemic *as likely as*, suggesting an even closer parallel between metagradability and comparative probability operators. We return to this in Section 7.

a. It's more appropriate to say "She passed away" than "She croaked".
b. I'd prefer to say "She passed away" to "She croaked".
c. #She more passed away than croaked.

On the other hand, deeming one thing more appropriate or preferable to say is not necessary to license an MC, as shown in (66) (Rudolph & Kocurek 2020: 298).

(66) [Sam has died during a poorly-planned mountain climbing expedition. The speaker is discussing how to describe him in an obituary.]
a. #It's more appropriate to say "Sam was rash" than "Sam was brave".
b. #I'd prefer to say "Sam was rash" to "Sam was brave".
c. Sam was more rash than brave.

The problem is that one can find some utterance preferable or appropriate for a great variety of reasons (e.g., etiquette, aesthetic taste, etc.), and these can come apart from the notion of betterness relevant to MCs in both directions.

Semantic expressivism shares with the preference/appropriateness view the idea that MCs communicate speakers' attitudes towards language. But the accounts differ in what type of attitude this is. On our view, MCs communicate a speaker's *interpretive commitments*, not their preferences.[21] It is likely that, for most speakers in most contexts, *She passed away* and *She croaked* will be treated as semantically equivalent on any interpretation the speaker ranks (cf. the third point in Section 4.2). In that case, (65c) is false even though (65a–b) are true.

In the other direction, examples like (66) illustrate that a speaker can be more committed to an interpretation without preferring it or finding it appropriate (though in many cases, these will coincide). Compare: someone may be committed to attending an event (e.g., because they promised to do so) while preferring not to or finding it inappropriate to do so. Similarly, a speaker may be more committed to an interpretation that counts Sam as rash than one that counts him as brave even if they would not prefer or find it appropriate to say this in an obituary. This explains why (66c) can be true even though (66a–b) are false.

5.2 Precision

Recognizing that appropriateness and preference are too broad, Morzycki (2011) analyzes MCs more narrowly in terms of precision. On his view, MCs compare the

21 There might be a way of hearing "appropriate" or "prefer" on which they track a speaker's interpretive commitments. However, Giannakidou et al. do not limit them in this way. Giannakidou & Yoon (2011: 639), for example, are explicit that their notion of preference is to be understood in terms of desire. Our point is not that there's no notion of appropriateness/preference on which it would be correct to say (66a–b), just that MCs are not always equivalent to appropriateness/preference claims.

degree to which something is "more accurate to say", or "closer to the truth", in a given context (see also Wellwood 2019). Building on Lasersohn's (1999) notion of "pragmatic halos", Morzycki takes *Ann is more a linguist than a philosopher* to mean that *Ann is a linguist* is more accurate (i.e., true to a greater degree of precision) than *Ann is a philosopher*. This is spelled out as follows:

(67) There is a degree d of precision such that (i) there is a property F that resembles the property *being a linguist* to at least degree d (in the context of use) such that Ann is F, and (ii) there is no property G that resembles *being a philosopher* to at least degree d (in the context of use) such that Ann is G.

However, MCs are not always felicitous in contexts that involve comparisons of precision:

(68) [Herman is $6'2''$ and the speaker knows this.]
Herman is more six-foot-three than six-foot-five.

Here, it is *more* accurate to say that Herman is six-foot-three than six-foot-five. So it's not clear what, on the precision account, explains the infelicity of (68).[22]

Semantic expressivism can explain this case by postulating that speakers generally do not rank interpretations that reinterpret measure terms like *six-foot-three*. This is not to say there couldn't be such cases. Imagine the speaker is trying to sort people based on their height, but they can only use two-inch increments: $6'1''$, $6'3''$, $6'5''$, etc. In this context, it might be appropriate to assert (68) since the speaker is forced to compare more coarse interpretations of *six-foot-three* and *six-foot-five*. Relative precision can be the basis for comparative interpretive commitments. But without a context that makes this natural, expressivism correctly predicts the infelicity of (68).

Another problem for the precision view is that it's unclear whether appeal to degrees of precision can account for the fact that $A \wedge B$ does not contradict $A > B$ (Domosławski 2024). For Morzycki, similarity to degree 1 is just identity. So if Ann *is* a linguist, then Ann has a property that resembles *being a linguist* to degree 1. This means that if Ann is both a linguist and a philosopher, she can't be *more* a linguist than a philosopher: she's simply both to the same degree, viz., degree 1. By contrast, $A \wedge B$ does not contradict $A > B$ on our analysis. As we saw in Section 4.3, even if A and B are both true, it does not follow that they have the same (maximal) metalinguistic degree.

22 Morzycki (2011: 50) grants that there is no "completely clear-cut or invariant concept of imprecision that would allow us to build, once and for all, an ordering of expressions according to their precision." While this may give him some flexibility to account for cases like (68), there is the risk of *ad hoc* maneuvers, given that it seems like a clear case of comparative precision.

5.3 Credence

Wellwood (2014: Chap. 6) takes MCs to compare the speaker's credence in the two constituent propositions.[23] On this view, the truth conditions of an MC of the form $A > B$ come out as follows (Wellwood 2014: 253):

(69) The speaker's credence in the proposition A is greater than their credence in the proposition B.

Taking MCs to compare degrees of credence leads to incorrect predictions about the acceptability of MCs. For one, assertions of MCs are compatible with the speaker having no credence in either proposition:

(70) Ann definitely isn't a linguist, but she's more a linguist than a philosopher.

Moreover, on the credence view, we would incorrectly expect MCs to be interchangeable with likelihood claims. Say Ann's work focuses more on linguistics than philosophy, but she has a PhD in philosophy and is employed in a philosophy department. In that case, the MC in (71a) could be appropriate, while the likelihood comparison in (71b) would not be.

(71) a. Ann is more a linguist than a philosopher.
b. #It's more likely that Ann is a linguist than a philosopher.

