

BOOK CHAPTER DRAFT

Crosscategorical concerns

Marcin Morzycki
Michigan State University

This is a draft of a chapter for a book, *Modification*, in preparation for the Cambridge University Press series *Key Topics in Semantics and Pragmatics*. The [full manuscript](#) is also available as a single document on [my website](#), as are some [additional chapters](#). The book is something between a textbook for people who already have a basic background in semantics and a survey of work in the area. For a fuller explanation of its purpose and scope, consult chapter 1 in the full manuscript.

Broken links, marked with ??, are to other chapters not included in this document. (You can avoid this by looking at the full manuscript.) **Comments would be extremely helpful**, so please don't hesitate to [contact me](#) if you have any, even very minor ones.

Contents

1 Introduction	2
2 Amounts and cardinality scales	2
2.1 Quantity adjectives and number words	2
2.2 Amount comparatives	7
3 Gradability and non-adjectival predicates	9
3.1 Verbal gradability	9
3.2 Nominal gradability	11
4 Hedging and reinforcing across categories	14
5 Nonrestrictive modifiers	18

1 Introduction

One of the more interesting properties of the grammar of modification is that it can reveal connections across syntactic categories and across semantic types. There remain on our agenda a few issues that provide a taste of this—ones that involve multiple categories or interactions among several of the domains we’ve already examined.

This chapter takes up these crosscategorical issues. In section 2, we confront expressions that measure individuals by their amount, and the comparatives built out of these expressions. This requires combining our standing assumptions about degree semantics with assumptions about DPs and individuals. Section 3 examines the issue of cross-categorical gradability more broadly, focusing on verbs and nouns, both of which seem to be gradable in different ways and one of which introduces into the discussion some new parallels between individuals and events. Section 4 addresses the problem of crosscategorical modifiers that hedge or reinforce a claim, but can’t be readily assimilated to the degree modifiers we’ve already encountered in other domains. Section 5 focuses on an issue we’ve systematically set aside throughout the book: nonrestrictive interpretations of modifiers, which turn out to extend far beyond relative clauses, their traditional home. Part of that entails struggling with what ‘nonrestrictive’ actually means. Finally, section 6 investigates an aspect of meaning that is inherently subjective in a particular way that can be made precise—and that makes it possible for interlocutors to contradict each other truth-conditionally without being at odds pragmatically.

2 Amounts and cardinality scales

2.1 *Quantity adjectives and number words*

The aim of section 2 is to provide a sketch of how the assumptions we’ve made about degrees and degree constructions in chapters ?? and ?? might scale up to uses such as those in (1):

- (1)
 - a. There were many monkeys.
 - b. There were three monkeys.
 - c. There were more than three monkeys.
 - d. There were more monkeys than ~~there were~~ ferrets.

The important fact about these examples is that they involve evaluating or comparing on a scale of CARDINALITY, the number of individuals that make

up a plurality.

In order to get off the ground, we need to make some assumptions about plurals. The standard account is that of Link (1983), who distinguishes between atomic individuals (singular ones) and plural individuals formed by combining atomic individuals. For Link, both singular and plural individuals are of type e . Link's theory of plurals involves far more than just this, but these bare-bones assumptions alone will suffice for our current goals. We will, however, need one additional piece of equipment: a cardinality function, written $|x|$ (an alternative notation is $\#x$), that maps individuals to their cardinalities.¹ The cardinalities themselves are just natural numbers, so they form a scale. We therefore have every reason to regard them as degrees. This makes $|\cdot|$ a measure function, type $\langle e, d \rangle$.

As a first approximation, then, the denotation of *many* could simply be a property of having a cardinality that exceeds some standard:

$$(2) \quad \llbracket \text{many} \rrbracket = \lambda x . |x| > \mathbf{standard}$$

It's unclear what the argument of the **standard** predicate should be here, so I've omitted it. But there is a deeper problem. *Many* is an adjective. It doesn't very naturally occur predicatively in English ([?]*We are many*), but in attributive positions it happily combines with degree morphemes: *very many*, *as many*, and *too many* are all possible. The antonym of *many*, *few*, even has a synthetic comparative *fewer*. Perhaps *many* itself does too, pronounced not *manier* but *more*. In fact, *many*, *few*, *much*, and *little* form a class of QUANTITY ADJECTIVES with a number of interesting properties in common (see Solt 2009 and Rett 2008 for detailed exploration).² What is really necessary, then, is an adjective denotation, type $\langle d, et \rangle$, that relates an individual to its cardinality:³

$$(3) \quad \llbracket \text{many} \rrbracket = \lambda d \lambda x [|x| = d]$$

This could then combine with the POS morpheme to yield (4):

¹A true theory of plurals requires, minimally, an explicit definition of the individual-sum operation that combines individuals and an ordering relating individuals to individuals of which they are a part. It also involves a characterization of the difference between plural like *monkeys* and mass individuals like *water*.

²Solt (2009) calls these Q-adjectives, and Rett (2008), *m*-words.

³I've forsaken the period notation for brackets only to clarify that = is part of the denotation itself.

- (4) a. $\llbracket \text{POS} \rrbracket = \lambda G_{(d,et)} \lambda x . \exists d [G(d)(x) \wedge d > \mathbf{standard}(G)]$
 b. $\llbracket \text{POS } \textit{many} \rrbracket$
 $= \lambda x . \exists d [\llbracket \textit{many} \rrbracket (d)(x) \wedge d > \mathbf{standard}(\llbracket \textit{many} \rrbracket)]$
 $= \lambda x . \exists d [|x| = d \wedge d > \mathbf{standard}(\lambda y \lambda d' . |y| = d')]$

This holds of an individual iff the cardinality of that individual exceeds the standard. The puzzle of the argument of **standard** is now (arguably) solved as well. The standard is simply the standard for having a sufficiently large cardinality, provided by *many* itself.⁴ This can combine intersectively with a noun:

- (5) a. $\llbracket \text{POS } \textit{many } \textit{monkeys} \rrbracket$
 $= \lambda x . \llbracket \text{POS } \textit{many} \rrbracket (x) \wedge \llbracket \textit{monkeys} \rrbracket (x)$
 $= \lambda x . \exists d [|x| = d \wedge d > \mathbf{standard}(\llbracket \textit{many} \rrbracket)] \wedge \mathbf{monkeys}(x)$
 b. $\llbracket \textit{there were POS } \textit{many } \textit{monkeys} \rrbracket$
 $= \exists x \exists d [|x| = d \wedge d > \mathbf{standard}(\llbracket \textit{many} \rrbracket)] \wedge \mathbf{monkeys}(x)$

Thus *POS many monkeys* will hold of an individual that consists of monkeys and whose cardinality exceeds the standard, as in (5a). The full sentence would then be interpreted as in (5b), with the individual variable existentially closed—perhaps by the denotation of expletive *there*—yielding a sentence that simply asserts that there is a monkey plurality with a sufficiently large cardinality.

This is fine as far as it goes, but what about NUMBER WORDS or numerals such as *three*? Again, we have a few options. One would be to treat numerals as simply properties, as we considered for *many*:

- (6) $\llbracket \textit{three} \rrbracket = \lambda x [|x| = \mathbf{3}]$

This is actually a reasonably well-subscribed view of numeral meaning (Landman 2003, Chierchia 2010, Rothstein 2011). Certainly, *three* isn't gradable, as *more* is, so it seems unlikely to denote a gradable predicate.⁵ In the current context, though, this strategy has a major drawback: it doesn't accord how we have treated measure phrases. Numerals can occur as differential measure

⁴One possible qualm about this approach is that it suggests that in the right context, the standard for having a sufficiently large cardinality might be set at 1, thereby making 2 count as many. Indeed, the situation may be worse still: on a theory like that of Kennedy & McNally (2005) and Kennedy (2007), this scale would be lower-closed (it has a minimum value but no maximum), which in turn would **require** the standard to be set at the bottom in precisely this way.

⁵This, of course, doesn't mean it can't be analyzed as an adjective, though it's best to set the question of its syntactic category aside.

phrases in comparatives as in (7a) and (7b), and expressions anaphoric to numerals can occur in the measure phrase position of *many* as in (7c):

- (7) a. There were three more monkeys.
 compare to: Floyd was three inches taller
- b. There were more than three monkeys.
 compare to: Floyd seemed taller than six feet.
- c. There were three weasels, and there were also that many monkeys.
 compare to: Floyd was that tall.

Given our standing assumptions, such measure phrase positions are where we expect a degree-denoting expression.⁶

What all this suggests is that numerals aren't actually adjectives, but like measure phrases, just the names of degrees:

$$(8) \quad \llbracket \textit{three} \rrbracket = \mathbf{3}$$

But if that's the case, how do these combine compositionally with a noun? What we really need is an adjective like *many*, which would lead us back to the property denotation we originally desired, the one in (9b):

- (9) a. $\llbracket \textit{many} \rrbracket = \lambda d \lambda x [|x| = d]$
 b. $\llbracket \textit{three many} \rrbracket = \llbracket \textit{many} \rrbracket (\llbracket \textit{three} \rrbracket) = \lambda x [|x| = \llbracket \textit{three} \rrbracket]$
 $= \lambda x [|x| = \mathbf{3}]$

Inconveniently, that's not actually the structure we pronounce: **three many monkeys* is ill-formed. Since [Bresnan \(1973\)](#), the standard move at this point has been to suppose that *many* has an unpronounced variant, *MANY*. This might seem a kludge, but it turns out to be independently motivated. For example, *too many monkeys* is possible while **too monkeys* is not. On the other hand, **many enough monkeys* isn't possible while *enough monkeys* is. Yet *too* and *enough* are otherwise parallel. That suggests that some idiosyncratic morphophonological rules determine when and how the abstract *MANY* morpheme pronounced. *Too MANY* is pronounced *too many*, while *MANY enough* is pronounced as simply *enough*. Either way, these morphophonological considerations need not worry us here. With this assumption in place, the denotation of numerals is straightforward.

