February 16, 2009

Metalinguistic Comparison in an Alternative Semantics for Imprecision

Marcin Morzycki
Michigan State University

Abstract This paper argues that metalinguistic comparatives such as *more dumb than crazy* require a grammatical explanation, and that they can be understood as a kind of slack-regulator that involves comparison of imprecision rather than along a scale lexically provided by an adjective. I formulate this idea in a version of the Lasersohn (1999) pragmatic-halos theory of imprecision, recasting it in terms of Hamblin (1973)-style alternatives. This identifies more narrowly what it is such comparatives compare, and it suggests that the grammatical distinction between ordinary and metalinguistic comparatives tracks the independently-motivated distinction between vagueness and imprecision.

1 Introduction

Despite all the attention the semantics of comparatives has received, there has been relatively little discussion of so-called 'metalinguistic' comparatives, such as those in (1):

(1) a. George is more dumb than crazy.
b. Clarence is more a syntactician than a semanticist.
c. I am more machine now than man.
(Darth Vader in *Return of the Jedi*)

These differ from ordinary comparatives in a number of significant ways. The small literature on them includes Bresnan (1973), McCawley (1998), Huddleston & Pullum (2002), Embick (2007), Lechner (2007), Giannakidou

Thanks to Alan Munn, Anastasia Giannakidou, Anne-Michelle Tessier, Nicholas Fleisher, Orin Percus, and the audience at NELS 38.

This reflects work in progress, so comments are very welcome. In a different form, this is to appear in Muhammad Abdurrahman, Anisa Schardl, and Martin Walkow (eds.), *Proceedings of NELS 38*. GLSA Publications, Amherst, Mass.

& Stavrou (2008) and Giannakidou & Yoon (2009). Only the most recent three of these pursue an explicit account of the semantics.

Perhaps the most fundamental question such structures present is to what extent they are genuinely 'metalinguistic', and how 'metalinguistic' should be understood in the first place. The prototypical use of the term is in the literature on metalinguistic negation (Horn 1985, Carston 1996, Alonso-Ovalle & Guerzoni 2004 among others). On this sense, metalinguistic negation is metalinguistic because it 'reject[s] the language used by an earlier speaker' (Horn 1985). Since metalinguistic meaning is meaning about language itself, it is natural[1] to take it to be extra-grammatical in some way, perhaps involving a pragmatic process by which truth-conditional meaning is elaborated. It's not clear, however, what this leads us to expect about metalinguistic comparatives—they may well be about language itself, but they are also intertwined in an especially close way with the compositional semantics. So this is an empirical area in which questions about the division of labor between semantics and pragmatics are particularly fraught.

My aim in this paper is to pursue an account of these constructions that begins relatively close to compositional semantics. The guiding idea will be that metalinguistic and ordinary comparatives are in an important way parallel to each other, and that the principal difference between them tracks a distinction independently needed in degree semantics—the distinction between vagueness and *imprecision*, or how much pragmatic slack is afforded in judging an expression 'close enough to true' (this formulation is Lasersohn 1999's).[2] Ordinary comparatives involve comparison along scales lexically provided by particular adjectives, the same scales that give rise to vagueness in the absence of degree morphology. Metalinguistic comparatives, on the other hand, involve comparison along a single scale, the scale of (im)precision. To express this idea, I will adopt the pragmatic-halos theory of imprecision of Lasersohn (1999). I will, however, cast it in terms of a Hamblin-style alternative semantics (Hamblin 1973) in a way that allows degrees of imprecision—roughly, 'halo size'—to be directly compared. Such a reformulation is not crucial to achieving this, but I believe it to be helpful, and independently worthwhile due to some methodological advantages.

I begin in section 2 by providing evidence that despite the obvious similarities, metalinguistic comparatives do differ in fundamental ways from ordinary comparatives in important ways and can't be regarded as simply a species of

[1]Natural, but not necessary, as Potts (2007) shows in especially explicit fashion. Further discussion of this follows in section 5.

[2]The terminology here varies in potentially slippery ways, and indeed it should be made clear at the outset that the distinction itself is neither uncontroversial nor straightforward. I adopt the general understanding reflected in Lasersohn (1999) and Kennedy (2007), who discuss the difference in more detail than I will here.

ordinary comparative. Section 3 argues that they are 'slack-regulators' in the Lasersohn sense. Section 4 implements this analytical intuition and elaborates the notion of comparison of imprecision. Section 5 takes up the larger question of what exactly is 'metalinguistic' about such comparatives, including whether they involve comparison of meanings or of utterances themselves, and what this may tell us about metalinguistic phenomena more generally and about imprecision, vagueness, and gradability. Section 6 concludes.

2 Metalinguistic Comparatives vs. Ordinary Comparatives

There are a number of syntactic and semantic differences between metalinguistic and ordinary comparatives.

2.1 *Syntactic and Morphological Differences*

Metalinguistic comparatives (henceforth 'MCs') are impossible with *-er*, even for adjectives that otherwise require *-er* (i.e., synthetic) comparatives:[3]

(2) a. George is more dumb than crazy.
b. *George is dumber than crazy.

(3) a. Dick is more crazy than dumb.
b. *Dick is crazier than dumb.

This is all the more striking because *dumb* and *crazy* are not normally compatible with the *more* (i.e., analytic) form of the comparative at all:

(4) a. ??George is more dumb.
b. ??Dick is more crazy.

MCs also differ from ordinary comparatives in the syntax of the comparative clause. The overt portion of the *than*-phrase in MCs can consist of an adjective alone; this is not possible in ordinary comparatives:

(5) a. George is more dumb than crazy. (metalinguistic)
b. George is dumber than Dick. (ordinary)
c. *George is dumber than crazy.

[3]This may be the most clear-cut and well-known property of these constructions. Morphological consequences of this fact come up in Di Sciullo & Williams (1987) and Embick (2007).

McCawley (1998) observes a difference in the possibility of displacing the comparative morpheme. In ordinary comparatives, *more* must appear immediately left of an adjective:

(6) a. Speeding is more legal than murder.
b. *Speeding is legal more than murder.

This is not the case for metalinguistic *more*, as the contrast between (6b) and (7) reflects, and (8) further exemplifies:

(7) Your problems are legal more than financial. (McCawley 1998)

(8) a. George is dumb more than crazy.
b. Clarence is a syntactician more than a semanticist.
c. I am a machine now more than a man.

There are various caveats and empirical quirks in this area, though, which I return to briefly in section 4.7.[4]

2.2 *Semantic Differences*

Another signature property of MCs is that they are possible with adjectives that are not ordinarily gradable:

(9) a. Your problems are more financial than legal. (McCawley 1998)
b. *Your problems are more financial than Clarence's.

(10) a. This ball is more spherical than oblong.
b. ??This ball is more spherical than that one.

(11) a. ??This stool is more triangular than that one.
b. This stool is more triangular than square.