Conversely, say it's springtime, when it rarely snows, but the speaker doesn't know whether there was any precipitation at the relevant time. Here, the likelihood comparison in (72a) is appropriate, while the MC in (72b) is odd.

(72) a. It's more likely that it rained than snowed.
b. #It more rained than snowed.

Semantic expressivism avoids these concerns since it ties MCs to a speaker's interpretive commitments rather than credences. Still, our view shares with the credence view the idea that MCs express speakers' comparative attitudes towards the constituent claims. As mentioned previously, we think the analogy between a speaker's comparative commitments to interpretations and their credences is informative. We'll return to this in Section 7.

23 Later, in Wellwood 2019: Chap. 7, she revises her view such that MCs express comparative accuracy. This avoids the problems facing the credence account, though it reintroduces issues discussed in Section 5.2 for the precision account.

5.4 The speaker/anchor of MCs

A further problem with some previous analyses of MCs has to do with the speaker (or, more generally, the "anchor"). The preference/appropriateness accounts of Giannakidou & Stavrou (2009) and Giannakidou & Yoon (2011), as well as the credence account of Wellwood (2014) include the speaker in the truth conditions of MCs in a way that leads to problematic predictions about (i) the modal dependence of MCs on speakers' attitudes, and (ii) the subject matter of disagreement over MCs.[24]

On (i): These views incorrectly predict that the following would be true:

(73) #If I had different credences/desires/goals/beliefs about what was appropriate to say, Ann would be more a philosopher than a linguist.

On (ii): The preference/appropriateness account incorrectly predicts that the reply in (74b) expresses disagreement with the initial claim in (74a), while the credence account incorrectly predicts that the reply in (74c) does the same.

(74) a. Ann is more a linguist than a philosopher.
b. #No, you don't think the former is more appropriate/preferable to say.
c. #No, your credence that she's a linguist isn't higher.

The general problem is that while the assertability of MCs needs to be sensitive to the speaker's attitudes in some way, an analysis should not make MCs *about* those attitudes. These attitudes should not be part of their at-issue content.

Semantic expressivism avoids the speaker/anchor problem. On this view, MCs express one's comparative commitments to interpretations without being used to assert *that* one has such commitments. That is, we do not take (75a) to be equivalent to (75b).

(75) a. Ann is more a linguist than a philosopher.
b. I am more committed to an interpretation on which Ann is a linguist than one on which Ann is a philosopher.

The relationship between these sentences, on our view, is analogous to the relationship between a likelihood claim and a claim about one's credence.

(76) a. It's probably raining.
b. I have a high credence that it's raining.

24 These issues are familiar from discussions of contextualist theories about a broad range of expressions. See e.g., Lasersohn 2005, MacFarlane 2014; for discussion of possible contextualist replies, see Khoo 2017, Zeman 2017.

What (75a) and (76a) express, (75b) and (76b) assert. No plausible semantics for probability operators should predict that the modal connection in (77) holds, or that (78) is a sensible disagreement.

(77) #If my credences were different, it probably wouldn't be raining.

(78) a. It's probably raining.
b. #No, you don't have high credence in that.

Likewise, we do not predict that MCs are modally dependent on the speaker's commitments, nor that a claim about commitments is a sensible way to disagree with an MC. Our analysis avoids making MCs about the speaker, while still capturing the fact that they're used to communicate the speaker's commitments.[25]

6 Extensions

We now extend our basic framework for MCs and MEs to other metagradable constructions, including degree modifiers (Section 6.1), "superlatives" (Section 6.2), and conditionals (Section 6.3).

6.1 Degree modifiers

much more As with ordinary comparatives like (79), MCs can be modified with *much* as in (80).

(79) Ann is much taller than Ben.

(80) Jupiter is much more a planet than Pluto.

Intuitively, (80) says there's an interpretation on which Jupiter, but not Pluto, is a planet that's ranked *much* higher than any interpretation where Pluto, but not Jupiter, is a planet. This does not just reduce to the ordinary MC without *much*, as the consistency of (81) demonstrates:

(81) Pluto is more a planet than Ceres, but not much more.

Even if a speaker is more committed to Pluto being a planet than Ceres being a planet, they may not be *much* more committed to it.

To analyze "modified metalinguistic comparatives" like (80), we need to add a notion of "distance" to semantic orderings. We propose doing this by adding an

25 The speaker/anchor problem could be avoided while retaining aspects of the preference, appropriateness, or credence views, for instance, by adopting expressivist versions of these accounts. This would not, however, solve the problems from Sections 5.1 and 5.3.

extra parameter to the index that captures "how far" interpretations are in a semantic ordering. As it turns out, this parameter alone can be used to analyze other degree modifiers as well.

More precisely, where $\leqslant$ is a semantic ordering, a **distance function** for $\leqslant$ is a function d mapping each interpretation i to a set of interpretations $d(i)$. Intuitively, $d(i)$ is the set of interpretations (no higher than i) that are ranked "reasonably close" to i. We impose the following constraints on d:

i. d is **centered**: $i \in d(i)$.
Any interpretation is reasonably close to itself.

ii. d is **top-bounded**: if $i' \in d(i)$, then $i' \leqslant i$.
$d(i)$ only includes interpretations ranked no higher than i.

iii. d is **convex**: if $i' \in d(i)$ and $i' \leqslant i'' \leqslant i$, then $i'' \in d(i)$.
If i' is reasonably close to i, then so is any interpretation that's as close or closer to i.

iv. d is **noncontractive**: if $i' \in d(i)$ and $i' \leqslant j \leqslant i$, then $i' \in d(j)$.
If i' is reasonably close to i, then i' is also reasonably close to any interpretation that is as close or closer to it than i.

A distance function effectively determines a "threshold" of reasonably close interpretations at each level of the semantic ordering (Figure 2). The constraints ensure that (i) every interpretation is in its own threshold; (ii) thresholds are downward-looking; (iii) there are no gaps in the threshold; and (iv) thresholds for lower levels are never above thresholds for higher levels.