⁶This may actually be misguided, as [Schwarzschild \(2005\)](#) persuasively argues. It's probably ultimately preferable to assume that measure phrases have property denotations. Such a move has consequences that reverberate widely, beyond our current concerns, so we will set the issue aside.

For both numerals and *many*, a fairly innocent and independently-motivated further assumption is required to deal with attributive DPs such as (10a), namely, that in these cases there is a null existential determiner:

- (10) a. \emptyset_D three MANY monkeys frowned.
 b. $\llbracket \emptyset_D \rrbracket = \lambda P_{\langle e,t \rangle} \lambda Q_{\langle e,t \rangle} . \exists x [P(x) \wedge Q(x)]$
 c. $\llbracket \emptyset_D \rrbracket (\llbracket \text{three MANY monkeys} \rrbracket) (\llbracket \text{frowned} \rrbracket)$
 $= \exists x [|x| = \mathbf{3} \wedge \text{frowned}(x)]$

Assuming a null determiner is perfectly plausible for bare plurals and mass nouns in general (though see Chierchia 1998 for a richly articulated theory of the relation between determiners and mass nouns). It also accords with the possibility of using an overt determiner in this position: *the three monkeys, the many monkeys I saw*. Nevertheless, this could be viewed as a kind of decomposition of the meaning of MANY. Further pursuing a decomposition strategy may reap further rewards (Solt 2009).

These results were possible because of the well-motivated assumption that *many* is an adjective and that numerals are interpreted with its help, but this assumption is not a universal one. In work in Generalized Quantifier Theory like Barwise & Cooper (1981) and Keenan & Faltz (1985), *many, more*, and numerals are treated as determiners. Interesting results follow from doing this, but syntactic and compositional considerations point in another direction (see Hackl 2000 for extensive discussion). Another approach to these issues, advanced in Cresswell (1976), is to treat not *many* but rather the noun itself as having a degree argument. A noun would thus relate an individual and a degree representing its cardinality. This idea isn't widely adopted, but it may provide a means of avoiding positing the null MANY. There are also other reasons to suppose that nouns may have degree arguments, although in an entirely different way (see section 3.2).

There is much more would could say about the syntax and semantics of numerals. One of the more salient properties of the approach here is that it gives numerals an 'exactly' interpretation: *three monkeys* is a property of a plurality with three members. That could be changed straightforwardly into an 'at least' interpretation by replacing the = in $\llbracket \text{MANY} \rrbracket$ with \geq , but there are reasons not to do this. First, any plurality with four members must contain as a part of it a plurality with three, so in many circumstances an 'at least' flavor would nevertheless be achieved (if there is a four-monkey plurality, there must also be a three-monkey one that's part of it). Second, there are actually some good reasons to think that an 'exactly' interpretation of number terms is the right one, and they have been accumulating (Geurts 2006, Breheny 2008, Huang et al. 2012). This runs counter to the longstanding and widely-accepted Gricean view in which *Floyd has three children* asserts that

Floyd has at least three children, and it is only a conversational implicature that he has no more than three (Grice 1975, Horn 1972, Levinson 1983).

This barely scratches the surface of how numerals work, or for that matter *many* and its relatives (*few*, *little*, and *much*). For discussion of measure phrases and amount measurement in nominal domain and its connections to other areas, see Krifka (1989), Schwarzschild (2006); for a detailed and empirical careful study of words like *many* and *much* that reconciles some competing pressures and examines the lexical semantics in detail, see Solt (2009, 2011b); for a fine-grained theory of the compositional properties of numerals, see Ionin & Matushansky (2006); for work on these issues that also incorporates scalar modifiers such as *at least* into the picture, see Geurts & Nouwen (2007).

2.2 Amount comparatives

We've only accomplished half our task. The other half was to sketch an outline of AMOUNT COMPARATIVES such as those in (11):

- (11) a. There were more than three monkeys.
b. There were more monkeys than there were ferrets.

These are also often called NOMINAL COMPARATIVES.⁷

It turns out that we have a version of a standard treatment of these expressions already, if we assemble the existing building blocks just right. First, beginning with the phrasal comparative in (11a), the structure should be analogous to (12a), with the gradable predicate *tall* replaced by the abstract cardinality predicate MANY:

- (12) a. Floyd is [taller than six feet].
b. There were [MANY-er than three monkeys].

Because *more* is a pronunciation of *MANY-er*, it's customary in these contexts to write the comparative morpheme as *-er*. The structures in (12) are too simple, though. They don't take into account degree movement, the process by which a DegP, which denotes a generalized quantifier over degrees, vacates its base position and leaves behind a degree trace (see chapter ??). The actual structure for (12b) is in (13b), derived by movement from (13a):

⁷I find this term unfortunate because it suggests that it's the noun that is the gradable predicate. As we'll see, it is individuals and their cardinalities or amounts, not nominal predicates, that are the crucial ingredient here—and there are in fact different structures that do indeed seem to grade nouns (see section 3.2).

- (13) a. There were [-er than three] MANY] monkeys.
 b. [-er than three] $\emptyset \lambda d_1$ there were [d_1 MANY] monkeys

We'll return to the assumption from chapter ?? than phrasal *than* has no interpretation, and to the denotation for the comparative morpheme in (14a). The computation would thus be:

- (14) a. $\llbracket \text{-er} \rrbracket = \lambda d \lambda D_{(d,t)} . \mathbf{max}(D) > d$
 b. $\llbracket \text{than three} \rrbracket = \llbracket \text{three} \rrbracket = \mathbf{3}$
 c. $\llbracket d_1 \text{ MANY} \rrbracket = \llbracket \text{MANY} \rrbracket (\llbracket d_1 \rrbracket) = \lambda x [|x| = d_1]$
 d. $\llbracket d_1 \text{ MANY monkeys} \rrbracket = \lambda x [\llbracket d_1 \text{ MANY} \rrbracket (x) \wedge \llbracket \text{monkeys} \rrbracket (x)]$
 $= \lambda x [|x| = d_1 \wedge \mathbf{monkeys}(x)]$
 e. $\llbracket \text{there were } [d_1 \text{ MANY}] \text{ monkeys} \rrbracket$
 $= \exists x [|x| = d_1 \wedge \mathbf{monkeys}(x)]$
 f. $\llbracket \emptyset \lambda d_1 \text{ there were } d_1 \text{ MANY monkeys} \rrbracket$
 $= \lambda d_1 . \exists x [|x| = d_1 \wedge \mathbf{monkeys}(x)]$
 g. $\llbracket \text{-er} \rrbracket (\llbracket \text{than three} \rrbracket) (\llbracket \emptyset \lambda d_1 \text{ there were } d_1 \text{ MANY monkeys} \rrbracket)$
 $= \mathbf{max}(\llbracket \emptyset \lambda d_1 \text{ there were } d_1 \text{ MANY monkeys} \rrbracket) >$
 $\llbracket \text{than three} \rrbracket$
 $= \mathbf{max}(\lambda d_1 . \exists x [|x| = d_1 \wedge \mathbf{monkeys}(x)]) > \mathbf{3}$

The result is that the number of monkeys (more precisely, the maximum number that is the cardinality of a monkey plurality) is greater than three, as desired.

What about a full clausal comparative? We need to return to our denotation for clausal *than* in (16a), which contributes a maximality operator, but beyond that it's smooth sailing:

- (15) a. There were more monkeys than there were ferrets.
 b. [-er than $\emptyset \lambda d_2$ there were [d_2 MANY] ferrets]
 λd_1 there were [d_1 MANY] monkeys

- (16) a. $\llbracket \text{than} \rrbracket = \lambda D_{(d,t)} . \mathbf{max}(D)$
 b. $\llbracket \emptyset \lambda d_2 \text{ there were } [d_2 \text{ MANY}] \text{ ferrets} \rrbracket$
 $= \lambda d_2 . \exists y [|y| = d_2 \wedge \mathbf{ferrets}(y)]$
 c. $\llbracket \text{than } \emptyset \lambda d_2 \text{ there were } [d_2 \text{ MANY}] \text{ ferrets} \rrbracket$
 $= \mathbf{max}(\lambda d_2 . \exists y [|y| = d_2 \wedge \mathbf{ferrets}(y)])$
 d. $\llbracket \text{-er} \rrbracket (\llbracket \text{than } \emptyset \lambda d_2 \text{ there were } [d_2 \text{ MANY}] \text{ ferrets} \rrbracket)$
 $(\llbracket \lambda d_1 \text{ there were } d_1 \text{ MANY monkeys} \rrbracket)$
 $= \mathbf{max}(\lambda d_1 . \exists x [|x| = d_1 \wedge \mathbf{monkeys}(x)]) >$
 $\mathbf{max}(\lambda d_2 . \exists y [|y| = d_2 \wedge \mathbf{ferrets}(y)])$

Again, the desired result: the maximum number that is the cardinality of a monkey plurality exceeds the maximum number that is the cardinality of a ferret plurality.

This overall picture is more or less a standard one, following a trajectory from [Bresnan \(1973\)](#) through [Hackl \(2000\)](#) and to more recent work like [Solt \(2009\)](#) and [Wellwood et al. \(2012\)](#).

