

Nonrestrictive Modifiers in Nonparenthetical Positions

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1 Introduction

The systematic but often subtle semantic differences between prenominal and postnominal adjectives first noted by Bolinger (1967) in many respects remain poorly understood. There remains a similar murkiness surrounding some of the systematic but often subtle semantic differences between preverbal and postverbal adverbs, of the sort noted by Bellert (1977), Ernst (1984, 2002), Jackendoff (1972) and Cinque (1994) among many others. This paper focuses on one difference of this sort that occurs in both these murky domains: for both adjectives and adverbs, nonrestrictive interpretations are possible without resort to parenthetical intonation only in pre-head positions.¹

The proposal is to derive this striking parallel from a broader principle governing how nonrestrictive interpretations are built up. More precisely, I will suggest that the semantic mechanism that gives rise to these interpretations—understood here more or less in the framework of Potts (2003)—is characterized by a fundamental structural asymmetry that

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¹As Piñón (this volume) points out, the term 'nonrestrictive' does not have a precise self-evident definition. I use it here essentially as a convenient label for the problem, in part because it is widespread in the literature. References cited in section 4.1 provide a fuller picture of how one might understand it.

prevents it from assigning such interpretations to constituents on right branches. This is in one respect a surprising proposal: linear precedence normally has no effect on semantic interpretation, and it's not altogether clear that information about linear precedence should be present at LF at all. What this may reveal is that such non-restrictive, non-truth-conditional meaning is fundamentally quite different from ordinary meaning. One of the broader questions that underlie the proposal here, then, is how and where truth-conditional and non-restrictive meaning interact. The other broader question that will frame the discussion is the general empirical one of how modifier position and interpretation relate.

Section 2 relates the contrast in the availability of nonrestrictive interpretations between prenominal and postnominal adjectives to the corresponding contrast among adverbs. Section 3 shows that these facts are not easily explained away by independent assumptions about modifier syntax, focus/information structure, or prosody. Section 4 proposes a non-restrictive counterpart of the rule of intersective modifier interpretation and argues that it is inherently structurally asymmetric. Section 5 concludes.

2 The Phenomenon

2.1 *The Contrast in Adjectives*

It is now fairly well established that the position of an adjective correlates with its interpretation in a variety of diverse ways (Bolinger 1967, Sproat & Shih 1988, Valois 1991, Bernstein 1993, Cinque 1994, Laenzlinger 2000, McNally & Boleda Torrent 2003, among many others, and work in the typological tradition including Hetzron 1978 and Dixon 1982). One such contrast is reflected in the Bolinger examples in (1) and (2), in which the prenominal adjectives most naturally receive (something like) an individual-level interpretation and the postnominal ones (something like) a stage-level one (Larson 1998, 1999, Larson & Marušič 2004):

- (1) a. the visible stars (Bolinger 1967)
b. the stars visible
- (2) a. the navigable river (Bolinger 1967)
b. the river navigable

There are other clear distinctions in this domain, though. In (3a), for example, the most natural interpretation involves a person who is both religious and socially masochistic; in (3b), the most natural interpretation involves a person who is both social and religiously masochistic.

- (3) a. a religious social masochist
 b. a social religious masochist

And of course there are a variety of semantically-based ordering restrictions on adjectives—many of them discussed in other papers in this volume—including in English a requirement that color adjectives precede size adjectives (*the big red balloon* vs. **the red big balloon*).

The corner of this larger picture that is of immediate interest here is reflected in (4a), which has both a restrictive and nonrestrictive interpretation, and in (4b), which has only the restrictive one:

- (4) Every *unsuitable word* was deleted. (Larson & Marušič 2004)
 a. **Restrictive:** ‘Every word that was unsuitable was deleted.’
 b. **Nonrestrictive:** ‘Every word was deleted; they were unsuitable.’
- (5) Every *word unsuitable* was deleted. (Larson & Marušič 2004)
 a. **Restrictive:** ‘Every word that was unsuitable was deleted.’
 b. ***Nonrestrictive:** ‘Every word was deleted; they were unsuitable.’

A similar ambiguity is observed in this variation on the familiar incantation that appears at the end of acknowledgment footnotes, where the nonrestrictive reading is the most natural: *All the inevitable errors are solely the author’s responsibility*.

This effect is not always easy to demonstrate—in part because English adjectives don’t generally like to be postnominal—but with a sufficiently heavy AP it can also be perceived in judgments of pragmatic oddness:

- (6) a. Every *needless and thoroughly reprehensible war crime* should be prosecuted.
 b. #Every *war crime needless and thoroughly reprehensible* should be prosecuted.

The postnominal position in (6b) gives rise to the feeling that the speaker does not regard all war crimes as needless and reprehensible.

This effect is not limited to English, and is in fact perhaps more easily seen in Romance, where adjective position is not restricted quite so severely. The generalization, though, takes a slightly different form. While in English postnominal adjectives are unambiguously restrictive, in Spanish *prenominal* adjectives are unambiguously *nonrestrictive*:²

²The facts are actually interestingly more complicated—nonrestrictive postnominal readings are subject to further restrictions. The absence of *de Maria* in (7) can force the restrictive reading, for example (Violeta Demonte, p.c.).