Given a semantic ordering $\leqslant$ and a distance function d for $\leqslant$, we write $i \ll j$ for "$i \leqslant j$ and $i \notin d(j)$". Intuitively, $i \ll j$ says that i is ranked "far below" j, i.e., i is ranked below j and it's not even reasonably close to j.

With d as a separate parameter, we can analyze modified MCs by introducing a new connective for *much more*, $\gg$, defined as follows:

(82) $[\![A \gg B]\!]^{\leqslant,d,i,w} = 1$ iff $\exists i' \leqslant i$:
(i) $[\![A \wedge \neg B]\!]^{\leqslant,d,i',w} = 1$
(ii) $\forall i'' \leqslant i$: $[\![B \wedge \neg A]\!]^{\leqslant,d,i'',w} = 1 \Rightarrow i'' \ll i'$.

In words, A much more than B iff there's an $(A \wedge \neg B)$-interpretation that's ranked *much* higher than any $(B \wedge \neg A)$-interpretation. In effect, our semantics for $\gg$ is our semantics for $\succ$ from (48), but with $\ll$ in place of $\leqslant$ in (ii).

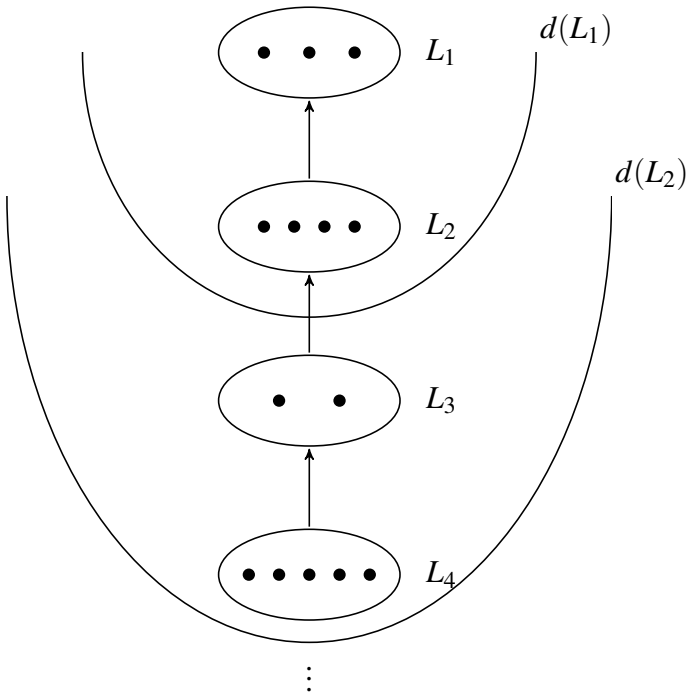

Figure 2 Illustration of a distance function for the semantic ordering in Figure 1. Each L is a set of equally ranked interpretations ("levels"). We write "$d(L)$" for the $d(i)$ of any $i \in L$. The noncontractive constraint on d ensures that interpretations on the same level have the same threshold.

very much Just as gradable adjectives can be modified by *very*, so too nongradable constructions can be modified by *very much*. Even if we accept (83a), for instance, (83b) sounds less good. Contrast this with (84), which sounds fine.

(83) a. Pluto is a planet.
b. ?Pluto is very much a planet.

(84) Jupiter is very much a planet.

While Jupiter is a paradigm example of a planet, Pluto's planetary status is contested. So, while there are reasonably highly ranked interpretations on which *Pluto is a planet* is false, there are no highly ranked interpretations on which *Jupiter is a planet* is false.

There is a connection between *very much* and modified MCs. Intuitively, *very much F* seems equivalent to *much more F than not*:

(85) Jupiter is very much a planet.
≈ Jupiter is much more a planet than not.

This suggests we can analyze *very much* with a sentential operator very ("it is very much the case that") defined as follows:

(86) $\mathsf{very}A \quad := \quad (A \gg \neg A)$.

If we plug this into our semantics for $\gg$, we obtain:

(87) $[\![\mathsf{very}A]\!]^{\leqslant,d,i,w} = 1$ iff $\exists i' \leqslant i$:
(i) $[\![A]\!]^{\leqslant,d,i',w} = 1$
(ii) $\forall i'' \leqslant i\colon\ [\![A]\!]^{\leqslant,d,i'',w} = 0 \Rightarrow i'' \ll i'$.

Given our constraints on d, these truth conditions reduce to the following (see Kocurek 2024):

(88) $[\![\mathsf{very}A]\!]^{\leqslant,d,i,w} = 1$ iff $\forall i' \in d(i)\colon\ [\![A]\!]^{\leqslant,d,i',w} = 1$.

In words, very$A$ iff every reasonably close interpretation makes A true.

Two consequences are worth noting. First, since distance functions are centered, *very much* implies the positive form: very$A \models A$. This seems desirable:

(89) ??Pluto is very much a planet, but it's not a planet.

Second, iterated *very much* is not redundant: very$A \not\models$ very very$A$. We think this outcome is plausible: *very very much* seems stronger than *very much*.

sorta Like ordinary gradable adjectives, metagradable constructions can be modified with hedges like *sorta*:

(90) Pluto is sorta a planet.

Arguably, (90) is compatible with Pluto being a planet or not.

(91) a. Pluto isn't a planet, but it's sorta a planet.
b. Earth is sorta a planet — in fact, it is a planet.

Moreover, the following conjunction is consistent:

(92) Pluto is sorta a planet and sorta not a planet.

This suggests *sorta* implicates, but does not entail, *not*.

To capture this, we propose the following truth conditions for sorta ("it is sorta the case that"):

(93) $[\![\mathsf{sorta}\,A]\!]^{\leqslant,d,i,w} = 1 \quad \text{iff} \quad \exists i' \in d(i)\colon\ [\![A]\!]^{\leqslant,d,i',w} = 1.$

In words, sorta A iff there's a reasonably close interpretation where A is true.