3 Gradability and non-adjectival predicates

3.1 Verbal gradability

The distribution of measure phrases and degree constructions seems to suggest that some verbs are gradable and others aren't:

- (17) a. Floyd hates natto $\left\{ \begin{array}{l} \text{a lot} \\ \text{more than Clyde} \\ \text{as much as anyone} \end{array} \right\}$.
- b. Floyd believes in capitalism $\left\{ \begin{array}{l} \text{a lot} \\ \text{more than Clyde} \\ \text{as much as anyone.} \end{array} \right\}$

- (18) ??Floyd $\left\{ \begin{array}{l} \text{died} \\ \text{arrived} \\ \text{solved this problem} \end{array} \right\} \left\{ \begin{array}{l} \text{a lot} \\ \text{more than Clyde} \\ \text{as much as anyone} \end{array} \right\}$.

The natural interpretation of this would be that some verbs have degree arguments and others simply lack them. There is a twist, though:

- (19) Floyd $\left\{ \begin{array}{l} \text{talked} \\ \text{slept} \\ \text{smokes} \end{array} \right\} \left\{ \begin{array}{l} \text{a lot} \\ \text{more than Clyde} \\ \text{as much as anyone} \end{array} \right\}$.

This seems to be degree modification, but in a very specific sense. It doesn't seem to measure an event along a scale provided lexically by the particular verb, as in (17). Rather, it measures along a scale of amount, like amount comparatives in the nominal domain. These two kinds of gradability might be called *LEXICAL* and *AMOUNT* gradability, respectively. ([Bolinger 1972](#) used the terms 'intensity' and 'extensibility'; [Caudal & Nicolas 2005](#) favor 'intensity' and 'quantity'.)

Lexical gradability is the style favored by adjectives, and it can be accommodated in a similar way in verbs: by providing the appropriate verbs with a degree argument ([Caudal & Nicolas 2005](#), [Villalta 2007](#), [Piñón 2008](#),

Bochnak 2010, Anderson to appear; see Rett 2011 for reasons not to). This has interesting consequences, including the probable need to add a verbal POS morpheme.

For amount gradability, though, a different strategy is needed. The theory appropriate for lexical gradability, based in verbal degree arguments, risks failing to capture an important generalization: all verbs with an appropriate semantics support such amount modification.⁸ What seems to be necessary are tools analogous to those used for amount gradability in DP. This is the path pursued in Nakanishi (2004b,a, 2007) and Wellwood et al. (2012). Nakanishi proposes that that because events have a part structure analogous to that of nouns (Bach 1986), they can be measured similarly: by their cardinality (for count-noun-like events), by their amount (for mass-noun-like events), and in other ways, including spatiotemporally. This can be represented with a verbal analogue of MANY, which I'll write MUCH:⁹

$$(20) \quad \llbracket \text{MUCH} \rrbracket = \lambda d \lambda e [\mathbf{amount}(e) = d]$$

This can be interpreted intersectively just like MANY, yielding an interpretation for (21) as in (22):

$$(21) \quad \begin{array}{l} \text{a. Floyd talked more than Clyde talked.} \\ \text{b. } [-\text{er than } \emptyset \lambda d_2 \text{ Clyde talked } [d_2 \text{ MUCH}]] \\ \qquad \qquad \qquad \lambda d_1 \text{ Floyd talked } [d_1 \text{ MUCH}] \end{array}$$

$$(22) \quad \begin{array}{l} \text{a. } \llbracket \text{than } \emptyset \lambda d_2 \text{ Clyde talked } [d_2 \text{ MUCH}] \rrbracket \\ \qquad = \mathbf{max}(\lambda d_2 . \exists e [\mathbf{talked}(\mathbf{Clyde})(e) \wedge \mathbf{amount}(e) = d_2]) \\ \text{b. } \llbracket \lambda d_1 \text{ Floyd talked } [d_1 \text{ MUCH}] \rrbracket \\ \qquad = \lambda d_1 . \exists e' [\mathbf{talked}(\mathbf{Floyd})(e') \wedge \mathbf{amount}(e') = d_1] \\ \text{c. } \llbracket -\text{er} \rrbracket (\llbracket \text{than } \emptyset \lambda d_2 \text{ Clyde talked } [d_2 \text{ MUCH}] \rrbracket) \\ \qquad \qquad \qquad (\llbracket \lambda d_1 \text{ Floyd talked } [d_1 \text{ MUCH}] \rrbracket) \\ \qquad = \mathbf{max}(\llbracket \lambda d_1 \text{ Floyd talked } [d_1 \text{ MUCH}] \rrbracket) > \\ \qquad \qquad \qquad \llbracket \text{than } \emptyset \lambda d_2 \text{ Clyde talked } [d_2 \text{ MUCH}] \rrbracket \\ \qquad = \mathbf{max}(\lambda d_1 . \exists e' [\mathbf{talked}(\mathbf{Floyd})(e') \wedge \mathbf{amount}(e') = d_1]) > \\ \qquad \qquad \qquad \mathbf{max}(\lambda d_2 . \exists e [\mathbf{talked}(\mathbf{Clyde})(e) \wedge \mathbf{amount}(e) = d_2]) \end{array}$$

This winds up meaning that the amount of a talking by Floyd exceeds the amount of a talking by Clyde.

⁸For more on what ‘an appropriate semantics’ means if not simply having a degree argument, see Nakanishi (2007) and Wellwood et al. (2012).

⁹This departs considerably from her proposal in implementation and abstracts away from numerous additional features.

Interestingly, lexical gradability in verbs can arise not just idiosyncratically for particular lexical items, but systematically for whole classes of them. This can have consequences for their temporal semantics. One such class is DEGREE ACHIEVEMENTS such as *widen*, *cool*, *darken*, and *ripen*.¹⁰ Kennedy & Levin (2008) argue that they are built around a core adjective meaning and inherit their gradability from it.

Positing lexical degree arguments for verbs also predicts that there should be verbal counterparts of degree morphemes—and indeed, there are:

(23) The pie cooled $\left\{ \begin{array}{l} \text{halfway} \\ \text{slightly} \\ \text{fully} \\ \text{completely} \end{array} \right\}$.

This example involves a degree achievement, and in light of Kennedy & Levin’s analysis it’s what we might expect. Whether a verb has an adjectival core or not, so long as it has a degree argument it should be associated with a particular scale structure to which degree words are sensitive. The line between these and manner modifiers is not always easy to draw, though:

(24) Floyd $\left\{ \begin{array}{l} \text{loves monkeys} \\ \text{believes in capitalism} \end{array} \right\} \left\{ \begin{array}{l} \text{intensely} \\ \text{passionately} \\ \text{deeply} \\ \text{fervently} \\ \text{with all his heart} \end{array} \right\}$.

To some extent, the same issue can arise in AP-modifying contexts (e.g. *passionately/deeply affectionate*), but the issue is especially stark with verbs.

3.2 Nominal gradability

If there are two different kinds of gradability in the verbal domain, one might wonder whether there are two kinds in the nominal domain too. We’ve already seen amount gradability among nominals in section 2. What about lexical gradability? Are there nouns that have a degree argument lexically?

This is very much an open question, but some of the facts that bear on it are clear:

¹⁰They’re called ‘achievements’ in view of their place in the aspectual classification of Vendler (1967), Dowty (1979) and others.

- (25) a. Floyd is a(n) $\left\{ \begin{array}{l} \text{big} \\ \text{true} \\ \text{total} \\ \text{absolute} \end{array} \right\} \left\{ \begin{array}{l} \text{idiot} \\ \text{asshole} \end{array} \right\}$.
- b. Floyd is $\left\{ \begin{array}{l} \text{a bigger} \\ \text{more of a(n)} \end{array} \right\} \left\{ \begin{array}{l} \text{idiot} \\ \text{asshole} \end{array} \right\}$ than Clyde.
- c. Floyd is $\left\{ \begin{array}{l} \text{such} \\ \text{as much} \end{array} \right\} \text{a(n)} \left\{ \begin{array}{l} \text{idiot} \\ \text{asshole} \end{array} \right\}$.

Pre-theoretically, these certainly seem to be grading the degree to which Floyd is an idiot or an asshole. This general issue, recognized since at least Bolinger (1972), has begun to be examined formally (Morzycki 2005, 2009, 2012b, Sassoon 2007, de Vries 2010, Xie 2010, Bylinina 2011, Constantinescu 2011).

The constructions in (25) are actually quite varied, and probably require distinct analyses, but perhaps the least complicated of them involves what I have argued (Morzycki 2005, 2009, 2012b) are overt adnominal degree morphemes:

- (26) an $\left\{ \begin{array}{l} \text{true} \\ \text{complete} \\ \text{absolute} \\ \text{slight} \\ \text{veritable} \end{array} \right\}$ idiot

These are, of course, all homophonous with adjectives, so one has to demonstrate their distinctness. Among the defining characteristics of adjectives in English is the ability to occur as the complement to *seem*. None of the expressions in (26) can occur there on a degree reading:

- (27) That idiot seems $\left\{ \begin{array}{l} \# \text{real} \\ \# \text{complete} \\ \# \text{absolute} \\ \# \text{slight} \\ \# \text{veritable} \end{array} \right\}$.