MCs also behave distinctively with respect to inferences from the comparative to the positive (i.e., morphologically unmarked) form. Ordinary comparatives fail to license such inferences—they 'neutralize' the adjective:[5]

(12) Clarence is taller than Erma.
DOES NOT ENTAIL: 'Clarence is tall.'

---

[4]One such quirk is the apparent ill-formedness of **I am machine now more than man*, which would seem to resemble *I am more machine now than man*. I don't know why this should be.

[5]I borrow the useful term 'neutralize' in this sense from Winter (2005).

Indeed, all things being equal, it is not even an implicature of (12) that Clarence is tall. MCs, on the other hand, do systematically give rise to such an implicature:

(13) Clarence is more tall than ugly.
IMPLICATES (BUT DOES NOT ENTAIL): 'Clarence is tall.'

This is only an implicature, not an entailment, however—it is cancelable:

(14) Clarence is more tall than ugly, but he's not (really) tall either.

Partly for this reason, MCs can't be reduced to comparison of deviation (Kennedy 1997, Kennedy & McNally 2005, Kennedy 2007), which involves comparing degrees of deviation from a standard. In this flavor of comparative, the adjective is not neutralized:

(15) Clarence is taller than Erma is short.
DOES ENTAIL: 'Clarence is tall.'

Being an entailment, this inference is not cancelable:

(16) #Clarence is taller than Erma is short, but he's not (really) tall either.

2.3 *Differences in Cross-Categorial Properties*

Ordinary comparatives are principally possible in the extended AP. MCs are more generally cross-categorial:[6]

(17) a. George is more [$_{\text{AP/DegP}}$ dumb] than [$_{\text{AP/DegP}}$ crazy].
b. George is more [$_{\text{DegP}}$ incredibly dumb] than [$_{\text{DegP}}$ incredibly crazy].

(18) a. Clarence is more $\left\{\begin{array}{l}\text{[}_{\text{DP}}\text{ a syntactician] than [}_{\text{DP}}\text{ a semanticist]}\\ \text{[}_{\text{NP}}\text{ syntactician] than [}_{\text{NP}}\text{ semanticist]}\end{array}\right\}$.
b. A chimp is more $\left\{\begin{array}{l}\text{[}_{\text{DP}}\text{ an ape] than [}_{\text{DP}}\text{ a monkey]}\\ \text{[}_{\text{NP}}\text{ ape] than [}_{\text{NP}}\text{ monkey]}\end{array}\right\}$.

[6] This claim warrants some qualification. AdvP comparatives are ordinary in the relevant sense, and VP comparatives (Nakanishi 2004b,a, Kennedy & Levin 2008) are as well. Beyond that, things get murky. *George is a bigger idiot than Dick* probably expresses *non*-metalinguistic comparison, but it isn't really an ordinary comparative either (Morzycki 2005). Other comparative-like structures, though, one might at least reasonably suspect of being metalinguistic.

(19) a. George more [$_{VP}$ felt the answer] than [$_{VP}$ knew it].
b. Clarence will more [$_{VP}$ confess the analysis] than [$_{VP}$ propose it].
c. Herman [$_{VP}$ stumbled into a solution] more than [$_{VP}$ sought it].

(20) a. George is more [$_{PP}$ beneath contempt] than [$_{PP}$ beyond help].
b. The dog is sitting [$_{PP}$ on your head] more than [$_{PP}$ in your lap].

(21) He realized [$_{CP}$ that he was drunk] more than [$_{CP}$ that he was ugly].

In fact, a single MC can actually compare across different categories:

(22) a. George is more [$_{AP}$ afraid of Dick] than [$_{PP}$ in love with him].
b. Dick is more [$_{DP}$ a war criminal] than (merely) [$_{AP}$ criminally insane].

MCs aren't completely cross-categorially promiscuous, though. Determiners and modals resist metalinguistic comparison:

(23) a. *More [$_{D}$ all] than [$_{D}$ many] dogs like socks.
b. *She more [$_{T}$ must] than [$_{T}$ can] chase squirrels.

In some dialects, transitive verbs do as well:[7]

(24) a. ?George more [$_{V}$ fears] than [$_{V}$ loves] Dick.
b. ?Mary more [$_{V}$ respects] than [$_{V}$ admires] John.
(McCawley 1998)

2.4 *Cross-Linguistic Evidence*

Some languages distinguish MCs morphologically. Giannakidou & Stavrou (2008) and Giannakidou & Yoon (2009) show that this is the case for Greek *para* and Korean *kipota* (both of which introduce comparative clauses, so closer to English *than* than *more*):

(25) Greek:
Ta provlimata sou ine perissotero ikonomika para nomika.
the problems yours are more financial than legal
'Your problems are financial more than legal.'

[7] For some speakers, these sentences are at least severely degraded relative to comparison of full VPs (*more fears Dick than loves him*). McCawley (1998) finds them good.

(26) Korean:
Kim-un enehakca-la-kipota chelhakca-i-ta.
Kim-TOP linguist-DECL-saying.than philosopher-be-DECL
'Kim is more of a philosopher than he is a linguist.'

Sawada (2007) observes that Japanese has a metalinguistic morpheme as well:

(27) Taroo-wa sensei-to iu-yori gakusya-da.
Taroo-TOP teacher-as say-than scholar-PRED
'Taroo is more a scholar than a teacher.'

Interestingly, both Sawada (2007) and Giannakidou & Yoon (2009) actually gloss the metalinguistic markers as something like 'say-than'.

2.5 *Summary*

To summarize so far, MCs are not simply a special case of ordinary comparatives. They differ in several important respects:

- they are impossible with *-er* and more generally have a different syntax
- they are possible with non-gradable adjectives
- they systematically give rise to an implicature that the adjective holds absolutely
- they are robustly cross-categorial
- in some languages, they are expressed with distinct morphemes

3 Imprecision and Metalinguistic Comparison

3.1 *Appropriateness*

One common and very natural characterization of what an MC like *George is more dumb than crazy* means is something like 'it is more apt or appropriate or otherwise better to say *George is dumb* than to say *George is crazy*'. This initial paraphrase is rather sketchy, though, and a more articulated understanding is desirable.

Giannakidou & Stavrou (2008) propose one, suggesting that the relevant notion of appropriateness is

> a gradable propositional attitude supplied by the context: either an epistemic attitude meaning approximately 'appropriate to say', or an attitude expressing preference (desiderative or volitional)

Much depends here on how one construes 'gradable propositional attitude', and how this relates to gradability of the sort associated with adjectives. Certainly, epistemic verbs like *know* are not gradable the ordinary sense. They don't occur in ordinary comparatives or with degree modifiers, for example:

(28) a. Clarence {#knows / #realizes / appreciates / admires} the answer more than Herman does.

b. Clarence {#knows / #realizes / appreciates / admires} the answer a great deal.