In effect, $\mathsf{sorta}\,A$ is equivalent to $\neg\,\mathsf{very}\,\neg A$. As predicted, $\mathsf{sorta}\,A \not\models A$ and $\mathsf{sorta}\,A \not\models \neg A$. In fact, $A \wedge \mathsf{sorta}\,\neg A \not\Vdash \bot$: one can accept A while also accepting $\mathsf{sorta}\,\neg A$, since $d(i)$ need not consist only of top-ranked interpretations. Moreover, $\mathsf{sorta}\,A \wedge \mathsf{sorta}\,\neg A \not\Vdash \bot$: one can accept that $\mathsf{sorta}\,A$ and $\mathsf{sorta}\,\neg A$. At the same time, the implicature from *sorta* to *not* is easy to explain via standard Gricean principles: since $A \models \mathsf{sorta}\,A$, the fact that the speaker asserted the weaker $\mathsf{sorta}\,A$ suggests they don't think A is true.

We are not the first to suggest a metalinguistic meaning for *sorta*. Anderson (2013) provides an analysis of *sorta* within Morzycki's (2011) precision-based framework for MCs. Though we depart from that framework for the reasons discussed in Section 5.2, Anderson's account is similar to ours. He takes *sorta* to lower the standard of precision, so that for a predicate P, $\mathsf{sorta}\,P$ is true of an individual so long as some predicate that sufficiently resembles P is true of it. For us, it is true of an individual so long as it is true on a reasonably close interpretation. Where he appeals to resemblance between predicates, we appeal to closeness of interpretations.[26]

mostly There is also a metalinguistic use of the modifier *mostly*.

(94) Ann is mostly a linguist.

Like *sorta*, *mostly* does not seem to either entail the positive or negative form, as evidenced by the felicity of the following:

(95) a. Ann isn't a linguist, but she's mostly a linguist.
b. Ann is mostly a linguist — in fact, she is a linguist.

But while $\mathsf{mostly}\,A$ ("it is mostly the case that A") arguably entails $\mathsf{sorta}\,A$, the two are clearly not equivalent. For example, unlike *sorta*, we cannot consistently conjoin $\mathsf{mostly}\,A$ with $\mathsf{mostly}\,\neg A$.

(96) #Ann is mostly a linguist and mostly not a linguist.

26 Bochnak & Csipak (2014) also provide a precision-based analysis of the hedge *...ish*. Despite some possible differences between *sorta* and *...ish* (Bochnak & Csipak 2014: Sec. 5), we would be inclined to provide the same truth conditions for A...ish as for $\mathsf{sorta}\,A$.

These constraints taken together effectively narrow the search for truth conditions for *mostly* in the present framework. First, $\mathsf{mostly}\,A$ must be compatible with A but not entailed by it. Second, $\mathsf{mostly}\,A$ and $\mathsf{mostly}\,\neg A$ must be incompatible. Third, $\mathsf{mostly}\,A$ must entail $\mathsf{sorta}\,A$.

While we suspect there might be several options for developing a semantics for *mostly*, we propose the following entry:

(97) $[\![\mathsf{mostly}\,A]\!]^{\leqslant,d,i,w} = 1$ iff $\exists i' < i$:
(i) $i' \in d(i)$
(ii) $\forall j \equiv i'$: $[\![A]\!]^{\leqslant,d,j,w} = 1$
(iii) $\forall i'' < i$: $(\forall j \equiv i''$: $[\![A]\!]^{\leqslant,d,j,w} = 0) \Rightarrow i'' < i'$.

In words, mostly A iff there is a reasonably high level of interpretations below the top level that accepts A and no higher level (except maybe the top level) accepts $\neg A$.

This entry satisfies the constraints mentioned above. First, since the entry for mostly only concerns the existence of a reasonably high level where A is true throughout *excluding* the top level, that means $\mathsf{mostly}\,A$ is compatible, even at the level of acceptance, both with A and with $\neg A$. Moreover, since $\mathsf{mostly}\,A$ requires a "reasonably high" level where A is true throughout, i.e., a level within the threshold, that means $\mathsf{mostly}\,A \models \mathsf{sorta}\,A$. Finally, because of condition (iii), any level on which A is false throughout must be below the level witnessing the truth of $\mathsf{mostly}\,A$. Thus, $\mathsf{mostly}\,A \wedge \mathsf{mostly}\,\neg A \models \bot$.

Mixed modifiers Some degree modifiers, while not metalinguistic in our sense, arguably have interpretation-shifting readings in some contexts but not in others. In this respect, these modifiers resemble interpretation-shifting expressions, like subjunctive conditionals, mentioned in Section 3.2. We'll call these **mixed modifiers**.

One class of examples includes *definitely* (Barker 2002) and *really* (Paradis 2003, McNabb 2012). These can be heard as epistemic modals, expressing one's confidence in a proposition, as in (98).

(98) Pence is definitely/really going to lose the Republican primary.

In other cases, like (99), they function as metalinguistic degree modifiers, expressing one's commitment to interpreting a word in a certain fashion.[27] (Again, imagine Pluto's physical features are common knowledge amongst conversational participants.)

27 Beltrama & Bochnak (2015) propose an analysis of *-issimo* in Italian and *šému* in Washo that is similar to Barker's analysis of *definitely* and McNabb's analysis of *really*. These expressions can also apply to nongradable adjectives, suggesting they admit of interpretation-shifting readings as well.

(99) Pluto is definitely a dwarf planet.

Another class of examples are emphatic modifiers, like *SO* (Potts 2005, Irwin 2014) and *totally* (Irwin 2014, Beltrama 2018a), which seem to express a strong form of commitment to the unmodified sentence. This commitment can be factual, as in (100), or interpretive, as in (101) (again, imagine the facts about Pluto and Ann are common knowledge).

(100) a. Chris is SO next in line. (Potts 2005: 130)
b. You should *totally* click on that link! (Beltrama 2018a: 220)

(101) a. Pluto is SO not a planet.
b. Ann is *totally* a linguist.