If these were adjectives, one might also expect them to accept degree modification of their own. But they don't:

- (28) a. *a $\left\{ \begin{array}{l} \text{more utter} \\ \text{utterer} \end{array} \right\}$ idiot than Clyde

$$b. \ *a \left\{ \begin{array}{l} \text{quite} \\ \text{rather} \\ \text{somewhat} \\ \text{really} \end{array} \right\} \left\{ \begin{array}{l} \#real \\ \#complete \\ \#absolute \\ \#slight \\ \#veritable \end{array} \right\} \text{idiot}$$

Nor do they nominalize in the adjectival style. One can't refer to **the utterness of the idiot*, for example. Even beyond this, one might suspect that these are distinct from their adjective homophones from meaning alone. A *real idiot*, for example, is not one that isn't artificial; a true one isn't one that's not false; a total one isn't one that isn't incomplete.

These all suggest that there is a distinct degree morpheme position inside the extended NP. That in turn suggests that nouns, like adjectives and verbs, can have degree arguments. That wouldn't entail that **all** nouns have them, though. It might be restricted to the most adjective-like of nouns, like *idiot*. Unlike most nouns, it has an especially simple meaning, involving a single dimension of measurement: idiocy. This contrasts with a more ordinary noun like *chair*: there are many different factors that go into making something a chair. And indeed, *chair* resists degree readings with many of these modifiers:

$$(29) \ \#a(n) \left\{ \begin{array}{l} \text{complete} \\ \text{absolute} \\ \text{slight} \\ \text{veritable} \end{array} \right\} \text{chair}$$

That said, there are various ways of dealing with these facts. The description above accords with [Morzycki \(2005, 2009\)](#). [Constantinescu \(2011\)](#) and [Morzycki \(2012b\)](#) both move in a different direction, away from providing nouns with degree arguments. Constantinescu suggests that degree-like interpretations may arise via different means entirely. [Morzycki \(2012b\)](#) suggests that degrees are involved, but that nouns and degrees are associated only indirectly, via other conceptual and compositional mechanisms.

As for the other forms of apparent nominal degree modification, they seem to be a mixed bag. Size adjectives are striking in that it is only adjectives of bigness that get degree readings ($\#$ here indicates the unavailability of the relevant reading):

$$(30) \ \left\{ \begin{array}{l} \text{big} \\ \text{huge} \\ \#miniscule \\ \#tiny \end{array} \right\} \text{idiot}$$

This fact holds true across numerous languages. (An account can be found in

Morzycki 2005, 2009.)

Constantinescu discusses forms such as *such an idiot*, which she suggests are related to the ordinary use of *such* as an anaphor to kinds (Carlson 1977). The *more of a* construction may perhaps be amenable to an analysis as a form of metalinguistic comparison, which would make it only indirectly a means of grading nouns.

4 Hedging and reinforcing across categories

Degree modifiers like *very* and *slightly* are well-behaved in the sense that they occur where we would expect expressions with such meanings to occur: in the vicinity of an adjective. There is, however, a much larger class of expressions that do work that—like that of well-behaved degree modifiers—might be characterized as hedging and reinforcing whose distribution is considerably more free. These come in a variety of flavors and with a variety of names, and don't all form a natural class. Among the examples:

- (31) a. It's $\left. \begin{array}{l} \text{precisely} \\ \text{approximately} \\ \text{more or less} \\ \text{almost} \\ \text{nearly} \\ \text{barely} \\ \text{damn near} \\ \text{not quite} \end{array} \right\} \left\{ \begin{array}{l} \text{three o'clock} \\ \text{the right answer} \\ \text{60 centimeters long} \\ \text{20\% above the average} \end{array} \right\}.$
- b. $\left. \begin{array}{l} \text{almost} \\ \text{nearly} \\ \text{damn near} \\ \text{not quite} \end{array} \right\} \text{every ferret is furry}$

Many of these expressions are sometimes referred to as adverbs. Perhaps there's something to that—they have the *-ly* suffix, if nothing else—but ultimately, labeling them adverbs isn't particularly helpful. Neither their distribution nor their meaning is a close match to that of more prototypical adverbs. The morphological fact of the *-ly* suffix might need explaining, though that explanation might turn out to be entirely historical and have no direct bearing on the synchronic grammar. Certainly, many such expressions don't have at all the form of adverbs (*more or less*, *damn near*), or presumably an adverbial etymology. Moreover, expressions with which many of these do form a semantic natural class can occur in clearly non-adverbial categories. Appalachian English, for example, has a form *liketa* ([lɪktə]) that resembles many uses of *almost* but is clearly verbal (Johnson 2013).

Expressions like *almost* and *barely* are occasionally called PROXIMATIVE or APPROXIMATIVE modifiers. A broader range of such expressions have been called APPROXIMATORS (e.g., Sauerland & Stateva 2007), HEDGES (for the weakening ones; Lakoff 1973), or SLACK REGULATORS (Lasersohn 1999).¹¹

Probably the best-studied such expression is *almost* (Adams 1974, Sadock 1981, Atlas 1984, Partee 1986, Hitzeman 1992, Partee 1995, Sevi 1998, Rapp & von Stechow 1999, Morzycki 2001, Horn 2002, Rotstein & Winter 2004, Penka 2005, 2006, Nouwen 2006, Amaral 2007, Amaral & Del Prete 2010, van Gerrevink & de Hoop 2007, Jayez & Tovena 2008, Pozzan & Schweitzer 2008, Horn 1991, Kamoen et al. 2011). It once figured intimately in arguments for lexical decomposition of verbs like *kill* because of a possible ambiguity in (32) (McCawley 1971):

- (32) Floyd almost killed Clyde.
 a. Floyd acted to cause Clyde to become almost dead.
 b. Floyd acted to almost cause Clyde to become dead.
 c. Floyd almost acted to cause Clyde to become dead.

In (32a), Floyd might have shot Clyde and injured him almost mortally; in (32b), he might have shot Clyde and missed him only narrowly; in (32c), he might merely not even have done anything like this, but seriously considered the possibility. Independently, *almost* was of interest as a diagnostic for universal quantification (Horn 1972, Carlson 1977, Kadmon & Landman 1993):

$$(33) \quad \text{almost} \left\{ \begin{array}{l} \text{every} \\ \text{all} \\ \# \text{some} \\ \# \text{few} \end{array} \right\}$$

Its other important properties include sensitivity to scalar properties of predicates. With telic VPs, *almost* gives rise to an ‘almost complete’ reading that is absent with atelic VPs, as (34) reflects:

- (34) a. Floyd almost $\left\{ \begin{array}{l} \text{ran three miles} \\ \text{reached the top} \end{array} \right\}$. (telic)
 b. Floyd almost $\left\{ \begin{array}{l} \text{ran around} \\ \text{reached the top} \end{array} \right\}$. (atelic)

¹¹The nice thing about the term ‘slack regulator’ is that it clearly includes both weakening modifiers like *approximately* and strengthening ones like *precisely*. Its drawback is that it refers not to a class of expressions pre-theoretically but rather to one defined by the proposal in Lasersohn (1999). It would be nice to have a term like this that’s theory-neutral. Perhaps ‘modulator’ would work.

The only readings available for (34b) involve scenarios in which Floyd has almost begun an action, not ones in which he has almost completed it. A related restriction is that *almost* is incompatible with adjectives that lack upper-closed scales (or, in slightly different terminology, that don't denote total predicates; Hitzeman 1992):

$$(35) \quad \text{The swimming pool is almost } \left\{ \begin{array}{l} \text{full} \\ \text{complete} \\ \# \text{incomplete} \\ \# \text{long} \end{array} \right\}.$$

Barely and *hardly*, unlike *almost*, also license negative polarity items:

$$(36) \quad \text{Floyd } \left\{ \begin{array}{l} \text{barely} \\ \text{hardly} \\ \# \text{almost} \end{array} \right\} \text{ saw anyone at all.}$$

The meaning of *almost* is usually construed as involving two inferences, the status of one of which is controversial:

- (37) It's almost the case that it's raining.
 a. *entails*: It's close to being that case that it's raining.
 b. *possibly entails?*: It's not raining.

If (37b) isn't an entailment, it may be a conversational implicature or be in some other way, in Horn's phrase, 'assortorically inert'. See Nouwen (2006) and Horn (1991) for recent discussion of its status.

The ability to modify quantificational determiners seems to be a property of the *almost* class alone. Other expressions that hedge and reinforce lack can't do this:

$$(38) \quad \# \left\{ \begin{array}{l} \text{Exactly} \\ \text{Approximately} \\ \text{Definitely} \\ \text{Outright} \\ \text{Flat-out} \\ \text{Sorta} \end{array} \right\} \left\{ \begin{array}{l} \text{every} \\ \text{all the} \end{array} \right\} \text{ deer were spotted.}$$

Unsurprisingly, there are more general restrictions of various kinds on the categories different classes of approximator can attach to. *Loosely speaking*, for example, is a speech-act adverbial and, setting aside parenthetical uses, can only occur quite high in the clause (see section ??).

Another interesting distinction among such expressions is observed in Sauerland & Stateva (2007) (the examples are theirs):

- (39) a. What John cooked was $\left. \begin{array}{l} \text{exactly} \\ \text{approximately} \end{array} \right\}$ fifty tapas.
 b. #What John cooked was $\left. \begin{array}{l} \text{exactly} \\ \text{approximately} \end{array} \right\}$ Beef Stroganoff.

Their analysis of this hinges on the idea that *fifty tapas* and *Beef Stroganoff* are vague in different ways. In our terms, one might say that *fifty tapas* is imprecise but essentially not vague,¹² but *Beef Stroganoff* is vague. *Sorta* seems to have the opposite behavior in this respect (Anderson 2013, to appear):

- (40) a. ??What John cooked was sorta fifty tapas.
 b. What John cooked was sorta Beef Stroganoff.