- (7) *los sofisticados amigos* de María (Mackenzie 2004)
 the sophisticated friends of María
- a. ***Restrictive**: ‘those of María’s friends who are sophisticated’
 - b. **Nonrestrictive**: ‘María’s friends, all of whom happen to sophisticated’
- (8) *los amigos sofisticados* de María (Mackenzie 2004)
- a. **Restrictive**: ‘just those friends of María who are sophisticated’
 - b. **Nonrestrictive**: ‘María’s friends in general (who all happen to be sophisticated)’

Italian works the same way:³

- (9) *Le noiose lezioni* di Ferri se le (Cinque 2003)
 the boring lectures of Ferri REFL PRON
 ricordano tutti.
 remember all
- a. ***Restrictive**: ‘Everybody remembers just Ferri’s classes which were boring.’
 - b. **Nonrestrictive**: ‘Everybody remembers Ferri’s classes, all of which were boring.’
- (10) *Le lezioni noiose* di Ferri se le ricordano tutti. (Cinque 2003)
- a. **Restrictive**: ‘Everybody remembers just Ferri’s classes which were boring.’
 - b. **Nonrestrictive**: ‘Everybody remembers Ferri’s classes, all of which were boring.’

The difference between Romance and English in this respect is expected, given that Romance nouns move higher in their projection than they do in English.

2.2 *The Contrast in Adverbs*

Just as with adjectives—perhaps more so, or at least more famously—the position of an adverb also correlates with its interpretation (Jackendoff 1972, Bellert 1977, McConnell-Ginet 1982, Wyner 1994, 1998, Geuder 2000, Ernst 1984, 2002, Cinque 1999, Alexiadou 1997, Rawlins 2003, and many others). To take just two examples, the interpretation of each instance

³These paraphrases are Cinque’s.

of *happily* in (11) is different, and in (12), only (12c) has the manner reading presumably intended:

(11) Happily, Clyde would happily play the tuba happily.⁴

- (12) a. #Lavishly, Josie has furnished the house.
(McConnell-Ginet 1982)
b. #Josie lavishly has furnished the house.
c. Josie has furnished the house lavishly.

Again, then, the effect of interest here is part of a larger and more complicated picture.

There is an adverbial version of the restrictive-nonrestrictive contrast. Peterson (1997) observes the ambiguity in examples along the lines of (13):

- (13) The Titanic('s) rapidly sinking caused great loss of life.
a. **Restrictive:** 'The Titanic's sinking being rapid caused great loss of life.'
b. **Nonrestrictive:** 'The Titanic's sinking, which was rapid, caused great loss of life.'

Peterson doesn't relate this contrast to the structural position of the modifier, though—in fact, he suggests postverbal manner adverbs like the one in (14b) have nonrestrictive readings too. But as Shaer (2000, 2003) points out, the availability of such non-restrictive readings is doubtful.⁵

- (14) The Titanic('s) sinking rapidly caused great loss of life.
a. **Restrictive:** 'The Titanic's sinking being rapid caused great loss of life.'
b. ***Nonrestrictive:** 'The Titanic's sinking, which was rapid, caused great loss of life.'

This may be clearer in embedded contexts, as in (15), or—paralleling the adjectival cases more closely—in antecedents of conditionals that restrict a quantificational adverb, as in (16):

- (15) a. It is regrettable that the Titanic *slowly sank*.
b. It is regrettable that the Titanic *sank slowly*.
(16) a. If a ship *slowly sinks*, it is always regrettable.
b. If a ship *sinks slowly*, it is always regrettable.

⁴This is built around an example due to Jackendoff (1972).

⁵The * here is mine.

Unlike the (a) sentences, the (b) sentences unambiguously express regret that the relevant ship-sinking wasn't faster.

To sharpen these intuitions a bit, suppose that I make the wager in (17):

- (17) I'll bet you \$80 that Floyd, who has read a lot of medical books, could *easily perform* a successful nose job in a moving taxi.

If it turns out that Floyd has in fact read *no* medical books, I don't lose the bet—indeed, if he has read no medical books but nonetheless manages to perform a successful nose job in a moving taxi, I win it. If, though, Floyd manages to perform a successful nose job in a moving taxi, but it was not easy, a quandary results—it is not clear whether I win or lose the bet. This is expected, because the *easily* in (17) has both the restrictive and nonrestrictive readings, and it is not clear which was intended in the original bet. On the restrictive reading, I lose. On the nonrestrictive one, I win.

If nonrestrictive interpretations were in general possible post-verbally, we would expect the same uncertainty to arise if the terms of the bet had instead been (18):

- (18) I'll bet you \$80 that Floyd, who has read a lot of medical books, could perform a successful nose job in a moving taxi easily.

But not so. If this is the bet we had made, and it had in fact required some effort for Floyd to perform the nose job, I clearly lose. So a nonrestrictive reading is not possible here.

3 Some Analytical Possibilities

3.1 *Blaming Focus*

One natural analytical intuition that quickly arises with respect to these facts—particularly in their adverbial form—is that this phenomenon is ultimately an effect of focus: focused modifiers are restrictive; non-focused ones are nonrestrictive (Göbbel 2004).

Certainly, there seems to be a connection here, and prosodic considerations more generally seem to be relevant. But this kind of explanation, at least in its most obvious form, doesn't seem to be sufficient on its own to explain the contrasts.

WRONG PREDICTIONS One difficulty is that no matter how one manipulates focus in the betting example with a postverbal adverb in (18), I lose:⁶

⁶Barbara Abbott (p.c.) points out that this argument is built around contrastive focus, which may not be the variety of focus that would be involved here—and indeed perhaps

- (19) a. I'll bet you \$80 that Floyd, who has read a lot of medical books, could perform a SUCCESSFUL nose job in a moving taxi easily.
b. I'll bet you \$80 that Floyd, who has read a lot of medical books, could perform a successful NOSE JOB in a moving taxi easily.
c. I'll bet you \$80 that Floyd, who has read a lot of medical books, could perform a successful nose job in a MOVING taxi easily.

If the restrictive reading were only possible when the adverb is focused, it would be necessary to suppose that *easily* is in fact focused in all of these examples, and indeed that it is not possible to *not* to focus it in this position. This seems undesirable.