Other potential examples include prototypicality modifiers like *true* or *real* (Morzycki 2012), emphatic exclusives like *just* or *simply* (Beltrama 2018b), domain wideners like flat chin in ASL (Nikolai & Keshet 2022), and perhaps *mamaš* 'really' in Hebrew (McNabb 2012).

We will not present an analysis for all such modifiers here. Instead, we note a strategy for incorporating extant linguistic analyses into our account. Such modifiers are often analyzed as expressing or contributing some kind of "commitment" on the speaker's part.[28] On our view, the common ground encodes both factual and interpretive commitments. Thus, different readings of mixed modifiers can be understood as expressions of different kinds of commitments. We propose, then, that the interpretation-shifting uses of mixed modifiers express a strong *interpretive* commitment to the unmodified sentence. By contrast, the non-shifty uses express a strong *factual* commitment.

6.2 Superlatives

As we noted in Section 2, metalinguistic superlatives with *most* are marginal. However, comparative constructions can be used to convey superlative meanings. Here, we exploit a general equivalence between superlatives and certain comparatives, which holds for ordinary gradability as well:

(102) Ann is the tallest.
≈ Ann is taller than anyone else.

28 Barker (2002) analyzes *definitely* as a quantifier over elements of the common ground. Potts (2005) says emphatic *SO* "seems to contribute something like *I am strongly committed to the proposition that S*" (cf. Irwin 2014). Beltrama (2018a) says the use of *totally* "contributes to strengthening the speaker's commitment towards the utterance" (220), meaning the speaker holds "there should be no option other than adding [the proposition expressed] to the Common Ground" (234).

For the metalinguistic case, consider:

(103) Ann is more a linguist than anyone else.

This sentence could be uttered, for instance, at a meeting where a department is choosing someone to serve on a hiring committee for a linguist. No one clearly counts as a linguist, but Ann's research intersects the most with linguistics.

Thus, (103) has a "first-order superlative" meaning. It conveys, roughly, that among all the relevant *individuals*, Ann is the one who we are most committed to classifying as a *linguist*. We can formulate the first-order superlative as follows, making use of the metalinguistic comparative, along with first-order quantification:

(104) $\forall x(x \neq a \supset (Fa \succ Fx))$.

Comparatives can also be used to convey a second kind of metalinguistic superlative meaning. Consider a context where we are inviting two speakers to a conference, one linguist and one philosopher. The committee wants to invite Ann, whose work engages with both linguistics and philosophy. Considering which slot she will take up, someone might utter:

(105) Ann is more a linguist than anything else.

This sentence has a "second-order superlative" meaning. It conveys that, among all the relevant *descriptions* that could apply to Ann, *linguist* is the one we are most committed to. To formulate this, we must appeal to higher-order quantification:

(106) $\forall X(X \neq F \supset (Fa \succ Xa))$.

In both cases, the relevant domain of quantification needs to be contextually restricted. Otherwise, (105) would entail, for instance, that Ann is more a linguist than a person, which is obviously too strong. In most contexts where (105) would be asserted, the domain of the higher-order quantifier would be restricted to properties corresponding to things like occupations or activities.[29]

6.3 Conditionals

Gradable and metagradable constructions exhibit similar (though not identical) entailment patterns with indicative conditionals. Here, we briefly discuss some of these patterns and put forward a semantics for the indicative conditional that can account for them.

29 The semantics of quantifiers here is also complicated by the fact that interpretations can assign different intensions to names and predicates. Kocurek (2024) provides formal details.

Conditional comparatives Indicative conditionals sometimes convey weak metalinguistic comparatives:

(107) If Pluto is a planet, so is Ceres.
⇒ Ceres is at least as much a planet as Pluto is.

This phenomenon is also exhibited by ordinary gradability:

(108) If Ben is tall, so is Ann.
⇒ Ann is at least as tall as Ben.

In the gradable case, the converse entailment is also fairly plausible:

(109) Ann is at least as tall as Ben.
⇒ If Ben is tall, Ann is, too.

This is not so for the metagradable case in general:

(110) Pluto is at least as much an asteroid as it is a planet.
⇏ If Pluto is a planet, it is an asteroid.

Such inferences fail whenever some $(A \wedge \neg B)$- and $(B \wedge \neg A)$-interpretations are ranked higher than any $(A \wedge B)$-interpretation.[30,31]

Indicative conditionals can convey strict MCs via disjunctive antecedents.[32]

(111) If either Pluto or Ceres is a planet, it's Pluto.
⇒ Pluto is more a planet than Ceres.

Here, we assume the cleft construction *it's…* signals a uniqueness constraint, viz., that the same does not apply to Ceres (e.g., Hedberg 2000, Büring & Križ 2013). This constraint could be understood in a number of ways (e.g., presupposition, implicature, etc.). For simplicity, we'll assume it is an entailment. So we'll understand (111) to be equivalent to the conjunction of (112a) and (112b).

30 Notice this isn't possible for the ordinary gradable analogues like (109): the existence of delineations of *tall* making *Ann is tall* true and *Ben is tall* false preclude the existence of delineations where the opposite holds. See Section 7.

31 Still, this kind of inference generally sounds fine when the constituents are circumstantially compatible with one another. As we observed in Section 2.5, (24) sounds fine since, in most contexts, nothing precludes Ann from being both a linguist and a philosopher.

(24) Ann is more a linguist than a philosopher.
⇒ If Ann is a philosopher, she is a linguist.

32 Cf. the analysis of comparative similarity operators using counterfactuals in Lewis 1973: 54.

(112) a. If either Pluto or Ceres is a planet, [at least] Pluto is.
b. It's not the case that if either Pluto or Ceres is a planet, [at least] Ceres is.