Anderson frames an account of this that relies on modulating imprecision.

In various contexts and to varying extents, we have encountered many of the analytical strategies that are employed to account for these expressions. One strategy, prominent in the analysis of *almost*, is intensional. The crucial component of meaning is the proximal ‘close to true’ one. This can be expressed as requiring that a proposition be true in all worlds that are relevantly similar (i.e., sufficiently close) to the evaluation world (Sadock 1981, Rapp & von Stechow 1999, Morzycki 2001). Zaroukian (2011) shows an intensional strategy may be useful for other approximators, with interesting results.

Another line of attack is some notion of modulating imprecision. There are different ways this can be implemented. Lasersohn (1999)’s halos and operations defined on them are one. Sauerland & Stateva (2007) suggest an alternative approach involving scale granularity.

Yet another option, which we haven’t encountered yet and is in fact a bit fuzzy at the margins, is speaker commitment. A proposition expressed with *definitely*, for example, commits the speaker more strongly than one without. To cash this out explicitly, of course, it’s necessary to have a well-developed and predictive theory of speaker commitment.

Finally, there is the familiar option of appealing to degrees and treating expressions as degree modifiers. That’s the move Morzycki (2012a) makes for *downright* and *flat-out*, for example. On such a strategy, we might expect these expressions to be only as crosscategorical as degree arguments

¹²This isn’t quite true. *Tapas* remains a potential source of vagueness. It’s also worth pointing out that *exactly* is a bit more flexible than this example alone suggests:

- (i) a. Beef Stroganoff was exactly what John cooked.
 b. We expected something like Beef Stroganoff, and indeed, it was exactly Beef Stroganoff that John cooked.

More discussion of these issues can be found in Zaroukian (2011, 2013).

themselves are. This distinguishes it from the other strategies, all of which involve notions—modality, imprecision, and speaker commitment—that are inherently quite crosscategorical. (Though not necessarily equally so, and certain theories of each may predict more or less crosscategoriality than others.)

This all leads to a bigger picture that’s both interesting and a bit muddled. In part, the muddle is a consequence of discussing different expressions simultaneously, as I have done. But such a bird’s-eye view may be useful because there is also something real about the muddle. There are probably several different phenomena jostling with each other here, each in need of explanation and more precise delineation. There are also several different analytical strategies jostling with each other, all of which probably play some role in the grammar and may explain certain of these phenomena. Part of what makes it all interesting is that the bigger picture is likely to come more sharply into view as aspects of the larger problem are explored in further detail.

5 Nonrestrictive modifiers

A classic and foundational distinction made in the grammar of modification—particularly for relative clauses—is between RESTRICTIVE and NONRESTRICTIVE modifiers. Alternative terms for ‘nonrestrictive modifiers’ include SUPPLEMENTS, PARENTHETICALS, and APPOSITIVES. [Huddleston & Pullum \(2002\)](#) also advocate INTEGRATED in place of ‘restrictive’.

The basic distinction in relative clauses is found in (41):

- (41) a. All the linguists that live in Michigan have learned to pronounce ‘Novi’.
b. All the linguists, who live in Michigan, have learned to pronounce ‘Novi’.

The claim in (41a) is a perfectly plausible one involving a community near Detroit. The claim in (41b) is completely implausible, as it requires that all linguists both live in Michigan and pronounce ‘Novi’ correctly. This example goes out of its way to make the difference clear—it’s apparent prosodically (the commas), truth-conditionally, and in the complementizer *that*—but real life isn’t always so tidy. *Who* can and routinely does head restrictive relatives, for example (despite a prescriptive fiction to the contrary). Simply removing the comma intonation in (41b) demonstrates this, by imbuing the sentence with the truth-conditionally weaker meaning of (41a). As [Huddleston & Pullum \(2002\)](#) point out, the truth-conditional effect is not always present: in *the bachelors that are unmarried*, the relative is grammatically restrictive

but has no truth-conditional impact.

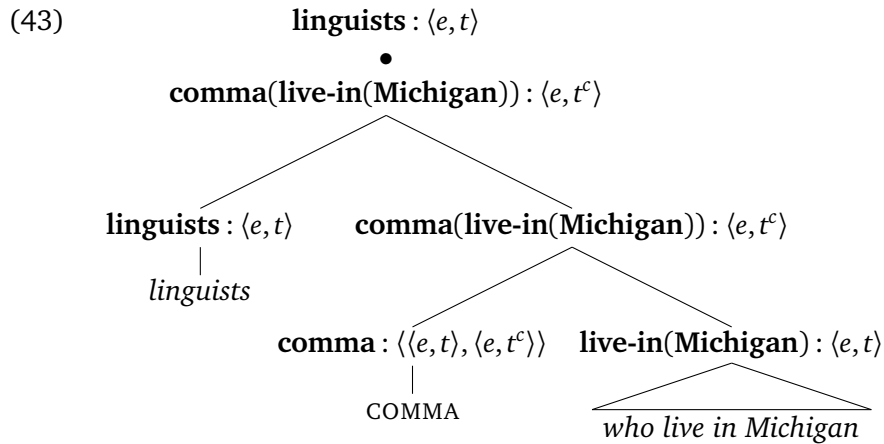
The most influential theory of the semantics of these expressions is that of Potts (2003), who argues that they contribute CONVENTIONAL IMPLICATURES (see also section ??), a kind of meaning Grice (1975) originally recognized, but which turns out to be not at all like conversational implicatures. Rather, conventional implicatures make a secondary semantic contribution, one independent of the at-issue truth-conditional meaning of the sentence. For Potts, this is represented as a distinct tier or dimension of meaning, one that the compositional semantics sets aside—as though saving it for later—as it works its way up the tree. Setting it aside in this way reflects that conventional implicatures are always interpreted (as though) with matrix scope, never contribute to the descriptive meaning of higher nodes in the tree, create the sense of a that the sentence is making more than one assertion at a time, and involve the perspective of the speaker (but see Amaral et al. 2007, Schlenker 2007, Harris & Potts 2009 for qualifications).

This is implemented by distinguishing separate types for expressions that give rise to conventional implicatures, types which end not in t but in t^c . The meaning of a nonrestrictive relative like *who live in Michigan*, for Potts, involves an operator COMMA that shifts a predicate from type $\langle e, t \rangle$ to $\langle e, t^c \rangle$. It can therefore shift a the regular property-denoting relative clause in (42a) to the nonrestrictive one in (42b):

- (42) a. $\llbracket \textit{who live in Michigan} \rrbracket = \textbf{live-in}(\textbf{Michigan})$ type: $\langle e, t \rangle$
 b. $\llbracket \textbf{COMMA } \textit{who live in Michigan} \rrbracket$
 = $\textbf{comma}(\textbf{live-in}(\textbf{Michigan}))$ type: $\langle e, t^c \rangle$

The type has to be indicated explicitly in this system because it can't be read off the lambda expressions (which are identical in (42a) and (42b)).

With appropriate rules in place for manipulating conventional-implicature types, this yields trees like (43):



The material below the bullet is the set-aside conventional implicature.

Relative clauses and nominal appositives aren't the only potentially nonrestrictive modifiers. Another case Potts cites is NOMINAL APPOSITIVES like *Lance, a cyclist*. But there are others. One kind involves expressive modifiers like *fucking* and *damn*, as Potts observes:

- (44) Floyd (fucking) lost his $\left\{ \begin{array}{l} \text{fucking} \\ \text{damn} \end{array} \right\}$ glove again.

These too can be analyzed as contributing conventional implicatures. There might be a distinction worth making between conventional implicatures and EXPRESSIVE MEANING (see also Kratzer 1999 and Potts 2007, McCready 2010, Gutzmann 2011, 2013), but if so, it's not immediately relevant.

Another kind of nonrestrictive meaning is involved in (45), first observed by Bolinger (1967) (and further explored in Larson & Marušič 2004, who provide this particular example), which has two readings:

- (45) Every unsuitable word was deleted.
 a. *restrictive*: 'Every word that was unsuitable was deleted.'
 b. *nonrestrictive*: 'Every word was deleted. They were unsuitable.'

This reading is unavailable postnominally in English:

- (46) Every word unsuitable was deleted.
 a. *restrictive*: 'Every word that was unsuitable was deleted.'
 b. *#nonrestrictive*: 'Every word was deleted. They were unsuitable.'

In Spanish and Italian, the situation is slightly different: prenominal adjectives are obligatorily **nonrestrictive**, and postnominal ones are ambiguous

(Cinque 2003, 2010, Demonte 2008, Katz 2007; examples are Spanish, from Demonte 2008):

- (47) La débil voz apenas se oía.
'The soft voice could hardly be heard.'
a. #*restrictive*: 'The voice that was soft could hardly be heard.'
b. *nonrestrictive*: 'The voice could hardly be heard. It was soft.'

Across languages, the nonrestrictiveness of these adjectives is also reflected in their resistance to focus (Umbach 2006).

Adverbs also demonstrate a contrast in nonrestrictiveness, as Shaer (2000, 2003) showed. This is perhaps clearest in embedded contexts (the example is a variation of one in Peterson 1997):

- (48) a. It's regrettable that the Titanic slowly sank.
b. It's regrettable that the Titanic sank slowly.

In (48b), only a restrictive reading is available on which the slowness of the sinking figures in the regret.