But a different notion of gradability does play an important role with respect to intensionality—for example, the 'graded possibility' of Kratzer (1981), which figures in the analysis of modals. In that respect, the approach of Giannakidou & Stavrou opens up an avenue toward clarifying how these two notions of gradability relate. Fully integrating them would require specifying how a denotation compatible with comparative morphology—that is, framed in terms of degrees—is built up from an intensional denotation.

Be that as it may, it might be possible to restrict the relevant kind of appropriateness further in a way that might help clarify the situation. Suppose Herman has entered a kindergarten class and said to the children, 'George is an asshole'. Clarence might reasonably take him aside and say (29a); it would be distinctly odd, however, for him to say (29b):

(29) a. It's more appropriate to say *He is a bad man* than to say *He is an asshole*.

b. ??He's more a bad man than an asshole.

Here is another scenario: Herman approaches the bereaved at a funeral and says 'Sorry your mother croaked'. Clarence might felicitously respond with (30a), but not with (30b):

(30) a. It's more appropriate to say *She passed away* than to say *She croaked*.

b. ??She more passed away than croaked.

It seems that appropriateness with respect to register or broader sociolinguistic context is *not* what's at issue.

Certain other conceivable linguistic appropriateness relations fail too. In working out a rough draft of a poem, Coleridge might have uttered (31) to Clarence:

(31) in Xanadu did Kubla Khan
a stately pleasure dome requisition

Clarence might respond with (32a), but not with (32b):

(32) a. It's more appropriate/better (metrically) to say he *decreed* it than to say he *requisitioned* it.
b. ??He more decreed it than requisitioned it.

So aesthetic appropriateness seems to be ruled out as well.

It is of course possible to characterize this appropriateness relation more finely as a species of modality, using the powerful tools intensional semantics provides. This strikes me as a useful enterprise, especially if it were to emerge that there is fine variation among language in precisely what flavor of appropriateness their metalinguistic comparative morpheme invoke. But equally, it is probably more than an accident that metalinguistic comparison would make use of precisely this notion of appropriateness rather than another. It seems unlikely to be the case that this reflects a fact about a particular modal operator, whose lexical semantics could in principle vary almost arbitrarily from one language to another.

An alternative approach is suggested by McCawley (1998), who paraphrases MCs using 'correct'. This may offer a more restrictive way to cash out 'appropriateness'. This is also closer to the intuition I will pursue, attempting to identify 'correctness' with (or at least relate it to) the independent phenomenon of imprecision and what Lasersohn (1999) calls 'pragmatic slack'.

3.2 *Imprecision, Vagueness, and Halos*

Imprecision is independent of vagueness and ordinary gradability (Lasersohn 1999, Kennedy 2007). Vagueness is characterized by difficulty in judging a sentence true or false for borderline cases. Thus (33a) is vague, but (33b) is not—we know how tall Clarence must be to render (33b) true:

(33) a. Clarence is tall. (vague)
b. Clarence is six feet tall. (not vague but potentially imprecise)

Imprecision, on the other hand, is not an issue of truth or falsity as such, but of how close an approximation of truth is pragmatically sufficient. Thus

even (33b), though not vague, is potentially imprecise—it might well describe a state of affairs in which Clarence is $5'11\frac{3}{4}''$, even though it would then be strictly speaking false. On the other hand, this state of affairs normally wouldn't be described using (34):

(34) Clarence is precisely six feet tall. (not vague and less imprecise)

Neither (33b) nor (34) is vague. But while (33b) may be imprecise, (34) is less so. What *precisely* in (34) does is 'slack regulation'. It signals that the standard for what counts as a sufficiently good approximation of the truth is to be raised.

Lasersohn (1999) conceptualizes imprecision in terms of *pragmatic halos*: the pragmatic halo of an expression is a set of objects of the same type as its denotation which differ in only 'pragmatically ignorable' ways. Thus, in most contexts, $[\![\textit{six feet}]\!]$ has a halo around it consisting of lengths that are near enough to six feet not to make any difference: $5'11\frac{1}{2}'' - 6'\frac{1}{2}''$, say. Halos expand compositionally. The halo of $[\![\textit{six feet long and three feet wide}]\!]$ combines the halos of $[\![\textit{six feet tall}]\!]$ and $[\![\textit{three feet wide}]\!]$, so that it might include objects that are $5'11\frac{1}{2}''$ tall and $2'11\frac{1}{2}''$ wide.

This independently existing distinction, then, may be able to provide a clearer sense of the required notion of appropriateness. One linguistic expression might be less appropriate than another in indefinitely many ways. But many ways of being less appropriate are not ways of being less precise. To tell a group of children, as in (29), that George *is an asshole* is not less precise that to say that he is *a bad man*. It may well be more so. If in fact MCs compare imprecision, the impossibility of using them to discourage cursing at children follows. So too for the impossibility of using MCs to discourage insensitive funeral behavior in (30) and bad poetry in (31). This is not to say that there is a 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. This is certainly not the case—there are many different ways in which one description may be more or less precise than another. Even so, there are considerably fewer ways of being imprecise than of being inappropriate. Where exactly this difference lies is of course an analytical question. With certain assumptions in place, MCs may help us answer it.

4 Metalinguistic Comparatives as Imprecision Regulators

4.1 *Halos and Alternatives*

To make the connection between imprecision and metalinguistic comparison, I will recast Lasersohn's original halo framework in different terms. The idea

will be to understand halos as sets of alternatives. It probably is not the case that such a reformulation is *necessary* to provide an account of the facts here. But there are nonetheless several reasons to do undertake it.

First, if one adopts a degree semantics for (ordinary) comparatives, and if ordinary and metalinguistic comparatives are to be understood in broadly similar terms, some notion of 'degrees of imprecision' will be necessary—that is, some means of 'measuring' halo size. So in that respect, *some* theoretical elaboration is required in any case.

Second, making use of alternatives makes clearer that the basic machinery involved does not, in fact, come at a high theoretical price. The core of Lasersohn's proposal can be understood as an application of grammatical mechanisms that are independently necessary. His conception of what halos are and how they combine is quite similar to what alternatives of different sorts are like. In particular, the principles by which the halos of larger expressions are built up compositionally from those of their constituents have precisely the same character as the principles of semantic composition in alternative semantics. In part for this reason, it does his original proposal no great violence to cast it in terms of alternatives, and he himself notes the connection in passing. Thus his proposal does not require the grammar to do anything that it was not in some sense doing already. This is particularly important to my argument here. One potential alternative—or supplement—to the proposal I pursue is to make use of a distinct and parallel semantic dimension alongside the truth-conditional one, a dimension that tracks expressive meaning and conventional implicatures (Potts 2003, Potts 2007; see section 5). That may well turn out to be what is necessary, but I believe it comes at a higher theoretical cost than Lasersohn's model alone. Using alternatives—which, however inconveniently complicated, are at least familiar—may help make the price tags easier to discern.