SOME ADJECTIVES REQUIRE FOCUS? Perhaps what's happening here, as Göbbel (2004)'s approach might imply, is that phrasal prosody is somehow directly driving the placement of focus. But there does not appear to be any phonological difference between English and Spanish that would suffice to achieve this. At best, perhaps it might conceivably be able to rule out non-restrictive readings in medial positions in (7–8), wrongly (Anne-Michelle Tessier, p.c.).

SOME ADJECTIVES FORBID FOCUS? An account that relies entirely on focus would require that prenominal adjectives in Spanish and Italian generally *cannot* be focused, since these are generally nonrestrictive. Such a uniform ban would be quite odd, and would in itself require some kind of explanation.⁷

FEELS LIKE MORE THAN FOCUS A final argument against a purely focus-based account is simply that these effects involve intuitions that don't seem to be the ones ordinarily evoked by focus. These effects are typically described using terms like 'nonrestrictive', 'double assertion' (Peterson 1997), or 'parenthetical', and they are naturally paraphrased using *incidentally* or *by the way*. This is not how expressions that simply lack focus are normally described. So on these grounds too, much more would have to be said. Whatever role of focus ought to play in the analysis, then, it seems likely that it could not be a substitute for some independent assumptions about how nonrestrictive meaning is computed.

distinguishing more finely among different varieties of focus might diminish the force of the other arguments presented below as well. I leave this to future research.

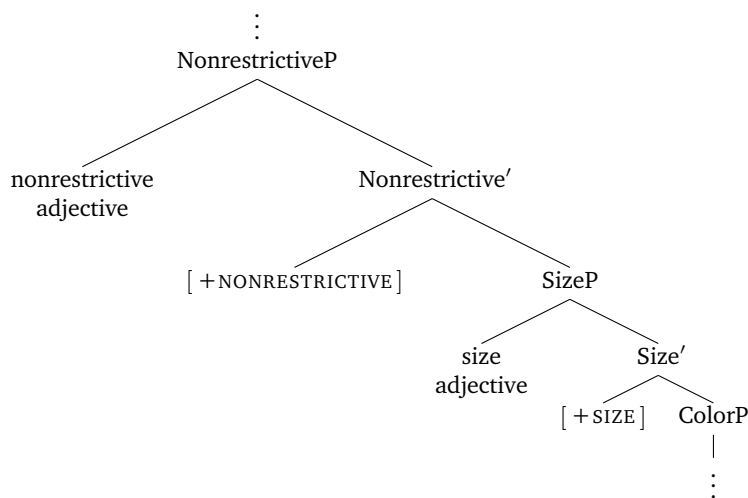
⁷Certainly, it is not clear that this result would follow purely from facts about the distribution of phrasal stress, for example.

3.2 Assimilating These to Other Effects of Modifier Position

Another natural approach to these observations is to suppose that the solution should follow straightforwardly from a general theory of modifier position—from whatever determines the relative order of evaluation, color, and size adjectives, for example, or pragmatic, subject-oriented, and manner adverbs. This is in some respects appealing, but it is not clear what its content would be without committing to a *particular* theory of this sort.

General theories in this domain are hard to come by (ones that aspire to high degrees of empirical breadth include Alexiadou 1997, Cinque 1999, Ernst 2002, Morzycki 2005). The most familiar of these, and perhaps the only one in which an account of these facts would be available straightforwardly, is the framework of Cinque (1999), in which particular positions in a tree are idiosyncratically associated with particular modifier classes. Might there be, then, a single spot associated with nonrestrictive modification, perhaps understandable in a vaguely Cinquean (Cinque 1994, 1999 and many others) treatment as in (20)?:

(20) A MORE-OR-LESS CINQUEAN POSSIBILITY:



Perhaps. But there is reason to think that these facts about nonrestrictive readings are of a different sort.

One is that, as Shaer points out, the restrictive/nonrestrictive distinction in adverbs cuts across adverb classes. Both the subject-oriented adverb *accidentally* and the (pure) manner adverb *softly* manifest the contrast, for example:

- (21) a. Clyde $\left\{ \begin{array}{l} \text{softly} \\ \text{accidentally} \end{array} \right\}$ muttered something offensive.
 b. Clyde muttered something offensive $\left\{ \begin{array}{l} \text{softly} \\ \text{accidentally} \end{array} \right\}$.

This distinction similarly cross-cuts adjective classes as well.

Another difficulty with such an approach is that the restrictive-nonrestrictive contrast targets multiple modifiers at a time, grouping together ones of different classes:

- (22) I'm positively tickled pink to meet your charming lovely Norwegian wife.

Here, all the prenominal adjectives are most naturally interpreted nonrestrictively—this does not suggest that the addressee has any other wives, or that any of them are anything other than charming, lovely, and Norwegian.⁸

4 Modifier Position in Computing Expressive Meaning

4.1 Expressive Meaning

Crucial to what needs to be captured in building an account of these facts is the sense of 'double assertion'. A natural way to do this is to take the nonrestrictive modifiers at issue here to involve a species of expressive meaning (Kratzer 1999, Potts 2003, and references there), as nonrestrictive relative clauses and numerous other constructions do.

Among the identifying characteristics of expressive meaning are:

- It is speaker oriented, in the sense that it conveys the speaker's commentary on what is being said.
- It always takes maximally wide scope. That is, an expression that contributes expressive meaning cannot occur under the scope of any scope-bearing expression. Thus the expressive meaning contributed by *hopefully* cannot be incorporated into a sentence such as **Every monkey that hopefully is housebroken can sleep in the living room*, in which *hopefully* would have to occur inside the scope of *every*—this sentence cannot be used to convey a desire that all relevant monkeys be housebroken.