Morzycki (2008) argued that all these nonrestrictive modifiers—adjectives and adverbs alike—should be viewed as contributing expressive meaning, like *fucking*, and be represented in Potts' conventional-implicature dimension. Katz (2007) further articulates this sort of approach and provides additional evidence. I also suggested that the crosscategorical and crosslinguistic facts point to another conclusion: that there is a grammatical connection between expressive interpretations and left branches in the syntax. This is further reflected in the behavior of modifiers that are lexically (i.e., inherently) expressive:

- (49) a. He *fucking* ate the whole goddamn thing.
b. #He ate the whole goddamn thing *fucking*.

(50) a. He'll *damn well* invade Iran.
b. #He'll invade Iran *damn well*.

Both *fucking* and *damn well* get their usual expressive meaning on the left. When on the right, as in the (b) sentences, the only possible interpretations are irrelevant non-expressive ones.

Particularly surprising is evidence adduced in Solt (2011a) that even attributive uses of numerals, *few*, and *many* may be nonrestrictive (her examples):

- (51) a. The three dogs growled menacingly.
b. The few people we met were friendly.
c. His many friends supported him through his illness.

Solt argues that these further support construing nonrestrictive meaning along a separate dimension of meaning.

6 Predicates of personal taste

Some people think roller coasters are fun. Others don't. For the most part, we couldn't possibly be more bored by this fact. It's certainly not grounds for a fight. So in the discourse in (52), Floyd comes off as at least belligerent:

- (52) *Floyd:* Roller coasters are fun.
Clyde: No, they're not.
Floyd: #That's a lie!

But something deeper seems to have gone wrong here. Floyd's response is not just belligerent but outright infelicitous, even though there's no denying that he and Clyde disagree about something. Indeed, if Floyd wanted to **prove** that Clyde had been lying, it's not at all clear what his next step should be. There's something wrong with the very idea of escalating this kind of disagreement into an argument. We're not so casual about all disagreements:

- (53) *Floyd:* This roller coaster is wooden.
Clyde: No, it isn't.
Floyd: That's a lie!

Here, there's belligerence but no infelicity. It's also completely clear how the question should be resolved empirically.

The phenomenon illustrated in (52)—and not in (53)—is FAULTLESS DISAGREEMENT (Kölbel 2002). The crucial fact is that when the interlocutors contradict each other in such scenarios, they are not actually expressing contradictory views about an objective matter of fact. They are certainly disagreeing in some sense, but not in a sense that is easy to characterize precisely.

The locus of the puzzle seems to be what Lasersohn (2005) termed PREDICATES OF PERSONAL TASTE, which include *fun* and *tasty*. These predicates, he observed, need to be understood relative to a particular individual. Whenever something is fun, it is because someone has judged it fun. Lasersohn concluded that the semantics of these predicates makes reference to what he called a JUDGE.

There are a number of ways one might implement this idea, and he considered several. The most straightforward would probably be simply to suppose that these predicates have an implicit argument, a kind of unpronounced PP with a meaning like ‘according to’ (or ‘for’ or ‘to’):

- (54) a. Roller coasters are fun $\left\{ \begin{array}{l} \text{according to} \\ \text{for} \end{array} \right\}$ me.
 b. Cilantro is tasty (according) to me.

We could represent this implicit argument directly in the object language, like the referential index of a pronoun, and assume it’s provided by context:

- (55) $\llbracket \text{fun}_j \rrbracket = \lambda x . \text{fun-for}(j)(x)$

This is a property of things that are fun according to the judge j that is provided as an implicit argument. But, as Lasersohn observed, this doesn’t quite jibe with our intuitions. If in each utterance, the judge were identical to the speaker, the faultless disagreement scenario would be analyzed along the lines of (56):

- (56) *Floyd*: Roller coasters are fun for me.
Clyde: #No, they’re not fun for me.

Now something has gone wrong even earlier. This account certainly captures why the disagreement is faultless, since Floyd and Clyde are now asserting different propositions:

- (57) *Floyd*: **fun-for(Floyd)(roller-coasters)**
Clyde: **¬fun-for(Clyde)(roller-coasters)**

What this misses, though, is that faultless disagreement is still disagreement. The discourse in (56) and (57) isn’t disagreement at all. That’s what makes Clyde’s *no* in (56) odd.

If, on the other hand, the judge in each utterance were the same—say, Floyd in both cases—there would be real disagreement, but it would be disagreement over a matter of fact: whether Floyd enjoys roller coasters. It would not be faultless. One of the speakers has said something false.

Lasersohn’s suggestion is that judges must be introduced in a different way, one that doesn’t resemble the way pronouns work. He suggests that the interpretation function itself is relativized to a judge—but, importantly, indirectly. It’s often necessary to relativize the interpretation function to a context, which includes a variety of information about the circumstances of

use. The judge is one of those pieces of information, so the denotation of *fun* can be (roughly) as in (58):

$$(58) \quad \llbracket \textit{fun} \rrbracket^c = \lambda x . \textit{fun-for}(\textit{judge}(c))(x)$$

This says that x is fun according to the judge in c . It's superficially similar to the previous denotation, but there is an important difference: the disagreement is now over the truth of a single proposition: in a context c , **fun-for(judge(c))(roller-coasters)**. So there is real disagreement. If the context is held constant, the interlocutors would indeed be contradicting each other. Yet it's faultless because to arrive at contradiction, the context must be fixed **exactly**. In actual use, it never is—we never know precisely the context against which we're evaluating utterances. The faultlessness, on Lasersohn's account, arises from this indeterminacy.¹³

The notion of judge-dependence has attracted the attention of researchers in a number of areas, among them Nouwen (2007), Stephenson (2007b,a,c), Stojanovic (2007), Lasersohn (2008), Sæbø (2009), Lasersohn (2009), Sassoon (2010) and Kennedy (2012). Importantly, there is nothing about judge-dependence that's necessarily about adjectives, or indeed about modifiers. Like vagueness, one can find it anywhere. It's therefore perhaps not surprising that the idea has also found a natural home in the analysis of epistemic modals (Stephenson 2007b,a,c). Verbs might be sensitive to a judge as well, but, more interestingly, they might also be sensitive to whether an expression they've combined with is judge-sensitive. This seems to be the case for *find* (Sæbø 2009):

- (59) a. Floyd found this roller coaster fun.
b. #Floyd found this roller coaster wooden.

The precise distribution of judge-dependence across the grammar, and the distribution of sensitivity to it, and even whether it exists as such (Nouwen 2007) is a focus of active inquiry. At a minimum, though, it constitutes a potentially useful analytical tool: the concept itself is a good probe into subtleties of meaning, and the way of thinking about it Lasersohn articulates can be applied more widely.

¹³This is reminiscent of the epistemic theory of vagueness (Williamson 1994; see section ??): the disagreement would be a factual one if only we knew precisely what context we're in. But we can't know, just as on an epistemic theory of vagueness we can't know where the standard lies.

References

- Adams, Ernest. 1974. 'The logic of 'almost all''. *Journal of Philosophical Logic* 3(1–2), 3–17.
- Amaral, Patrícia. 2007. *The meaning of approximative adverbs: evidence from European Portuguese*. Doctoral dissertation, The Ohio State University.
- Amaral, Patrícia & Fabio Del Prete. 2010. 'Approximating the limit: the interaction between quasi 'almost' and some temporal connectives in Italian'. *Linguistics and Philosophy* 33(2), 51–115.
- Amaral, Patrícia, Craige Roberts, & E. Allyn Smith. 2007. 'Review of "The Logic of Conventional Implicatures" by Chris Potts'. *Linguistics and Philosophy* 30(6), 707–749.
- Anderson, Curt. 2013. 'Gradability in the absence of degree scales'. In *Proceedings of Semantics and Linguistic Theory (SALT) 23*.
- Anderson, Curt. To appear. 'A Hamblin semantics for *sorta*'. In *Proceedings of ConSOLE XXI*.
- Anderson, Curt. To appear. 'Verbal gradability and degree arguments in verbs'. In *Proceedings of Penn Linguistics Colloquium 37*. University of Pennsylvania Working Papers in Linguistics.
- Atlas, Jay David. 1984. 'Comparative adjectives and adverbials of degree: An introduction to radically radical pragmatics'. *Linguistics and Philosophy* 7(4), 347–377.
- Bach, Emmon. 1986. 'The algebra of events'. *Linguistics and Philosophy* 9(1), 5–16.
- Barwise, Jon & Robin Cooper. 1981. 'Generalized quantifiers and natural language'. *Linguistics and Philosophy* 4(2), 159–219.
- Bochnak, M. Ryan. 2010. 'Quantity and gradability across categories'. In Nan Li & David Lutz (eds.), *Proceedings of Semantics and Linguistic Theory (SALT) 20*. CLC Publications, Ithaca, NY.
- Bolinger, Dwight L. 1967. 'Adjectives in English: Attribution and predication'. *Lingua* 18, 1–34.
- Bolinger, Dwight L. 1972. *Degree Words*. Mouton, The Hague.
- Breheeny, Richard. 2008. 'A new look at the semantics and pragmatics of numerically quantified noun phrases'. *Journal of Semantics* 25(2), 93–139.
- Bresnan, Joan. 1973. 'Syntax of the comparative clause construction in English'. *Linguistic Inquiry* 4(3), 275–343.
- Bylinina, Lisa. 2011. 'This is so np!' In Barbara Hall Partee, M. Glanzberg, & J. Skilters (eds.), *Formal semantics and pragmatics: discourse, context and models*, pp. 1–15. New Prairie Press, Riga.
- Carlson, Greg. 1977. *Reference to Kinds in English*. Doctoral dissertation, University of Massachusetts Amherst. Published in 1980 by Garland.