Third, using alternatives makes connections between imprecision and other grammatical phenomena that might otherwise not be apparent. These may of course turn out to be spurious connections, but better to let them come into view only to reject them than to leave them unnoticed. A wide range of phenomena have now proven to be amenable to an understanding in terms of alternatives—not just questions (Hamblin 1973) and focus (Rooth 1985), but also topichood (Büring 1997), pronouns (Kratzer & Shimoyama 2002), disjunction (Alonso-Ovalle 2006), and scalar implicatures (Keshet 2006). Pursuing an alternative-semantic model of imprecision therefore relates it to other phenomena that are not superficially similar, but the parallels may upon further investigation turn out to be meaningful. Approaching MCs specifically in these terms relates not just a big-picture grammatical phenomenon, imprecision, to these other areas, but also a specific construction, leading naturally to questions about, for example, how MCs might interact with focus.

Conversely, making the connection might lead to new questions about how alternatives work in these other areas as well.

4.2 *Degrees of Similarity and Degrees of Precision*

The first ingredient in the alternative-semantic conception will be a cross-categorial 'approximates' relation, which holds between two objects in the model if they are sufficiently similar. As Lasersohn shows, the context of use determines how similarity is evaluated. Different contexts impose different similarity orderings. To determine whether two objects are similar, then, what will be required is a standard of similarity and a context that provides the scale of similarity. The standard or threshold of similarity can be construed as a degree d, a real number in the interval $[0, 1]$:

(35) $\alpha \approx_{d,C} \beta$ iff, given the ordering imposed by the context C, α resembles β to (at least) the degree d and α and β are of the same type

Identity is simply maximal similarity, so for any context C, $\alpha \approx_{1,C} \beta$ iff $\alpha = \beta$. Importantly, in this conception degrees of similarity are all on the same scale.

This similarity relation will be the foundation of denotations that reflect degrees of imprecision. The idea will be to relativize the interpretation function to degrees of precision (and contexts), and to take an expression like *dumb* to denote the set of alternatives consisting of predicates sufficiently similar to $dumb$, and likewise for *three o'clock*:

(36) a. $[\![\textit{dumb}]\!]^{d,C} = \{f_{\langle e,st\rangle} : f \approx_{d,C} dumb\}$

b. $[\![\textit{three o'clock}]\!]^{d,C} = \{t_i : t \approx_{d,C} 3{:}00\}$

As a result, *dumb* interpreted absolutely precisely will denote the singleton set containing only $dumb$; interpreted absolutely imprecisely, it would be completely uninformative and denote all predicates of the right semantic type:[8]

(37) for every context C: $[\![\textit{dumb}]\!]^{1,C} = \{dumb\}$

$[\![\textit{dumb}]\!]^{0,C} = D_{\langle e,st\rangle}$

$[\![\textit{three o'clock}]\!]^{1,C} = \{3{:}00\}$

$[\![\textit{three o'clock}]\!]^{0,C} = D_i$

[8] I use i here for temporal intervals, and s for worlds.

Thus *dumb* denotes a set of alternatives whose size depends on the degree of precision the context demands:

(38) a. $[\![\,\textit{dumb}\,]\!]^{0.9,C} = \{dumb, ignorant, dopey, foolish, slow\text{-}witted, \ \ldots\ \}$

b. $[\![\,\textit{dumb}\,]\!]^{0.8,C} =$

$$\left\{ \begin{array}{l} dumb, ignorant, dopey, foolish, slow\text{-}witted, confused, \\ incurious, intellectually\text{-}lazy, criminally\text{-}reckless \ \ldots \end{array} \right\}$$

Standard principles of composition in alternative semantics—pointwise function application—will ensure that halos will 'expand' properly. That is, the alternatives that a constituent denotes are each the result of combining one alternative in the denotation of one of the daughters with another in the denotation of the other. I illustrate this here by example:

(39) $[\![\,\textit{jerk}\,]\!]^{0.9,C} = \{jerk, schmuck, putz, \ldots\}$

$[\![\,\textit{dumb}\,]\!]^{0.9,C} = \{dumb, ignorant, dopey, \ldots\}$

$$[\![\,\textit{dumb jerk}\,]\!]^{0.9,C} = \left\{ \begin{array}{lll} \lambda x \lambda w & . & dumb(x)(w) \wedge jerk(x)(w), \\ \lambda x \lambda w & . & dumb(x)(w) \wedge schmuck(x)(w), \\ \lambda x \lambda w & . & dumb(x)(w) \wedge putz(x)(w), \\ \lambda x \lambda w & . & ignorant(x)(w) \wedge jerk(x)(w), \\ \lambda x \lambda w & . & ignorant(x)(w) \wedge schmuck(x)(w), \\ \lambda x \lambda w & . & ignorant(x)(w) \wedge putz(x)(w), \\ \lambda x \lambda w & . & dopey(x)(w) \wedge jerk(x)(w), \\ \lambda x \lambda w & . & dopey(x)(w) \wedge schmuck(x)(w), \\ \lambda x \lambda w & . & dopey(x)(w) \wedge putz(x)(w), \\ & & \vdots \end{array} \right\}$$

4.3 *Comparing Imprecision*

In this framework, the denotation of metalinguistic *more* (which I'll call *more*$_{\text{MC}}$) will compare halo size. Putting a bit too glibly, it will require that the first of its arguments be closer to being true of the subject than the second. In halo terms, this means that the halo needed for the first argument is smaller and therefore more restrictive—more precise—than that needed for the second. Accomplishing this requires the following steps:

- *More*$_{\text{MC}}$ will apply to the first of its arguments, which I'll call α, and determine the highest degree of precision with which α can be construed while still including in its halo something that is true of the subject.
- It will then do likewise for its second argument, β.
- It will assert that the degree computed for α is higher than the degree for β.

This is reflected in the denotation in (40):

(40) $[\![\textit{more}_{\text{MC}}\ \alpha\ \textit{than}\ \beta]\!]^{d,C} =$

$$\left\{ \lambda x \lambda w \left[\begin{array}{l} max\left\{ d' : \exists a \left[a \in [\![\alpha]\!]^{d',C} \wedge a(x)(w) \right] \right\} > \\ \qquad max\left\{ d'' : \exists b \left[b \in [\![\beta]\!]^{d'',C} \wedge b(x)(w) \right] \right\} \end{array} \right] \right\}$$

To take an example, in *more*$_{\text{MC}}$ *dumb than crazy*, the effect will be to claim that a more restrictive halo will suffice for $[\![\textit{dumb}]\!]$ to contain something that can truthfully be predicated of the subject than for $[\![\textit{crazy}]\!]$:

(41) $[\![\textit{more}_{\text{MC}}\ \textit{dumb than crazy}]\!]^{d,C}$

$$= \left\{ \lambda x \lambda w \left[\begin{array}{l} max\left\{ d' : \exists a \left[a \in [\![\textit{dumb}]\!]^{d',C} \wedge a(x)(w) \right] \right\} > \\ \qquad max\left\{ d'' : \exists b \left[b \in [\![\textit{crazy}]\!]^{d'',C} \wedge b(x)(w) \right] \right\} \end{array} \right] \right\}$$

$$= \left\{ \lambda x \lambda w \left[\begin{array}{l} max\left\{ d' : \exists a \left[a \approx_{d',C} dumb \wedge a(x)(w) \right] \right\} > \\ \qquad max\left\{ d'' : \exists b \left[b \approx_{d',C} crazy \wedge b(x)(w) \right] \right\} \end{array} \right] \right\}$$