Let's use $\rightarrow$ for the reading of the indicative that exhibits these entailment patterns. Then the remarks above suggest the following (at least for A and B that do not contain metagradable operators):

Observation C1. $(A \rightarrow B) \Rightarrow (B \succcurlyeq A)$. (see (107))

Observation C2. $(B \succcurlyeq A) \not\Rightarrow (A \rightarrow B)$. (see (110))

Observation C3. $((A \vee B) \rightarrow A) \wedge \neg((A \vee B) \rightarrow B) \Rightarrow (A \succ B)$. (see (111))

These observations are unexpected on the "standard" reading of indicative conditionals as quantifying over epistemic possibilities. Imagine we know that Ben is either $6'5''$ or $5'5''$, but we can't remember which. We also know that Ann is exactly $1''$ shorter than Ben. In this case, since $6'4''$ is still clearly tall, every epistemically accessible world where Ben is tall, Ann is tall. Yet we also know that Ann is shorter than Ben, and so (108) (on the intended reading) seems false.

The same goes for indicatives conveying MCs, like (107). Imagine we know that Pluto either manifestly meets the definition of *planet* or manifestly doesn't, but we can't remember which. We also know Ceres is similar to Pluto except noticeably smaller, albeit not enough to make the difference in its planetary status. In this case, every epistemically accessible world where Pluto is a planet, Ceres is too, even though Pluto is more a planet than Ceres.

This suggests there may be two "readings" of the indicative conditional: the "standard" one and the "metalinguistic" one (cf. Hinterwimmer 2010 on conditionals expressing ordinary superlatives). We leave it as an open question how best to understand the distinction between these two readings. As we use it, "$\rightarrow$" should always be understood as picking out the metalinguistic reading.

Conditional superlatives Indicative conditionals can also be used to convey metalinguistic superlative meanings, as in (113):[33]

(113) If anything is a planet, it's Jupiter.
$\Rightarrow$ Jupiter is more a planet than anything else.

33 The conditional in (113) expresses a first-order superlative. We can also express a second-order superlative with a conditional:

(i) If Jupiter is anything, it's a planet.

Here, we focus on first-order superlatives for simplicity.

This, again, mirrors what we see with ordinary gradability (Hinterwimmer 2010):

(114) If anyone is tall, it's Ann.
⇒ Ann is taller than anyone else.

We can also express "weak" superlatives by removing the cleft construction in the consequent.

(115) If anything is a planet, Jupiter is.
⇒ Jupiter is at least as much a planet than anything else.

(116) If anyone is tall, Ann is.
⇒ Ann is at least as tall as anyone else.

To analyze these cases, we assume the logical form of conditionals like (115) is $\exists xFx \rightarrow Fa$. Just as with conditional comparatives, we assume a cleft construction in the consequent signals a uniqueness constraint, which we analyze as an entailment. Thus, (113) can be paraphrased as (117).

(117) Jupiter is the unique thing such that if anything is a planet, it is.

More generally, strong conditional superlatives with the cleft construction can be analyzed as the conjunction of $\exists xFx \rightarrow Fa$ (the weak conditional superlative) and $\forall y(y \neq a \supset \neg(\exists xFx \rightarrow Fy))$ (uniqueness). This parallels our analysis of the cleft construction in conditional comparatives like (111), except we use an existential quantifier rather than a disjunction.

Failures of modus tollens Conditionals like (118) seem tautologous.

(118) If Pluto is a planet, then it's more a planet than not.

Yet such conditionals do not undermine the consistency of sentences like (32).

(32) Pluto is (exactly) as much as planet as not.

Indeed, we cannot infer by modus tollens from (118) and (32) that Pluto is not a planet. This parallels what we see with epistemic modals (Yalcin 2012). For instance, though (119) is tautologous, we cannot infer from the fact that the coin is as likely to have landed heads as tails that it didn't land heads.

(119) If the coin landed heads, it is more likely that it landed heads than tails.

This means that our analysis of $\rightarrow$ cannot classically entail the material conditional. Neither modus ponens nor modus tollens for $\rightarrow$ preserves truth. Moreover, the

above suggests that modus tollens does not preserve acceptance. Still, it is plausible that modus ponens is acceptance-preserving. After all, as we noted earlier, if we accept that Pluto is a planet, we can infer that Pluto is more a planet than not. So the validity of (118) is compatible with modus ponens at the level of acceptance. In sum:

Observation M1. $\Vdash A \rightarrow (A \succ \neg A)$. (see (118))

Observation M2. $A \rightarrow B, \neg B \nVdash \neg A$ (and so, $A \rightarrow B \not\models A \supset B$). (see (32))

Observation M3. $A \rightarrow B, A \Vdash B$. (plausibly)

Semantic analysis We motivate our analysis for $\rightarrow$ by way of analogy with the gradable case. Consider once again the conditional in (108), which conveys a weak comparative.

(108) If Ben is tall, so is Ann.
$\Rightarrow$ Ann is at least as tall as Ben.

On the intended reading of (108), the indicative conditional does not just say that at every epistemically accessible world where Ben is tall, Ann is also tall. Instead, it seems to say that there is no way of delineating *tall* on which Ben is tall but Ann isn't. This would explain why (108) carries comparative information: if there's no threshold for *tall* that Ben meets but Ann doesn't, then it follows that Ann must be at least as tall as Ben.

Now consider the conditional in (107), which conveys a weak metalinguistic comparative:

(107) If Pluto is a planet, so is Ceres.
$\Rightarrow$ Ceres is at least as much a planet as Pluto is.

Intuitively, (107) does not say that at every epistemically accessible world where Pluto is a planet, Ceres is. Instead, it seems to say that there's no relevant way to interpret *planet* on which Pluto is a planet but Ceres isn't. This is why the conditional seems to entail the weak comparative: it's not just talking about how these words are actually interpreted, but rather any relevant interpretation of them.