- Caudal, Patrick & David Nicolas. 2005. 'Types of degrees and types of event structures'. In Claudia Maienborn & A. Wöllenstein (eds.), *Event Arguments: Foundations and Applications*. Niemeyer, Tübingen.
- Chierchia, Gennaro. 1998. 'Reference to kinds across languages'. *Natural Language Semantics* 6(4), 339–405.
- Chierchia, Gennaro. 2010. 'Mass nouns, vagueness and semantic variation'. *Synthese* 174(1), 99–149.
- Cinque, Guglielmo. 2003. 'The dual source of adjectives and XP- vs. N-raising in the Romance DP'. Handout, Proceedings of the North East Linguistic Society (NELS) 35.
- Cinque, Guglielmo. 2010. *The syntax of adjectives: a comparative study, Linguistic Inquiry Monographs*, vol. 57. MIT Press, Cambridge, MA.
- Constantinescu, Camelia. 2011. *Gradability in the Nominal Domain*. Doctoral dissertation, Rijksuniversiteit Leiden.
- Cresswell, Max J. 1976. 'The semantics of degree'. In Barbara H. Partee (ed.), *Montague Grammar*, pp. 261–292. Academic Press, New York.
- Demonte, Violeta. 2008. 'Meaning-form correlations and adjective position in Spanish'. In Louise McNally & Christopher Kennedy (eds.), *Adjectives and Adverbs: Syntax, Semantics, and Discourse*, Studies in Theoretical Linguistics. Oxford University Press, Oxford.
- Dowty, David R. 1979. *Word Meaning in Montague Grammar*. D. Reidel, Dordrecht.
- van Gerrevink, Richard & Helen de Hoop. 2007. 'On the optimal use of *Almost* and *Barely* in argumentation'. In Paul Dekker Maria Aloni & Floris Roelofsen (eds.), *Proceedings of the Sixteenth Amsterdam Colloquium*, pp. 229–234. ILLC, University of Amsterdam.
- Geurts, Bart. 2006. 'Take 'five': The meaning and use of a number word'. In Svetlana Vogeleeer & Liliane Tasmowski (eds.), *Non-definiteness and plurality*, pp. 311–329. John Benjamins Publishing, Amsterdam and Philadelphia.
- Geurts, Bart & Rick Nouwen. 2007. '*At least* et al.: The semantics of scalar modifiers'. *Language* 83(3), 533–559.
- Grice, H. Paul. 1975. 'Logic and conversation'. In Peter Cole & Jerry Morgan (eds.), *Syntax and Semantics 3: Speech Acts*, pp. 64–75. Academic Press, New York.
- Gutzmann, Daniel. 2011. 'Expressive modifiers and mixed expressives'. In Patricia Cabredo Hofherr & Olivier Bonami (eds.), *Empirical Issues in Syntax and Semantics* 8, pp. 123–142.
- Gutzmann, Daniel. 2013. 'Expressives and beyond: An introduction to varieties of conventional non-truth-conditional meaning'. In Daniel Gutzmann & Hans-Martin Gärtner (eds.), *Beyond Expressives: Explorations in Use-conditional Meaning*. Brill Academic Publishers.

- Hackl, Martin. 2000. *Comparative Quantifiers*. Doctoral dissertation, MIT.
- Harris, Jesse & Christopher Potts. 2009. 'Perspective-shifting with appositives and expressives'. *Linguistics and Philosophy* 32(6), 523–552.
- Hitzeman, Janet. 1992. 'The selectional properties and entailments of *Almost*'. In *Proceedings of the Chicago Linguistics Society (CLS) 28*, pp. 225–238.
- Horn, Laurence R. 1972. *On the Semantic Properties of Logical Operators in English*. Doctoral dissertation, UCLA.
- Horn, Laurence R. 1991. "only' XL: The assertoric asymmetry of exponents'. In Steven K. Moore & Adam Zachary Wyner (eds.), *Proceedings of Semantics and Linguistic Theory (SALT) 1*. CLC Publications, Ithaca, NY.
- Horn, Laurence R. 2002. 'Assertoric inertia and NPI licensing'. In Mary Andronis, Erin Debenport, , Anne Pycha, & Keiko Yoshimura (eds.), *Proceedings of the Chicago Linguistics Society (CLS) 38*, pp. 55–82.
- Huang, Yi Ting, Elizabeth Spelke, & Jesse Snedeker. 2012. 'What exactly do number words mean?' *Language Learning and Development* 00, 1–26.
- Huddleston, Rodney & Geoffrey K. Pullum. 2002. *The Cambridge Grammar of the English Language*. Cambridge University Press, Cambridge.
- Ionin, Tania & Ora Matushansky. 2006. 'The composition of complex cardinals'. *Journal of Semantics* 23(4), 315–360.
- Jayez, Jacques & Lucia M. Tovenca. 2008. 'Presque and almost: How argumentation derives from comparative meaning'. In Olivier Bonami & Patricia Cabredo Hofherr (eds.), *Empirical Issues in Syntax and Semantics 7: Proceedings of the Colloque de Syntaxe et Sémantique à Paris*, pp. 1–23.
- Johnson, Greg. 2013. 'Liketa is not almost'. In *University of Pennsylvania Working Papers in Linguistics* 19.
- Kadmon, Nirit & Fred Landman. 1993. 'Any'. *Linguistics and Philosophy* 16(4), 353–422.
- Kamoen, Naomi, Bregje Holleman, Rick Nouwen, Ted Sanders, & Huub van den Bergh. 2011. 'Absolutely relative or relatively absolute? the linguistic behavior of gradable adjectives and degree modifiers'. *Journal of Pragmatics* **In Press**.
- Katz, Jonah. 2007. 'Romance and restriction'. Generals paper, MIT.
- Keenan, Edward L. & Leonard M. Faltz. 1985. *Boolean Semantics for Natural Language*. D. Reidel, Dordrecht.
- Kennedy, Christopher. 2007. 'Vagueness and grammar: the semantics of relative and absolute gradable adjectives'. *Linguistics and Philosophy* 30(1), 1–45.
- Kennedy, Christopher. 2012. 'Two kinds of subjectivity'. Ms., University of Chicago.

- Kennedy, Christopher & Beth Levin. 2008. 'Measure of change: The adjectival core of degree achievements'. In Louise McNally & Christopher Kennedy (eds.), *Adjectives and Adverbs: Syntax, Semantics, and Discourse*, Studies in Theoretical Linguistics, pp. 156–182. Oxford University Press, Oxford.
- Kennedy, Christopher & Louise McNally. 2005. 'Scale structure, degree modification, and the semantics of gradable predicates'. *Language* **81**(2), 345–381.
- Kölbel, Max. 2002. 'Faultless disagreement'. *Proceedings of the Aristotelian Society* **104**, 55–73.
- Kratzer, Angelika. 1999. 'Beyond *Ouch* and *Oops*: How descriptive and expressive meaning interact'. Ms., University of Massachusetts Amherst; presented at the Cornell Conference on Theories of Context Dependency.
- Krifka, Manfred. 1989. 'Nominal reference, temporal constitution, and quantification in event semantics'. In Renate Bartsch, Johan van Benthem, & Peter van Emde Boas (eds.), *Semantics and Contextual Expression*, pp. 75–115. Foris, Dordrecht.
- Lakoff, George. 1973. 'Hedges'. *Journal of Philosophical Logic* **2**, 458–508.
- Landman, Fred. 2003. *Indefinites and the type of sets*. Blackwell Publishing, Malden, MA.
- Larson, Richard & Franc Marušič. 2004. 'On indefinite pronoun structures with APs: Reply to Kishimoto'. *Linguistic Inquiry* **35**(2), 268–287.
- Laserson, Peter. 1999. 'Pragmatic halos'. *Language* **75**(3), 522–551.
- Laserson, Peter. 2005. 'Context dependence, disagreement, and predicates of personal taste'. *Linguistics and Philosophy* **28**(6), 643–686.
- Laserson, Peter. 2008. 'Quantification and perspective in relativist semantics'. *Philosophical Perspectives* **22**(1), 305–337.
- Laserson, Peter. 2009. 'Relative truth, speaker commitment, and control of implicit arguments'. *Synthese* **166**(2), 359–374.
- Levinson, Stephen. 1983. *Pragmatics*. Cambridge University Press, Cambridge.
- Link, Godehard. 1983. 'The logical analysis of plurals and mass terms: A lattice-theoretical approach'. In Rainer Bäuerle, Christoph Schwarze, & Arnim von Stechow (eds.), *Meaning, Use, and Interpretation of Language*. Walter de Gruyter, Berlin.
- McCawley, James D. 1971. 'Prelexical syntax'. In *Report of the 22nd Roundtable Meeting on Linguistics and Language Studies*. Georgetown University Press.
- McCready, Eric. 2010. 'Varieties of conventional implicature'. *Semantics and Pragmatics* **3**(8), 1–57.