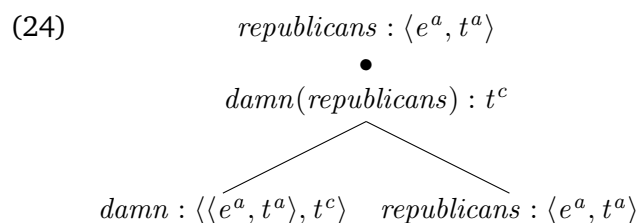
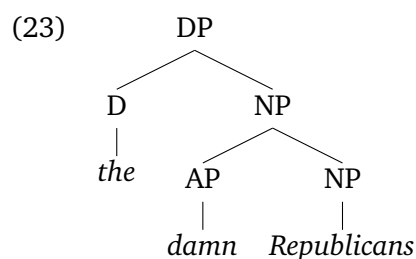
⁸Curiously, it seems to be the case that when one prenominal adjective is interpreted nonrestrictively, all of them tend to be. I have no explanation of this, apart from the speculation that it may be a psycholinguistic effect of some sort.

- Unlike conversational implicatures, expressive meaning does not arise from the context of use and principles such as Gricean maxims. Indeed, it is often associated with a particular lexical item. At least for current purposes, one can identify expressive meaning with *conventional* implicature.

4.2 Potts 2003: Some Theoretical Machinery and Damn Expressive Adjectives

To serve as a foundation for an account, I will adopt the general framework of Potts (2003) for representing expressive meaning. In this framework, expressive meaning (conventional implicatures) and ordinary truth-conditional ('descriptive') meaning are computed compositionally, in parallel, and along distinct dimensions of semantic representation.

Potts proposes an analysis of nonrestrictive adjectives that focuses on adjectives that lexicalize a nonrestrictive meaning, e.g., *damn* and *fucking*.⁹ In these representations, a syntactic tree such as the one in (23) is understood to correspond to a semantic one, as in (24), that represents its interpretation:



Importantly, the node in (24) corresponding to *damn Republicans* has two tiers, divided by a bullet. The higher of these represents ordinary descriptive meaning. The lower represents expressive meaning. For each formula in (24), its type is explicitly indicated to the right of the colon.

⁹He calls these 'expressive adjectives', using the term in a more narrow sense than I will here. He suggests, though, that analogous nonrestrictive uses of e.g. *lovely* work roughly similarly.

It is this type system that is the essence of how expressive meaning is represented. The core innovation is that (non-functional) types come in two flavors: one associated with an ordinary descriptive meaning (indicated with superscript a) and another with an expressive meaning (indicated with superscript c).¹⁰ A rule of semantic composition—‘CI Application’¹¹—puts descriptive and expressive denotations together in the way (24) reflects. This rule is roughly the expressive counterpart of the standard functional application rule. In (24), then, the fact that *damn* contributes expressive meaning is reflected in its type. It is a function from ordinary properties ($\langle e^a, t^a \rangle$) to expressive truth values (t^c), and thus applies to the denotation of *Republicans* to yield an expressive truth value. Because of how the CI Application rule works, the ordinary meaning of *Republicans* is simply passed on to *damn Republicans*, reflecting the fact that, apart from expressive meaning, these expressions are synonymous.

This of course reflects only how semantic composition proceeds. Substantively, Potts suggests that *damn* denotes a function that predicates of *the kind correlate of its argument* some generalized disapproval predicate whose exact nature is irrelevant to the combinatorics, as in (25) (where \cap is the nominalization function of Chierchia 1984, which maps a predicate to a corresponding kind, and τ is an arbitrary type):

$$(25) \quad \textit{damn} \rightsquigarrow \lambda X . \textit{bad}(\cap X) : \langle \langle \tau^a, t^a \rangle, t^c \rangle$$

Very roughly, this says that *damn* is true of a property iff things that have that property are bad. Thus (24) could be spelled out more fully as (26):

$$(26) \quad \begin{array}{c} \textit{republican} : \langle e^a, t^a \rangle \\ \bullet \\ \textit{bad}(\cap \textit{republican}) : t^c \\ \diagdown \quad \diagup \\ \textit{bad} : \langle \langle e^a, t^a \rangle, t^c \rangle \quad \textit{republican} : \langle e^a, t^a \rangle \end{array}$$

4.3 Some Bumps in the Road and a Positive Prediction

At least two significant challenges present themselves in directly extending this approach to the phenomena of interest here.

¹⁰One might worry a bit about this. It does suggest, in a way that seems troubling, that there is a fundamental sortal distinction in the ontology between, for example, truth values of type t^a and t^c .

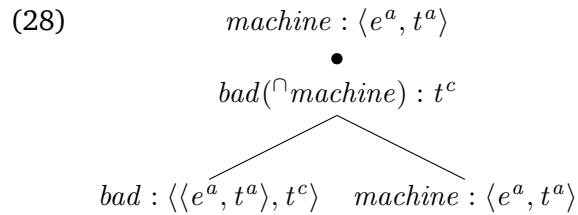
¹¹‘CI’ is for ‘conventional implicature’.

PROBLEMS WITH WHAT IS MODIFIED As Potts himself observes, there are many uses of expressive adjectives of this sort—in fact, of *damn* in particular—for which something more must be said. What he proposes to deal with these cases, though, proves to be of limited help with respect to the current goals.