The result is that *George is more*$_{\text{MC}}$ *dumb than crazy* would mean that George could be said to be dumb with a higher degree of precision than he could be said to be crazy. One scenario in which this would be true is one in which:

- it is strictly speaking (i.e., absolutely) true that George is dumb
- it is strictly speaking true that George is psychologically disturbed, but...
- it is *not* strictly speaking true that George is crazy
- the strictest construal of $[\![\textit{crazy}]\!]$ on which $\textit{psychologically-disturbed}$ counts as crazy is 0.9

It need not be the case, however, that it be absolutely true that George is dumb, so long as it is more nearly true than that George is crazy. The result is that MCs will not require that *either* of the compared constituents be true of an individual, but merely that one be more nearly true than another.

It's worth noting that, as implemented here, MCs should actually eliminate further imprecision. That is, *more dumb than crazy* is itself not at all imprecise. This seems plausible—it is difficult to imagine what the halo of this expression should look like. Possibilities like *more foolish than crazy* seem straightforwardly inappropriate. If this weren't the case, (42) might be felicitous:

(42) #George is more dumb than crazy. To be precise, he is more foolish than crazy.

That said, it would be possible (though not pretty) to construct a denotation for MCs in this spirit that doesn't eliminate imprecision.

There is a methodological advantage in understanding MCs in this way. Halo construction on this view is *multiply* context-sensitive, in that halos vary with respect to *both* contexts and degrees of imprecision. This provides a lot of flexibility. In principle, this mechanism could be used to model relative appropriateness or aptness in other ways as well—or, more generally, to replace imprecision with some weaker notion if that turns out to be empirically necessary. To put it another way, what precisely imprecision should include (and whether 'imprecision' is actually a good term for it) is independent from whether alternatives/halos are involved. But any loosening of what is meant by 'imprecision' would have consequences—that is, make predictions—since it would (all things being equal) extend to other slack-regulators as well. The stronger and more interesting hypothesis, though, is that MCs are substantively no different from the other slack-regulators Lasersohn originally explored.

4.4 *Ordinary Comparatives*

Ordinary comparative morphology could have a roughly parallel denotation in this kind of system. Adapting one style of interpreting comparatives (Rullmann 1995, von Stechow 1984) to the Hamblin-style system here, one arrives at (43):

(43) $[\![\textit{more } \alpha \textit{ than Herman}]\!]^{d,C} =$

$$\left\{ f_{\langle e,st\rangle} : \exists a \left[\begin{array}{l} a \in [\![\alpha]\!]^{d,C} \wedge \\ \quad f = \lambda x \lambda w \left[\begin{array}{l} max\{d' : a(x)(d')(w)\} > \\ max\{d'' : a(Herman)(d'')(w)\} \end{array} \right] \end{array} \right] \right\}$$

The gradable adjective denotation a above is a relation between individuals and degrees. A certain amount of complexity is introduced here by the machinery of alternatives interacting with the core denotation of the comparative. The general picture, though, is that this involves comparison of degrees to which the gradable adjective is satisfied rather than degrees of precision. In (43), d is a degree of precision, while d' and d'' are degrees on the scale of the adjective.

This all would have the consequence that *Clarence is more ugly than Herman* would, interpreted with absolute precision, mean the highest degree to which Clarence is ugly is greater than the highest degree to which Herman is ugly. Interpreted with lower degrees of precision, predicates resembling $ugly$ would be introduced into the mix. Factoring out the alternative-related

machinery in (43), the result is broadly similar to what was suggested for metalinguistic comparison above. Indeed, one can very loosely construe the difference as involving the relative scope of the maximality operators and existential quantification. The deeper difference this reflects, though, is the difference between comparison of imprecision and comparison on a scale lexically provided by an adjective.

4.5 *Properties Only?*

The proposed denotation predicts that only property-denoting expressions should occur with MCs. This seems to be largely right, at least in my dialect of English (cf. Giannakidou & Stavrou 2008 for Greek). To take some particularly clear examples, determiners and modals can't be compared in this way:

(44) a. *More [$_D$ all] than [$_D$ many] dogs like socks.
b. *Clarence poked more [$_D$ every] than [$_D$ some] monkey.
c. *She more $\left\{\begin{array}{l}\text{[}_T\text{ must] than [}_T\text{ can]}\\ \text{[}_T\text{ will] than [}_T\text{ might]}\end{array}\right\}$ chase squirrels.

As noted earlier, there seems to be some variation with respect to whether transitive verbs can occur in MCs:

(45) a. ?George more [$_V$ fears] than [$_V$ loves] Dick.
b. ?Mary more [$_V$ respects] than [$_V$ admires] John.
(McCawley 1998)

Certainly, these don't seem quite as hopeless as (44). To the extent that (45) is good for some people, some modifications to the proposed denotation would have to be made. For speakers who accept (45), the generalization may be that only first-order predicates can occur in MCs. To accommodate this, the denotation proposed above would have to be rendered more type-theoretically flexible (that is, generalized in the same sense as generalized conjunction is; Partee & Rooth 1983). I won't pursue this possibility here.

4.6 *Incommensurability*

Comparatives constructed from adjectives that measure along distinct scales are normally ill-formed:[9]

(46) a. *This chair is wider than it is heavy.
b. *Clarence is taller than he is boring.

[9]There is a comparison-of-deviation-style reading on which these may be improved.

This kind of incommensurability is a signature property of ordinary comparatives.

If all MCs compare degrees of precision, these incommensurability effects should be absent in metalinguistic comparison. In general, this is indeed the case, as many examples already provided demonstrate—George can be said to be *more dumb than crazy* even though the scales of stupidity and insanity are distinct. But what about (47)?:[10]

(47) a. That disc is more rectangular than $\left\{\begin{array}{c}\text{round}\\ \text{??flat}\end{array}\right\}$.

b. This chair is more wide than $\left\{\begin{array}{c}\text{large}\\ \text{??heavy}\end{array}\right\}$.

c. Clarence is more tall than $\left\{\begin{array}{c}\text{huge}\\ \text{??boring}\end{array}\right\}$.

Clearly, MCs are not so thoroughly indiscriminate that they can compare an arbitrary pair of predicates. It's not obvious, though, that what goes wrong here involves comparison across scales. A relatively apparent difference is that these examples don't seem to be as starkly ill-formed as (46).