- Morzycki, Marcin. 2001. 'Almost and its kin, across categories'. In Brendan Jackson, Rachel Hastings, & Zsofia Zvolenszky (eds.), *Proceedings of Semantics and Linguistic Theory (SALT) 11*, pp. 306–325. CLC Publications, Ithaca, NY.
- 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.
- Morzycki, Marcin. 2008. 'Nonrestrictive modifiers in nonparenthetical positions'. In Louise McNally & Christopher Kennedy (eds.), *Adjectives and Adverbs: Syntax, Semantics, and Discourse*, Studies in Theoretical Linguistics, pp. 101–122. Oxford University Press, Oxford.
- Morzycki, Marcin. 2009. 'Degree modification of gradable nouns: size adjectives and adnominal degree morphemes'. *Natural Language Semantics* 17(2), 175–203.
- Morzycki, Marcin. 2012a. 'Adjectival extremeness: degree modification and contextually restricted scales'. *Natural Language and Linguistic Theory* 30(2), 567–609.
- Morzycki, Marcin. 2012b. 'The several faces of adnominal degree modification'. In Jaehoon Choi, E. Alan Hogue, Jeffrey Punske, Deniz Tat, Jessamyn Schertz, & Alex Trueman (eds.), *Proceedings of Proceedings of the West Coast Conference on Formal Linguistics (WCCFL) 29*, pp. 187–195. Cascadilla Press, Somerville, MA.
- 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*, pp. 179–196. CLC Publications, Ithaca, NY.
- Nakanishi, Kimiko. 2007. 'Measurement in the nominal and verbal domains'. *Linguistics and Philosophy* 30(2), 235–276.
- Nouwen, Rick. 2006. 'Remarks on the polar orientation of *almost*'. In van de Weijer & Los (eds.), *Linguistics in the Netherlands*. John Benjamins Publishing.
- Nouwen, Rick. 2007. 'Predicates of (im)personal taste'. Ms., Utrecht Institute for Linguistics OTS.
- Partee, Barbara. 1986. 'Any, Almost, and superlatives (the airport squib)'. Ms., University of Massachusetts Amherst. Reprinted in 2004 in *Compositionality in Formal Semantics: Selected Papers by Barbara H. Partee*. Blackwell. Malden, Mass.

- Partee, Barbara. 1995. 'Lexical semantics and compositionality'. In Lila Gleitman & Mark Liberman (eds.), *An Invitation to Cognitive Science, Volume 1: Language*. MIT Press, Cambridge, MA.
- Penka, Doris. 2005. 'Almost: a test?' In Paul Dekker & Michael Franke (eds.), *Proceedings of the 15th Amsterdam Colloquium*. ILLC, Amsterdam.
- Penka, Doris. 2006. 'Almost there: The meaning of *Almost*'. In Christian Ebert & Cornelia Endriss (eds.), *Proceedings of Proceedings of Sinn und Bedeutung 10*, pp. 275–286. Zentrum für Allgemeine Sprachwissenschaft (ZAS), Berlin.
- Peterson, Philip L. 1997. *Fact, Proposition, Event*. Kluwer Academic, Dordrecht.
- Piñón, Christopher. 2008. 'Aspectual composition with degrees'. In Louise McNally & Christopher Kennedy (eds.), *Adjectives and Adverbs: Syntax, Semantics, and Discourse*, Studies in Theoretical Linguistics. Oxford University Press, 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 expressive dimension'. *Theoretical Linguistics* **33**(2), 165–198.
- Pozzan, Lucia & Susan Schweitzer. 2008. 'Not nearly synonymous: Similarities and differences between *almost* and *nearly*'. In Atle Grønn (ed.), *Proceedings of Proceedings of Sinn und Bedeutung 12*, pp. 485–507. ILOS, Oslo.
- Rapp, Irene & Arnim von Stechow. 1999. 'Fast 'almost' and the visibility parameter for functional adverbs'. *Journal of Semantics* **16**(2), 149–204.
- Rett, Jessica. 2008. *Degree Modification in Natural Language*. Doctoral dissertation, Rutgers University.
- Rett, Jessica. 2011. 'The semantic significance of similatives'. Ms., UCLA.
- Rothstein, Susan. 2011. 'Counting, measuring and the semantics of classifiers'. *The Baltic International Yearbook of Cognition, Logic and Communication* **6**.
- Rotstein, Carmen & Yoad Winter. 2004. 'Total adjectives vs. partial adjectives: Scale structure and higher-order modifiers'. *Natural Language Semantics* **12**(3), 259–288.
- Sadock, Jerry. 1981. 'Almost'. In Peter Cole (ed.), *Radical Pragmatics*. Academic Press, New York.
- Sæbø, Kjell Johan. 2009. Judgment ascriptions'. *Linguistics and Philosophy* **32**(4), 327–352.

- Sassoon, Galit. 2010. 'Restricted quantification over tastes'. In Maria Aloni, Harald Bastiaanse, Tikitou de Jager, & Katrin Schulz (eds.), *Logic, Language and Meaning, Lecture Notes in Computer Science*, vol. 6042, pp. 163–172. Springer, Berlin.
- Sassoon, Galit Weidman. 2007. *Vagueness, Gradability and Typicality: A Comprehensive Semantic Analysis*. Doctoral dissertation, Tel Aviv University.
- Sauerland, Uli & Penka Stateva. 2007. 'Scalar vs. epistemic vagueness: Evidence from approximators'. In Masayuki Gibson & Tova Friedman (eds.), *Proceedings of Semantics and Linguistic Theory (SALT) 17*. CLC Publications, Ithaca, NY.
- Schlenker, Philippe. 2007. 'Expressive presuppositions'. *Theoretical Linguistics* 33(2), 237–245.
- Schwarzschild, Roger. 2005. 'Measure phrases as modifiers of adjectives'. In *L'adjectif, Recherches Linguistiques de Vincennes*, vol. 34, pp. 207–228. Presses universitaires de Vincennes, Paris.
- Schwarzschild, Roger. 2006. 'The role of dimensions in the syntax of noun phrases'. *Syntax* 9(1), 67–110.
- Sevi, Aldo. 1998. *A Semantics for Almost and Barely*. Master's thesis, Tel-Aviv University.
- Shaer, Benjamin. 2000. 'Syntactic position and the readings of 'manner' adverbs'. In E. Lang, D. Holsinger, K. Schwabe, & O. Teuber (eds.), *ZAS Papers in Linguistics 17*, pp. 265–286. Zentrum für Allgemeine Sprachwissenschaft, Berlin.
- Shaer, Benjamin. 2003. 'Manner' adverbs and the association theory: Some problems and solutions'. In Ewald Lang, Claudia Maienborn, & Cathrine Fabricius-Hansen (eds.), *Modifying Adjuncts, Interface Explorations*, vol. 4, pp. 211–259. Mouton de Gruyter, Berlin.
- Solt, Stephanie. 2009. *The Semantics of Adjectives of Quantity*. Doctoral dissertation, The City University of New York.
- Solt, Stephanie. 2011a. 'Attributive quantity words as nonrestrictive modifiers'. In Suzi Lima, Kevin Mullin, & Brian Smith (eds.), *Proceedings of the North East Linguistic Society (NELS) 39*. GLSA Publications, Amherst.
- Solt, Stephanie. 2011b. 'How many *mosts*?' In Ingo Reich, Eva Horch, & Dennis Pauly (eds.), *Proceedings of Sinn und Bedeutung 15*, pp. 565–579. Universaar: Saarland University Press, Saarbrücken, Germany.
- Stephenson, Tamina. 2007a. 'Judge dependence, epistemic modals, and predicates of personal taste'. *Linguistics and Philosophy* 30, 487–525.
- Stephenson, Tamina. 2007b. 'A parallel account of epistemic modals and predicates of personal taste'. In E. Puig-Waldmüller (ed.), *Proceedings of Sinn und Bedeutung 11*. Universitat Pompeu Fabra, Barcelona.
- Stephenson, Tamina. 2007c. *Toward a Theory of Subjective Meaning*. Doctoral dissertation, MIT.

- Stojanovic, Isidora. 2007. 'Talking about taste: disagreement, implicit arguments, and relative truth'. *Linguistics and Philosophy* **30**(6), 691–706.
- Umbach, Carla. 2006. 'Non-restrictive modification and backgrounding'. In Beáta Gyuris, László Kálmán, Chris Piñón, & Károly Varasdi (eds.), *Proceedings of the Ninth Symposium on Logic and Language*, pp. 152–159. Research Institute for Linguistics, Hungarian Academy of Sciences Theoretical Linguistics Programme, Eötvös Loránd University, Budapest.
- Vendler, Zeno. 1967. *Linguistics in Philosophy*. Cornell University Press, Ithaca, NY.
- Villalta, Elisabeth. 2007. *Context Dependence in the Interpretation of Questions and Subjunctives*. Doctoral dissertation, Universität Tübingen.
- de Vries, Hanna. 2010. *Evaluative Degree Modification of Adjectives and Nouns*. Master's thesis, Utrecht Institute of Linguistics.
- Wellwood, Alexis, Valentine Hacquard, & Roumyana Pancheva. 2012. 'Measuring and comparing individuals and events'. *Journal of Semantics* **29**(2), 207–228.
- Williamson, Timothy. 1994. *Vagueness*. Routledge, London.
- Xie, Zhiguo. 2010. 'The other pole of degree modification of gradable nouns by size adjectives: A Mandarin Chinese perspective'. In *Proceedings of the 12th International Symposium on Chinese Languages and Linguistics*, pp. 245–256.
- Zaroukian, Erin. 2011. 'Divergent approximators'. In Ingo Reich, Eva Horch, & Dennis Pauly (eds.), *Proceedings of Sinn und Bedeutung 15*, pp. 677–690. Universaar: Saarland University Press, Saarbrücken, Germany.
- Zaroukian, Erin. 2013. *Quantification and (Un)certainly*. Doctoral dissertation, Johns Hopkins University, Baltimore.

morzycki@msu.edu
<http://msu.edu/~morzycki>