A clear problematic case is (27):

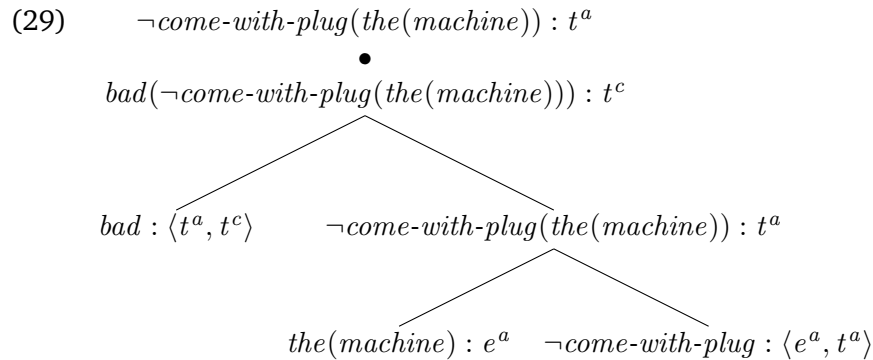
(27) The damn machine didn't come with an electric plug. (Potts 2003)

Given (25), the predicted interpretation here would be one in which *damn machine* expresses generalized disapproval of machines as a kind:



This isn't the desired result, though. One can very naturally talk about a *damn machine* without having the sentiment that machines are bad.

What Potts proposes to deal with this is that *damn* in these instances receives a clause-modifying adverbial interpretation, and actually gives rise to a semantic representation like (29):



Importantly, this proposal has some firm empirical grounding—various adjectives can, under particular and somewhat mysterious circumstances, receive 'adverbial' readings. The most familiar such case may be *The occasional sailor walked by* (Stump 1981, Larson 1999, Zimmerman 2000), in which the contribution of *occasional* is paraphrasable with an adverb as *Occasionally, a sailor walked by*.

But the predicted interpretation for this sentence, though, still raises some difficulties. The expressive meaning now assigned to the sentence

is one that might otherwise be conveyed by uttering ‘Damn. The machine didn’t come with an electric plug.’ Certainly, this is an improvement. But with respect to a sentence like (30), it predicts an unattested adverbial reading:

- (30) The fucking people next door finally stopped playing their accordion.

The adverbial reading here can be represented as in (31):

- (31) *bad(finally-stop-playing-accordion(the(people-next-door))) : t^c*

This would be a reading in which the sentence communicates disapproval of the cessation of accordion playing. This is nearly the opposite of the actual reading. The kind-modifying approach is of no help here either, because *people next door*—being an inherently indexical expression—has no kind counterpart, as the oddness of e.g. *#People next door are widespread* reflects (Carlson 1977). Nor would it help to attach *fucking* below *next door*, since that would predict a reading in which the sentence communicates disapproval of people in general. This is a possible reading, perhaps, but certainly not the natural one. So this approach predicts one interpretation for (31) that is not in fact possible, and does not predict its actual interpretation.

PROBLEMS WITH OTHER MODIFIERS If either version of this approach were simply applied as-is to most of the adjectives and adverbs of interest here, the wrong interpretation would result. Neither of the predicted interpretations expressed in (32a) and (32b) properly characterize the contribution of the adjective:

- (32) Every unsuitable word was deleted.
a. ‘Words (as a kind) are unsuitable.’
b. ‘Unsuitably, every word was deleted.’

The situation is similar with respect to adverbs, though it is not entirely clear what an ‘adverbial reading’ of an adverb would be:

- (33) It’s regrettable that the Titanic slowly sank.
a. ‘Sinkings (as a kind) are slow.’
b. *#?*‘Slowly, it’s regrettable that the Titanic sank.’

POSITIVE PREDICTION In light of these problems, why go down this road? It is of course possible that the behavior of inherently expressive modifiers

such as *damn* and *fucking* is in some essential way unrelated to how garden-variety modifiers can be interpreted nonrestrictively. But despite the obstacles to connecting these phenomena directly, drawing such a connection does make a surprising and desirable prediction.

It is part of the lexical semantics of *damn* and *fucking* that they can receive expressive interpretations only—they have no meaning apart from this, and there is no way to interpret them as contributing ordinary descriptive meaning. If what is banned from post-head positions is exactly this kind of meaning, then it should be the case that *damn* and *fucking*, having no non-expressive meaning to contribute, should be unable to occur in such positions at all. This is in fact the case:¹²

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

- (35) a. He'll damn well invade Iran.
b. *He'll invade Iran damn well.

As (34) demonstrates, adverbial *fucking* is restricted to leftward positions in exactly this way. And this is the case for *damn well*, the adverbial analogue of *damn*, as well, as (35) shows.

4.4 Building an Alternative: An Analogy to Definite Descriptions

An essential problem here is this: It seems to be a fundamental property of expressive meaning (or conventional implicatures) that a constituent with such an interpretation can't contain a variable inside it that is bound from outside it. (Karttunen & Peters 1975 termed this 'the binding problem'.) The way around this is to suppose that nonrestrictive modification always involves reference, or at least some form of quantificational independence. The problem faced here is that in e.g. *unsuitable word* or *damn Republican*, the modified expression is property-denoting. So how then to reconcile this with the need to keep expressive and at-issue meaning apart from each other in the right way? What *do* expressive modifiers modify?

To address this question, it may help to momentarily revisit an old analytical intuition: that expressive meaning (or in any case nonrestrictive modification) involves, in some sense, interleaving two utterances, one commenting on or elaborating the other. Seen in this light, perhaps the Larson & Marušič (2004) paraphrase of (36a) in (36b) is more than just apt, but also revealing:

¹²Setting aside an irrelevant verbal reading in (34) and an irrelevant manner reading in (35).

- (36) a. Every unsuitable word was deleted.
 b. Every word was deleted. They were unsuitable.

What's special about (36a) (on the relevant reading) is that it is a way of saying both sentences of (36b) at once. And the linguistic trick that makes (36b) possible is using *they* to refer back to a plural individual consisting of the words quantified over by *every*.

Thus an answer to the question just raised presents itself: Maybe what these nonrestrictive modifiers modify is a potentially plural discourse referent such as the one the pronoun in (36b) refers to.