One can also imagine contexts in which at least some of these would be more felicitous. The exchange in (48) reflects one such scenario:

(48) HERMAN: Are you having trouble carrying this chair into the living room? I guess it's kind of heavy.
   a. CLARENCE: Well, it's not really *heavy* as such. It's more *wide* than heavy. I can't get it through the door.
   b. *CLARENCE: Well, it's not really *heavy* as such. It's *wider* than it is heavy. I can't get it through the door.

Even (47c) might be salvageable. Suppose that there are two contests, and no one can enter both. One of them can be won by being the tallest person; the other by being the most boring. In considering which contest Clarence should enter, we might make the observation in (49a), but not the one in (49b):

(49) a. Clarence is more tall than boring.
   b. *Clarence is taller than boring.

So examples like these really reflect at best a kind of quasi-incommensurability, one that depends on the circumstances of use.

This suggests a pragmatic explanation for the effect. Any two predicates can have their precision compared grammatically, but in order for such a

[10] I owe this observation, and (47a), to an anonymous NELS reviewer.

comparison to be felicitous, it must be in some way relevant. There must be a *reason* to compare the two predicates. For some predicates, it is very easy to imagine such a context. For others, a fairly bizarre one may be required. For others still, no context may suffice. But these are facts about the circumstances under which one might have an interest in the relative precision of two predicates, not about whether two predicates can be compared *in principle*.

4.7 *Other Metalinguistic Degree Constructions?*

MCs are possible with degree morphemes other than *more*:[11]

(50) a. George is less crazy than dumb.
b. George is as much crazy as dumb.

The denotation above is for $more_{\text{MC}}$ alone. Metalinguistic *less* and *as much* would require distinct metalinguistic denotations. For *less*, one might simply replace $>$ in (40) with $<$. For *as*, $>$ would be replaced with $\leq$ (or conceivably $=$, depending on one's assumptions about equatives).

But some caution is warranted here before we find ourselves too wantonly proliferating degree relations. It's certainly not the case that *any* degree morpheme can be metalinguistic:[12]

(51) a. ??George is as crazy as dumb.
b. George is $\left\{\begin{array}{l}\text{too}\\ \text{very}\\ \text{certainly}\end{array}\right\}$ crazy. (not metalinguistic)

Nor is it the case that metalinguistic degree words have the same syntax as ordinary ones. In addition to facts already noted in section 2, there are contrasts like these:

(52) a. George is crazy more than dumb.
b. *George is crazy less than dumb.
c. *George is crazy as much as dumb.

(53) a. Clarence is more than ugly.[13]
b. Clarence is less than ugly.
c. *Clarence is as much as ugly.

---

[11] Thanks to Alan Munn (p.c.) for pressing this point.

[12] With (51a), it is worth noting that it contrasts with the perfectly fine *George is as crazy as he is dumb*.

(54) a. She's more than my dog. She's (also) my psychiatrist.
b. *She's less than my dog. She's (merely) my psychiatrist.
c. *She's as much as my dog. She's my psychiatrist.

So there is evidence of distinct, idiosyncratic behavior among (potential) metalinguistic degree words that would justify distinct lexical entries. Further cross-linguistic research may be particularly useful in gauging the plausibility of this approach.

There are alternatives to proposing homophonous lexical entries, though. One such possibility would be to introduce a single operator that mediates all metalinguistic degree modification. Perhaps this could be understood as a rough analogue of the squiggle operator in focus semantics (Rooth 1992), which serves as a single grammatical mechanism mediating access to focus alternatives. On such an approach, no independent metalinguistic degree morphology would be required. It's not clear to me how one might adequately represent the semantics of such an operator, however. It would present a significant (and interesting) challenge, in that it would require providing a semantics for the degree morphemes themselves that would be agnostic in the right way with respect to whether it is degrees of precision that are being compared or ones provided by a gradable predicate. More generally, there are many issues to be pursued in this domain, which I will not pursue further here.

5 How 'Metalinguistic'?

This approach represents the 'metalinguistic' phenomenon here in purely *grammatical* terms, without reference to extralinguistic or extra-grammatical considerations. The alternative is rather unappealing, as it would entail construing overt morphemes with a distinct syntax as somehow extra-grammatical. It is, however, possible to take a step in the metalinguistic direction without going quite so far as this.

---

[13] Structures like this one especially raise some interesting issues. Given the proposal here, one straight-forward analytical possibility is to suppose that these involve existential quantification over salient properties. Since presumably there is always a property that's both salient and absolutely true, all this sentence would mean is that the (maximal) precision of *Clarence is ugly* is not 1. This is a very weak claim, but it is in fact very hard to imagine circumstances under which *Clarence is more than ugly* would be false.

It might, however, be the case that there is something else entirely going on here, perhaps unrelated to metalinguistic comparison: these structures may involve type-shifting properties into their individual correlates (Chierchia 1984, Partee 1987, Chierchia 1998) or in some other way, and therefore do something much closer to ordinary quantification over individuals. Partee (1987) explicitly suggests this for *He is everything I hoped he would be* and *They said she was beautiful, and she was that*.

On the approach proposed here, MCs compare *meanings*, not utterances. There is an alternative. Potts (2007) proposes a means of understanding metalinguistic negation as (essentially) a species of quotation. This makes possible a grammatical analysis of a metalinguistic phenomenon that *does* permit reference to utterances rather than merely meanings. Perhaps metalinguistic comparison is similarly utterance-oriented—Lechner (2007) actually provides a general picture of such a theory, and Giannakidou & Yoon (2009) have pursued this possibility as well.

If this is on the right track, metalinguistic comparison should mirror the quotative-like properties of metalinguistic negation. This is an appealing idea, and not really incompatible with anything I have suggested here, but pursuing it would require negotiating some empirical difficulties, and of course come at the price of invoking some powerful and relatively untested theoretical machinery.

As evidence of the connection between metalinguistic negation and quotative structures, Potts observes a parallel between sentences such as (55) and (56):

(55) a. He didn't order '[eɪ]pricots'; he ordered '[æ]pricots'.
b. He didn't call the POlice; he called the poLICE. (Horn 1985)

(56) a. When in Santa Cruz, Peter orders '[eɪ]pricots' at the local market.
b. When in Amherst, Peter orders '[æ]pricots' at the local market.

The normal way to interpret the metalinguistic negation facts in (55) is that they show truth-conditionally identical utterances are contrasted, one of them negated. This would only be possible if it were the utterances themselves, with their particular pronunciation, that were being contrasted. What (56) shows is that it is more generally possible to distinguish different pronunciations of truth-conditionally identical expressions. If MCs are metalinguistic in this sense, we would expect this kind of distinction to be possible with them as well. But the acceptability of corresponding examples of metalinguistic comparison is unclear:

(57) a. ??He more ordered [eɪ]pricots than [æ]pricots.
b. ??He called more the POlice than the poLICE.

These are not hopeless word salad, as one might have suspected if it is only meanings, and not utterances, that are being compared. But they are distinctly odd and difficult to make sense of, and require an unusually cooperative addressee. Perhaps the right approach to this would be to assume that these are in principle salvageable, but that they require somehow imputing to the two alternative pronunciations distinct meanings so that their relative

precision can be compared. Distinguishing two pronunciations of the same word truth-conditionally is not a trivial task, and probably not a grammatical one, so it makes sense that speakers might vary in their willingness to perform it.