Of course, it's not strictly *impossible* to interpret *planet* so that Pluto, but not Ceres, counts as a planet. As with all quantificational claims, the quantification over interpretations in metalinguistic conditionals like (107) is subject to restriction. We suggest $\rightarrow$ restricts the semantic ordering to ranked interpretations satisfying the antecedent. Thus, (107) says that *among the ranked interpretations*, none interpret *planet* so that Pluto, but not Ceres, counts as a planet. More precisely, let $\leqslant_A$ be the restriction of $\leqslant$ to those interpretations satisfying A, i.e., $\leqslant_A = \{\langle i, j\rangle \mid i \leqslant j \text{ and } [\![A]\!]^{\leqslant,i,w} = [\![A]\!]^{\leqslant,j,w} = 1\}$. We analyze $A \rightarrow B$ as follows:

(120) $[\![A \to B]\!]^{\leqslant,i,w} = 1$ iff $\forall i' \leqslant i\colon [\![A]\!]^{\leqslant,i',w} = 1 \Rightarrow [\![B]\!]^{\leqslant_A,i',w} = 1$.

In words, $A \to B$ is true if, restricting the ordering to just the ranked A-interpretations, B is true on every such interpretation.

When A and B do not contain metagradable operators, $[\![B]\!]^{\leqslant_A,i,w} = [\![B]\!]^{\leqslant,i,w}$. In that case, $\to$ is an interpretation-strict conditional: $A \to B$ is true just in case every ranked A-interpretation is a B-interpretation. Thus, it is easy to verify that for such A and B, we vindicate Observations C1–C3.

We also vindicate Observations M1–M3. For metagradable A and B, modus tollens is not acceptance-preserving ($A \to B, \neg B \not\Vdash \neg A$), though modus ponens still is ($A \to B, A \Vdash B$). Specifically, $A \to (A \succ \neg A)$ is classically (and hence, acceptance) valid on this analysis, yet $A \to (A \succ \neg A), \neg(A \succ \neg A) \not\Vdash \neg A$. This is achieved through the restriction on $\leqslant$ to $\leqslant_A$: $[\![A \succ \neg A]\!]^{\leqslant,i,w} = 0$ even though $[\![A \succ \neg A]\!]^{\leqslant_A,i,w} = 1$.

7 Conclusion

Metalinguistic gradability comes in many forms. We have expanded the outlook from its usual focus on metalinguistic comparatives to encompass a whole parallel track of metagradable constructions mirroring those involving gradable adjectives. Our semantic expressivist framework has at its heart the idea that, in conversation, speakers express not only their commitments about what the world is like but also their commitments about how to interpret language. Metagradable constructions all serve, in different ways, to express speakers' relative commitments to possible linguistic interpretations.

Our analysis raises several questions for future work. We close by briefly discussing three.

Metalinguistic negation and moving beyond interpretations How does metalinguistic negation fit into the present picture? Metalinguistic negation can target many aspects of an utterance, including seemingly nonsemantic aspects like word-choice, as in (121), and pronunciation, as in (122).

(121) It's not stewed bunny, it's *civet de lapin*. (Horn 1989: 370)

(122) He didn't order [eɪ]pricots; he ordered [æ]pricots. (Morzycki 2011: 76, drawing on Potts 2007)

Giannakidou & Stavrou (2009) and Giannakidou & Yoon (2011) draw connections between metalinguistic negation and MCs, holding that both are essentially contrastive. However, it is unclear whether metalinguistic negation and MCs always

go together. Morzycki (2011: 76) considers the following MC variants of these metalinguistic negations.

(123) It's more *civet de lapin* than stewed bunny.

(124) He more ordered [eɪ]pricots than [æ]pricots.

He questions their acceptability, annotating them with "??". We are not so sure about these judgments. We suspect that, in certain contexts, (123) and (124) might be acceptable. If this is right, that raises the question of whether our current framework can account for them.

Our account is adequate for (123). In uttering it, a speaker expresses, roughly, that they would sooner drop the label *stewed bunny* for the dish in question than the label *civet de lapin*. This is consistent with the two terms being equivalent on the speaker's top-ranked interpretations, as well as on the interpretations adopted by the broader linguistic community.

Cases like (124) are trickier. If acceptable, it doesn't seem like it has to be entertaining different possible interpretations for the two pronunciations of the word *apricot*. It simply seems like the speaker would be expressing their commitment to one pronunciation over another. In that case, the analysis may need to be extended to include more than commitments to interpretations. For instance, instead of working with an interpretation parameter (a function from expressions to intensions), we could work with a "linguistic feature" parameter (a function from expressions to tuples of intensions, pronunciations, spelling, etc.).[34] This would also be a possible way to bring together metalinguistic gradability and metalinguistic negation, as the linguistic feature parameter could be general enough to capture the contrasts that metalinguistic negation targets.

Analogy with credence A second direction for future work concerns the comparison between doxastic and interpretive commitments. We hold speakers communicate both sorts of commitments with their assertions and that both have comparative as well as absolute realizations. Speakers don't only have beliefs but also credences. Speakers don't only accept interpretations but also rank them. Where comparative probability claims express credences, metagradable constructions express comparative interpretive commitments.

In both cases, we see parallel failures of classical entailment and the need for an alternative notion of entailment: "informational entailment" in the case of epistemic

34 This is related to Giannakidou & Yoon (2011), who use Potts's (2007) quotation-based framework to allow comparisons of nonsemantic features of expressions. Connections between quotation and metalinguistic effects are also discussed by Mena (2023) and Kirk-Giannini (2024), drawing on Shan (2010), Maier (2014), and others.

modals, and acceptance-preservation in our account. In Section 4.4, we saw that while accepting A requires accepting $A \succ \neg A$, and accepting $\neg A$ requires accepting $\neg A \succ A$, still $(A \succ \neg A) \vee (\neg A \succ A)$ does not have to be accepted. (For example, *Pluto is (exactly) as much a planet as not* can be accepted.) The same observation holds if we read $\succ$ as "is more likely than".

But there are also different entailment patterns for comparative probability and metagradability. Unlike comparative probability, metagradability does not have an additive structure. For example, the following inference sounds good:

(125) a. Ann is at least as much the winner as Ben.
b. Ann is at least as much the winner as Carol.
c. Therefore, Ann is at least as much the winner as Ben or Carol.