Importantly, the anaphora (36b) would not be possible with a singular pronoun:

- (37) *Every word_{*i*} was deleted. It_{*i*} was unsuitable.

That is, (37) can't mean 'Every word was deleted and unsuitable'. A natural assumption about why this anaphora is nonetheless possible in (36b) is that this *they* is an E-type pronoun, and consequently is interpreted like a definite description (Heim 1990):

- (38) Every word was deleted. *The words* were unsuitable.

This approach helps avoid an interpretation that includes an element such as 'words were unsuitable', because, unlike kinds, definite descriptions involve a contextual domain restriction.

What's being quantified over in the unsuitable-words example is not, of course, all words, but only the contextually relevant ones—a fact I'll reflect here using a contextually-supplied resource domain variable *C* (Westerståhl 1985, von Stechow 1994), as in (39) and (40):¹³

- (39) a. Every unsuitable word_{*C*} was deleted.
 b. 'Every word_{*C*} was deleted. The words_{*C*} were unsuitable.'
 c. 'For every word *x* in *C*, *x* was deleted, and the sum of the words in *C* was unsuitable.'

- (40)
$$\forall x[[word(x) \wedge x \in C] \rightarrow deleted(x)] : t^a$$

$$\bullet$$

$$unsuitable(sup(\lambda y . words(y) \wedge y \in C)) : t^c$$

¹³In addition to contextual domain restrictions, these rough interpretations introduce a supremum operator that loosely corresponds to the definite determiner in the paraphrases. This is not as significant a move, however. Indeed, the Chierchia (1984) nominalizing type-shift \cap itself has this general kind of semantics (at least extensionally). I am also placing the resource variable *C* directly in the syntax, as a subscript on the head, for reasons that may become clear.

Roughly analogous assumptions are possible for adverbs:¹⁴

- (41) a. If a ship slowly sinks_C, it's always regrettable.
 b. 'Every ship-sinking_C is regrettable. The sinkings_C (i.e., the relevant sinkings) are slow.'
 c. 'For every ship-sinking event e in C , e is regrettable, and the sum of all the ship-sinking events in C is slow.'

$$(42) \quad \forall e[[\textit{ship-sinking}(x) \wedge e \in C] \rightarrow \textit{regrettable}(e)] : t^a$$

•

$$\textit{slow}(\textit{sup}(\lambda e' . \textit{ship-sinking}(e') \wedge e' \in C)) : t^c$$

Striving to assemble these interpretations may be a step toward a more adequate general understanding.

It also provides an alternative way of understanding the *damn/fucking* facts in the previous sections. On this view, *the damn machine* will convey disapproval of only the machine relevant in the context, and *fucking people next door*, disapproval of contextually relevant people next door.

4.5 Expressive Predicate Modification

The problem remains, however, of building up the interpretations in the previous section compositionally, and of doing so in a way that captures the syntactic constraints on where such nonrestrictive readings are available.

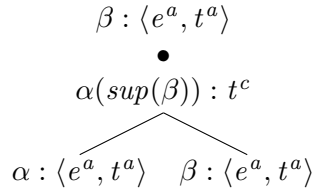
THE RULE Since this is a two-dimensional semantics, with distinct dimensions of meaning being computed and distinct composition rules assembling them, perhaps rules that introduce expressive meaning may look quite different in principle from ones that do not. Specifically, maybe rules that introduce expressive meaning can be directly sensitive to precedence in a way ordinary non-expressive meaning is not. This would accord naturally with the intuition that nonrestrictive modifiers are in some sense secondary or additional, extra comments on the current utterance that happen to be interleaved with it.

In view of this, we can adopt the rule in (43). Potts' framework already has a rough counterpart to standard function application that operates in the expressive-meaning dimension—namely, the rule of 'Conventional Implicature Function Application' mentioned earlier. Adopting (43) would maintain the parallelism by adding an expressive counterpart to a rule of intersective

¹⁴There is a certain amount of sleight of hand taking place in (41) to avoid intensionality.

modifier interpretation:¹⁵

(43) EXPRESSIVE PREDICATE MODIFICATION



...where the relative order of α and β is as indicated

This rule can be understood to do three things:

- The *sup* operator picks out the largest plural individual in the extension of the modified expression (β).
- The denotation of the modifier (α) is predicated of this plural individual. Crucially, this happens *in the expressive dimension of interpretation*.
- The ordinary descriptive meaning of the modified expression is simply passed up as the ordinary descriptive meaning of the whole.

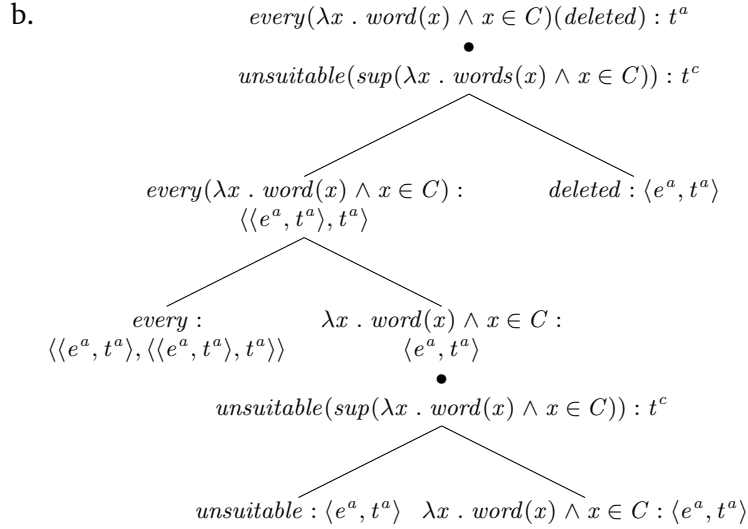
HOW THIS WORKS This rule will give rise to interpretations such as (44) and (45):¹⁶

¹⁵This is slightly simplified, in that strictly speaking, it should reflect that the daughters can themselves have expressive meaning. This makes no substantive difference in this framework.