A less problematic piece of evidence of similarity between metalinguistic comparatives and metalinguistic negation is that neither can be expressed with (derivational) bound morphemes: *un-* and *im-* fail to support metalinguistic negation just as *-er* fails to support metalinguistic comparison. If this generalization were cross-linguistically robust, it would indeed suggest a deep parallel. But in the relatively little work on MCs that has been done, counterexamples to this have already emerged. In both Japanese and Korean, the metalinguistic comparison marker is made up of a particle that means something like 'say' and an ordinary comparison morpheme: Sawada (2007) demonstrates this for Japanese *iu-yori* (glossed 'say-than') and Giannakidou & Yoon (2009) for Korean *kipota* (glossed 'saying.than').

So the evidence for resorting to explicit comparison between utterances rather than meanings is not overwhelming, particularly in light of the cost involved in pursuing the Potts-style account, with utterances introduced directly into the model. Even so, a plausible case could be made made for this position, and it is worthwhile to consider the possibility seriously.

If one were to adopt this view, and commit to incorporating it directly into the grammar, there is an additional analytical decision to be made. Accepting that MCs compare utterances, one would have to decide what it is about these utterances that is being compared. If it is in any respect their meaning, the analytical picture would not change a great deal. The same questions would arise involving what it is about these utterance meanings can be compared. If, on the other hand, pronunciations themselves could be compared, MCs would need to do something quite different from imprecision modulation. But simply backing down and resorting to a generalized notion of appropriateness would not suffice, since it would still be necessary to explain why certain plausible types of appropriateness are ruled out.

There is, however, an interesting middle ground here that bears recognizing—an intermediate theory in which it is utterances that are being compared, but the dimension of comparison is still their imprecision. In such a theory, halos would consist not of alternative meanings but alternative utterances. This could be built in roughly the fashion suggested here, but building on the basis an *utterance* similarity relation:

(58) $[\![\,\textit{dumb}\,]\!]^{0.9,C} = \{u_u : u \approx_{0.9,C} \text{`}dumb\text{'}\}$
$= \{\text{`}dumb\text{'}, \text{`}ignorant\text{'}, \text{`}dopey\text{'}, \text{`}foolish\text{'}, \text{`}slow\text{-}witted\text{'}, \ \ldots\ \}$

Certainly, this would involve massive additional ontological commitments

and complicated additional theoretical machinery, perhaps with limited benefits. But it would capture in a satisfying way the feeling that imprecision *itself* might be in some sense a metalinguistic or quotative phenomenon, a matter of more or less precise ways of describing things linguistically rather than of more or less precise ways of predicating abstract meanings of them. This might make it possible to look at other slack regulators—*precisely*, *exactly, roughly*—in a new light.[14]

6 Final Remarks

To summarize, the hypothesis I pursue here is that MCs compare degrees of imprecision. They are in that sense slack-regulators. To facilitate comparison of imprecision, the Lasersohnian pragmatic-halos framework was be recast in terms of alternatives. This approach identifies more narrowly the gradable relation that metalinguistic comparison targets, and it makes it possible to regard the difference between metalinguistic and ordinary comparatives as a reflection of the difference between imprecision and vagueness. The proposal is couched in terms of grammatical machinery that is well-motivated on independent grounds. In this respect, it places metalinguistic comparison deep into the sinews of the grammar, in line with recent research suggesting that it is very much a grammatical phenomenon and not primarily a matter of extra-grammatical pragmatic reasoning.

There are numerous questions that all this raises—indeed, the phenomena of metalinguistic comparatives on its own presents a large number of intriguing new puzzles irrespective of what analytical tack one takes. Because the syntax in particular remains in a number of ways mysterious, it is hard to be sure of how best to approach the semantics compositionally. These are questions that merit more attention than I have been able to give them here.

The particular approach I develop here gives rise to some more particular questions, though. One of them is how MCs might relate to other phenomena that make use of alternative semantics. To what extent, for example, can MCs be regarded as focus-sensitive? How do they behave in questions? Treating MCs as slack-regulators in this way also makes it possible to examine other slack regulators in a different light. Ideally, one might even hope that MCs might help us probe where the boundaries between imprecision and vagueness lie in the first place.

Another possibility that I leave relatively unexplored is the extent to which a connection might be made between imprecision and prototypicality.

---

[14] Of course, rendering imprecision via utterance alternatives would not actually require that *every* morpheme that targets imprecision alternatives be metalinguistic, but one might expect at least a few to be.

One way to characterize what it means to say that *I am more machine now than man* is that it claims the speaker is a more prototypical exemplar of a machine than of a man. Thinking in terms of prototypes is a notoriously slippery slope (Kamp & Partee 1995), but if they are to ultimately play a role in the grammar, MCs might help make clear what it is. And if it turns out that imprecision on its own is *too* restrictive a notion of (in)appropriateness, something along these lines may provide a more satisfactory alternative.

One final broader consequence of the proposal warrants highlighting. In making imprecision gradable, the view I have suggested here gives rise to two varieties of gradability in the grammar: one involving the machinery of vagueness, the other of imprecision. It is not merely the case that vagueness and imprecision are simply conceptual cousins, then—they are grammatical cousins as well. Either can give rise to comparatives, and perhaps other forms of degree modification as well. It is then possible to ask, for any construction involving gradability which kind of gradability it involves. For example, one might wonder whether nominal degree constructions such as *more of an idiot* and *a bigger idiot* actually operate on the level of imprecision modulation.[15] In a similar vein, quasi-comparative structures such as *Compared to Herman, Clarence is tall* may prove amenable to such an analysis. If so, the consequences might be far-reaching. Beck et al. (2004) argue that some languages (Japanese among them) use such structures as their principal means of expressing comparison. This presents the intriguing possibility that comparing relative precision is in some sense fundamental. Perhaps it is not merely certain constructions that operate on this level—it may be entire languages.

References

Alonso-Ovalle, Luis. 2006. *Disjunction in Alternative Semantics*. Doctoral dissertation, University of Massachusetts Amherst, Amherst.

Alonso-Ovalle, Luis & Elena Guerzoni. 2004. 'Double negation, negative concord and metalinguistic negation'. In Anne Pycha Mary Andronis, Erin Debenport & Keiko Yoshimura (eds.), *Proceedings of the Chicago Linguistics Society (CLS)*, pp. 15–31.

Beck, Sigrid, Toshiko Oda, & Koji Sugisaki. 2004. 'Parametric variation in the semantics of comparison: Japanese vs. english'. *Journal of East Asian Linguistics* **13**(4), 289–344.

Bresnan, Joan. 1973. 'Syntax of the comparative clause construction in English'. *Linguistic Inquiry* **4**(3), 275–343.