Indeed, our system predicts (125) to be truth-preserving. By contrast, the corresponding inference with comparative probability is invalid:

(126) a. Ann is at least as likely to be the winner as Ben.
b. Ann is at least as likely to be the winner as Carol.
c. Therefore, Ann is at least as likely to be the winner as Ben or Carol.

For example, we may assign 0.4 credence to Ann being the winner and 0.3 credence each to Ben and Carol being the winner. In that case, though (126a–b) are true, (126c) is false.[35] Probabilities "add up" in a way that interpretive commitments do not.

This same failure of additivity has been noted with vague terms, e.g., by Schiffer (1998). Explaining this observation, MacFarlane (2020b: 661ff) asks us to imagine a case where we are ambivalent about whether to classify Miguel as tall, bald, smart and funny, because he is a borderline case of each. Assuming these properties are independent, reasoning probabilistically, we should be quite certain that he isn't *all* of these things. But that seems wrong: "we are about as ambivalent about the conjunction as we are about the conjuncts" (MacFarlane 2020b: 662). On MacFarlane's view, the difference arises because vague statements are used to express a certain kind of plan, in the sense of Gibbard (2003), rather than a purely doxastic state.

On our view, the same is true of metagradable assertions: they express a certain kind of linguistic plan. But we take a step further in drawing a parallel with credences, by holding that the states of mind expressed through metagradability are essentially relative. We are *more committed* to certain interpretations than others, just as we have higher credence in certain worldly possibilities than others. Yet, though we reintroduce this comparative structure, there is still a failure of additivity, just as

35 The failure of this inference for epistemic *as likely as* is observed by Holliday & Icard (2013) and Lassiter (2015), in discussion of Kratzer 2012.

observed with vagueness. How the logics of doxastic uncertainty and interpretive indecision relate more generally remains to be explored.

Unifying ordinary and metalinguistic gradability We've seen many ways in which metagradability parallels ordinary gradability: both admit of similar constructions, exhibit similar inferential patterns, and, in many languages, use the same or related morphemes. Given this, it's natural to wonder whether the two forms of gradability can be united. Could the "parallel tracks" be merged?

In seeking to unify the two forms of gradability, we should be careful not to completely collapse them given the differences between them noted in Section 2. Still, we think it may be possible to unify these forms of gradability to a limited extent. Perhaps extant theories of ordinary gradability could be generalized to metagradable cases (e.g., Bale 2008). Arguably, however, the difficulties with this are precisely why MCs have been explored as a distinct construction.

Alternatively, we could try to subsume ordinary gradability as metagradability with additional constraints. One prominent approach to gradable adjectives interprets comparatives like (127) along the following lines (Kamp 1975, Klein 1980, van Benthem 1990, Burnett 2016):

(127) Ann is taller than Ben.
≈There is an admissible interpretation of *tall* such that *Ann is tall* is true while *Ben is tall* is false.

To ensure *taller than* obeys plausible principles like asymmetry and transitivity, we must impose constraints on "admissible" interpretations of *tall*. One such constraint (which van Benthem (1990) calls "No Reversal") says if (127) is true, there is no interpretation of *tall* on which *Ann is tall* is false and *Ben is tall* is true. Likewise, in addition to the minimal constraints on orderings $\leqslant$, we could require the following, where F is a gradable adjective:

NR. If $a \in i(F)(w)$ and $b \notin i(F)(w)$, then for all $i' \leqslant i$, if $b \in i(F)(w)$, then $a \in i(F)(w)$.

Assuming F obeys NR, $Fa \succ Fb$ has the following truth conditions:

(128) $[\![Fa \succ Fb]\!]^{\leqslant,i,w} = 1$ iff $\exists i' \leqslant i\colon\ [\![Fa \wedge \neg Fb]\!]^{\leqslant,i,w} = 1.$

The second clause in the truth conditions of $\succ$ becomes redundant given NR. This suggests we could view ordinary comparatives as MCs involving special terms (viz., gradable adjectives) that obey this constraint, perhaps among others.

Interestingly, this approach predicts some of the differences between ordinary and metalinguistic gradability. As we saw in Section 6.3, ordinary comparatives

seem to entail corresponding conditional comparatives, whereas MCs generally do not:

(109) Ann is at least as tall as Ben.
⇒ If Ben is tall, Ann is, too.

(110) Pluto is at least as much an asteroid as it is a planet.
⇏ If Pluto is a planet, it is an asteroid.

On our semantics, $A \succcurlyeq B$ doesn't generally entail $B \rightarrow A$. Given NR, however, $Fa \succcurlyeq Fb$ is classically equivalent to $Fb \rightarrow Fa$. So if ordinary comparatives are effectively MCs equipped with NR, we could explain this difference in entailment patterns.

This approach does not predict all relevant differences, however. Specifically, as we saw in Section 2.3, ordinary comparatives and MCs differ in their connection with positive form sentences. Thus, if Box A is slightly taller than Box B, but both are much taller than all other boxes, then (13a) is true whereas (13b) seems false:

(13) a. Box A is taller than Box B.
b. Box A is more tall than Box B.

If we analyze ordinary comparatives like (13a) as MCs with additional constraints like NR, then the difference between these is lost.

It may be possible to pry these sentences apart by appealing to loose speech. In most contexts, it's fine to report *It's 3pm* even if it's 3:02pm, so long as the difference is unimportant. Similarly, it can be felicitous to report *Ann is as tall as Ben* even when Ben is 1mm taller than Ann if this difference is unimportant. While one can also felicitously assert *Ann is taller than Ben* in this context, doing so might be seen as uncooperative, just as it would be uncooperative to say *It's not 3pm* if it's 3:02pm where the 2-minute difference is insignificant. This suggests *-er* acts as a kind of slack regulator like *exactly*: it requires the highest degree of precision. Perhaps this could explain the inappropriateness of (13b): in a context where the difference in height is insignificant, uttering it is uncooperative, even though it's strictly speaking true.

These suggestions are preliminary. More work is needed to fully assess the prospects of unifying the two forms of gradability.

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