¹⁶I am adopting the conventions that events (or, as would ultimately be necessary, situations) are of type s and that (i) holds:

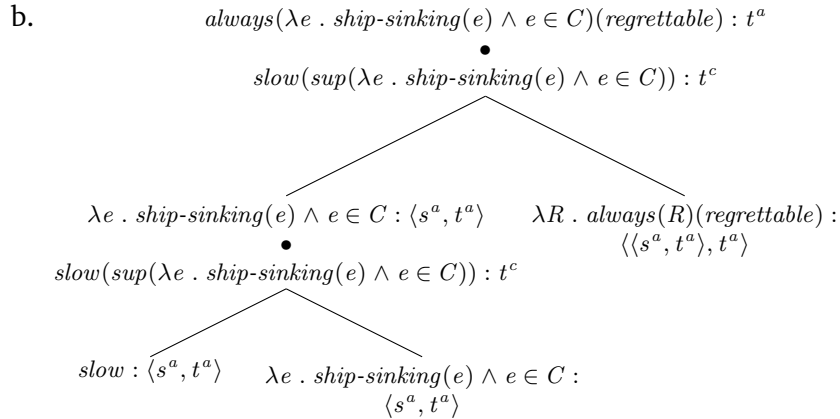
(i) for any $\alpha, \alpha_C \rightsquigarrow \lambda x . \alpha(x) \wedge x \in C$

(44) a. [Every [unsuitable word_C]] was deleted.



This mirrors the Larson & Marušič (2004) paraphrase. Similar results for the adverbial cases:

(45) a. [If [a ship slowly sinks_C]] [it is [always regrettable]].



It bears pointing out here that I am assuming, unconventionally, that C is interpreted on the head noun rather than on the determiner. This is crucial. It is this that ensures that the extension of the NP is whittled down appropriately *before* the nonrestrictive modifier applies to it.

HOW IS THIS INTERSECTIVE? In what sense is this a rule of intersective modifier interpretation? True, nothing is conjoined. But this does capture the same intuitive content of such a rule, and shares some of its essential

properties. The expressions it combines must both be of the same semantic type, for example. As with Predicate Modification, they must in fact both denote properties. Moreover, because $sup(\beta)$ must satisfy both α and β (the latter by definition), the conjunctive character of such a rule is implicitly captured.

In fact, the way (45) is formulated *requires* that it target only intersective modifiers. This makes a substantive prediction: that nonrestrictive readings of the relevant kind should be possible only for intersective modifiers. This seems to be the case. Certainly, it is difficult to see how the modifiers in (46) could get nonrestrictive interpretations:

- (46) a. Every alleged mistake was deleted.
b. Most possible students visited for a few days.
c. The ship was probably sinking.

This may actually serve as a useful diagnostic for intersective modification in cases which remain unclear, such as subsective adjectives generally (Landman 2001, Larson 1998, Siegel 1976).

4.6 *Is 'Left Branch' Good Enough? Will Head Movement Break This?*

Now that the proposal has been laid out, it is possible to more directly address a thorny question that has been lingering in the background. The generalization as it was presented early on was about the relative surface order of heads and modifiers. But of course there are a number of structures that can derive any particular order—a modifier might wind up to the right of a head, for example, even though it occupies a left branch. So perhaps it is simplistic to state the generalization as a simple matter of left branches versus right branches, as the proposed rule in (43) does. A related question, essentially a more specific form of it, is how this all interacts with head movement, which can change the relative surface order of modifier and head.

In fact, though, this kind of characterization may be an advantage. Among its important properties is that it may make it possible to derive the variation in the form it takes from one language to another via head movement. Returning to Romance for a moment, the generalization there is not that postnominal adjectives must be restrictive, but that prenominal ones must be nonrestrictive. Taking into account the independent fact that Romance nouns move higher in their NP (Bernstein 1993, Cinque 1994, others), at least half this generalization follows. The reason both readings are available in surface postnominal positions is that there are both left and right branches that are spelled out right of the noun.

Moreover, there is actually more flexibility with respect to head movement in (43) than there may seem. It can actually restrict the availability of nonrestrictive interpretations on the basis of the position of the head in a more fine-grained way. More often than not, the position in which heads are interpreted doesn't matter for the semantics, and usually it's convenient to assume they are interpreted in their base position. But nothing requires this, and one could equally well suppose that (some) heads are interpreted in their surface position and semantically reconstruct, binding so-called 'big'—that is, high-type—traces. In light of (43) and the binding properties of expressive modifiers, this has consequences. The trace of a head inside the scope of an expressive modifier, if bound from outside its scope, would bring about the (independently) ruled-out binding-across-dimensions configuration. Thus a head can't bind its trace in the expressive meaning from inside the ordinary-meaning dimension. In turn, this and the left-branch requirement together create a system in which these nonrestrictive modifiers can only occur left of *wherever a head is interpreted*.

Given all this, some subtle predictions arise with respect to English as well. Assuming that verb movement in English is present but short (Johnson 1991) and that verbs are interpreted in their base positions, adverbs in English *should* admit non-restrictive readings, even though right of the verb at the surface, if the verb has moved past them. This may be right:

(47) If a government transfers prisoners secretly t to Syria, it's always

↑
 inexcusable.

In (47), the verb moves from the position indicated by the trace. Consequently, *secretly* should be able to get a nonrestrictive interpretation.