[15] With respect to *a bigger idiot*, this would be contrary to Morzycki (2005).

Büring, Daniel. 1997. *The Meaning of Topic and Focus — The 59th Street Bridge Accent*. Routledge, London.

Carston, Robyn. 1996. 'Metalinguistic negation and echoic use'. *Journal of Pragmatics* **25**, 309–330.

Chierchia, Gennaro. 1984. *Topics in the Syntax and Semantics of Infinitives and Gerunds*. Doctoral dissertation, University of Massachusetts Amherst.

Chierchia, Gennaro. 1998. 'Reference to kinds across languages'. *Natural Language Semantics* **6**(4), 339–405.

Di Sciullo, Anna Maria & Edwin Williams. 1987. *On the Definition of Word*. MIT Press, Cambridge, MA.

Embick, David. 2007. 'Blocking effects and analytic/synthetic alternations'. *Natural Language and Linguistic Theory* **25**(1), 1–37.

Giannakidou, Anastasia & Melita Stavrou. 2008. 'On metalinguistic comparatives and negation in Greek'. In *the Workshop on Greek Syntax and Semantics*. MIT Working Papers in Linguistics, Cambridge, MA.

Giannakidou, Anastasia & Suwon Yoon. 2009. 'Metalinguistic comparatives in Greek and Korean: Attitude semantics, expressive content, and negative polarity items'. In *Proceedings of Sinn und Bedeutung 18*.

Hamblin, Charles L. 1973. 'Questions in Montague English'. *Foundations of Language* **10**(1), 41–53.

Horn, Laurence R. 1985. 'Metalinguistic negation and pragmatic ambiguity'. *Language* **61**(1), 121–174.

Huddleston, Rodney & Geoffrey K. Pullum. 2002. *The Cambridge Grammar of the English Language*. Cambridge University Press, Cambridge.

Kamp, Hans & Barbara Partee. 1995. 'Prototype theory and compositionality'. *Cognition* **57**(2), 121–191.

Kennedy, Christopher. 1997. *Projecting the Adjective: The Syntax and Semantics of Gradability and Comparison*. Doctoral dissertation, UC Santa Cruz. Published in 1999 by Garland, New York.

Kennedy, Christopher. 2007. 'Vagueness and grammar: the semantics of relative and absolute gradable adjectives'. *Linguistics and Philosophy* **30**(1), 1–45.

Kennedy, Christopher & Beth Levin. 2008. 'Measure of change: The adjectival core of degree achievements'. In Christopher Kennedy & Louise McNally (eds.), *Adjectives and Adverbs: Syntax, Semantics, and Discourse*, Studies in Theoretical Linguistics. Oxford University Press, Oxford.

Kennedy, Christopher & Louise McNally. 2005. 'Scale structure, degree modification, and the semantics of gradable predicates'. *Language* **81**(2), 345–381.

Keshet, Ezra. 2006. 'Scalar implicatures with alternative semantics'. In M. Gibson & J. Howell (eds.), *Proceedings of Semantics and Linguistic Theory (SALT) 16*. CLC Publications, Ithaca, NY.

Kratzer, Angelika. 1981. 'The notional category of modality'. In Hans-Jürgen Eikmeyer & Hannes Rieser (eds.), *Words, Worlds and Contexts*, pp. 38–74. Walter de Gruyter, Berlin. Reprinted in Partee & Portner (2002).

Kratzer, Angelika & Junko Shimoyama. 2002. 'Indeterminate pronouns: The view from Japanese'. Paper presented at the 3rd Tokyo Conference on Psycholinguistics.

Lasersohn, Peter. 1999. 'Pragmatic halos'. *Language* **75**(3), 522–551.

Lechner, Winfried. 2007. 'Comments on 'metalinguistic contrast in the grammar of Greek''. Handout, Workshop on Greek Syntax and Semantics, MIT. Commentary on Giannakidou & Stavrou (2008).

McCawley, James D. 1998. *The Syntactic Phenomena of English*. University of Chicago Press, Chicago.

Morzycki, Marcin. 2005. 'Size adjectives and adnominal degree modification'. In Effi Georgala & Jonathan Howell (eds.), *Proceedings of Semantics and Linguistic Theory (SALT) 15*. CLC Publications, Ithaca, NY.

Nakanishi, Kimiko. 2004a. *Domains of Measurement: Formal Properties of Non-Split/Split Quantifier Constructions*. Doctoral dissertation, University of Pennsylvania.

Nakanishi, Kimiko. 2004b. 'On comparative quantification in the verbal domain'. In Kazuha Watanabe & Robert B. Young (eds.), *Proceedings of Semantics and Linguistic Theory (SALT) 14*. CLC Publications, Ithaca, NY.

Partee, Barbara. 1987. 'Noun phrase interpretation and type-shifting principles'. In Jeroen Groenendijk, Dick de Jongh, & Martin Stokhof (eds.), *Studies in Discourse Representation Theory and the Theory of Generalized Quantifiers*, pp. 115–143. Foris, Dordrecht.

Partee, Barbara & Mats Rooth. 1983. 'Generalized conjunction and type ambiguity'. In Rainer Bäuerle, Christoph Schwarze, & Arnim von Stechow (eds.), *Meaning, Use, and Interpretation of Language*. Walter de Gruyter, Berlin. Reprinted in Paul Portner and Barbara Partee, eds. 2002. *Formal Semantics: The Essential Readings*. Blackwell.

Partee, Barbara H. & Paul Portner (eds.). 2002. *Formal Semantics: The Essential Readings*. Blackwell Publishing, Oxford.

Potts, Christopher. 2003. *The Logic of Conventional Implicatures*. Doctoral dissertation, UC Santa Cruz. Published in 2005 by Oxford University Press.

Potts, Christopher. 2007. 'The dimensions of quotation'. In Chris Barker & Polly Jacobson (eds.), *Proceedings from the Workshop on Direct Compositionality*, pp. 405–431. Oxford University Press, Oxford.

Rooth, Mats. 1985. *Association with Focus*. Doctoral dissertation, University of Massachusetts Amherst.

Rooth, Mats. 1992. 'A theory of focus interpretation'. *Natural Language Semantics* **1**(1), 75–116.

Rullmann, Hotze. 1995. *Maximality in the Semantics of* Wh-*Constructions*. Doctoral dissertation, University of Massachusetts Amherst.
Sawada, Osamu. 2007. 'Pragmatic properties of the Japanese scalar reversal adverbs'. Talk, Midwest Workshop on Semantics.
von Stechow, Arnim. 1984. 'Comparing semantic theories of comparison'. *Journal of Semantics* **3**, 1–77.
Winter, Yoad. 2005. 'Cross-categorial restrictions on measure phrase modification'. *Linguistics and Philosophy* **28**(2), 233–267.

morzycki@msu.edu
http://www.msu.edu/∼morzycki

Dept. of Linguistics and Languages
Michigan State University
East Lansing, MI 48824
USA