4.7 An Alternative Approach

Quite clearly, the proposal laid out here rests on a highly unorthodox and in some respects odd idea: that once fundamental distinctions are made among different tiers or layers of meaning, it makes sense to ask whether even the very basic notion that semantics is insensitive to linear order should necessarily carry over from standard descriptive meaning. But this must at this point be regarded as a kind of conjecture—alternative explanations of these facts are possible.

Chris Kennedy (p.c.) suggests one alternative route. Potts' proposal, and consequently the proposal here that builds on it, would place the burden of relating expressive and at-issue meaning squarely on the shoulders of the semantics. Instead, one might place more of the explanatory burden on

the syntax, thereby simplifying the semantics. Rather than a separate rule of Expressive Predicate Modification or CI Application, one might instead suppose there is a functional head E, that takes APs as specifiers and NPs as complements, or AdvPs as specifiers and VPs as complements. Semantically, it would do what Expressive Predicate Modification does:

$$(48) \quad E \rightsquigarrow \left[\begin{array}{c} \lambda f \lambda g . f : \langle e^a, t^a \rangle \\ \bullet \\ \lambda f \lambda g . g(\text{sup}(f)) : t^c \end{array} \right]$$

$$(49) \quad \begin{array}{c} \text{EP} \\ \swarrow \quad \searrow \\ \text{AP} \quad \text{E}' \\ | \quad \swarrow \quad \searrow \\ \text{unsuitable} \quad \text{E} \quad \text{NP} \\ | \\ \text{word}_C \end{array} \rightsquigarrow \left[\begin{array}{c} \lambda x . \text{word}(x) \wedge x \in C : \langle e^a, t^a \rangle \\ \bullet \\ \text{unsuitable}(\text{sup}(\lambda x . \text{word}(x) \wedge x \in C)) : t^c \end{array} \right]$$

This has several advantages. First, and most relevant here, it is more semantically conservative—it doesn't commit to any notion that the semantics must be sensitive to linear order. Second, the place where linear order is in fact expressed on this view is in the *syntax* of E, which seems natural. Third, this provides accounts of cross-linguistic variation in a fairly direct way. Languages that differ in the positions in which nonrestrictive modification is possible can be understood to differ either in the position in the sentence E occupies or in its headedness. And perhaps the greatest advantage of this approach is that it is consistent with a stronger notion of compositionality. Expressive Predicate Modification introduces elements of semantics—such as the supremum operator—that correspond to no linguistic expression and nothing in the syntax.

These are significant, of course. But of course they don't come for free. Most obviously, while this alternative approach is clearly more conservative in terms of the architecture of the grammar, it is certainly less syntactically conservative. Of course, if an overt expression of E could be discovered—or some other independent syntactic evidence could be brought to bear on the issue—this would be an appealing approach. And taking a syntactic leap in this way has the methodological advantage of compelling one to look for such evidence. Precisely because of that, though, it removes any pressure to look harder for evidence of semantic sensitivity to linear order, so this methodological argument could cut either way.

Another difficulty with this approach is that it embodies essentially the Cinquean conception that proved problematic in section 3.2. As pointed out there, the nonrestrictive-restrictive contrast seems to cross-cut other semantically-based adjective and adverb classes. Thus, even though this is essentially a Cinquean approach, in a curious way it would be difficult to

reconcile with a broader Cinquean model—one would have to find principled answers to questions like ‘should a nonrestrictive evaluative adjective occupy the specifier position associated with evaluative adjectives or expressive adjectives, or somehow both?’ This would be an odd state of affairs in another respect, too. The principal motivation for the hypothesis that modifiers occupy specifier positions to functional heads is that this may provide a means of understanding otherwise mysterious restrictions on modifier order. But nonrestrictive modifiers don’t seem to be associated with a fixed position relative to other adjectives in quite the same way other adjectives are.

That said, there does not appear to be any data in this domain that could serve as a case against the alternative approach in (48) and (49). The main reason to prefer the account initially laid out above to this one is precisely *because* it is more unconventional, and hence more interesting.

5 Final Remarks

The core empirical argument here has been that both adjectives and adverbs can receive nonrestrictive interpretations only in leftward positions, and that they contribute expressive meaning (just as nonrestrictive relatives do). I suggest an understanding of this in which a nonrestrictive modifier is predicated of something like a contextually-restricted definite description. In this way, such modifiers receive an interpretation that loosely mirrors E-type anaphora. I also introduce a rule of semantic composition, Expressive Predicate Modification, as the expressive counterpart of the ordinary Predicate Modification rule. The proposed rule makes direct reference to linear order, requiring an expressive modifier to be on a left branch.

It’s worth noting that throughout this system, syntactic and semantic constituency coincide. Among the other advantages of this approach is that it seems to get the right interpretation for nonrestrictive leftward modifiers in a way that is appropriately sensitive to what the modifier is modifying, and that creates parallel interpretation rules in both semantic dimensions. And, in providing an account that parallels a discourse anaphora effect, it has the virtue of corresponding to a natural paraphrase of what such nonrestrictive modifiers mean and of relating these structures to another (somewhat surprising) linguistic phenomenon. There is a somewhat unnerving big-picture question lurking here, though. Semantic rules are now standardly thought to be unable in principle to refer to linear order. But in light of multidimensional semantic theories such as that of Potts and others (notably Chierchia (2001), who treats scalar implicatures in a compositional multidimensional way, and of course such theories of focus (Rooth 1985)), perhaps it is worth asking afresh whether in fact this standard view should

extend to all different levels of meaning—or, to put things another way, if these entirely distinct dimensions are genuinely necessary, maybe we should *expect* them to be fundamentally different in various respects.

References

- Alexiadou, Artemis. 1997. *Adverb Placement: A Case Study in in Antisymmetric Syntax*. John Benjamins, Amsterdam.
- Bellert, Irena. 1977. 'On semantic and distributional properties of sentential adverbs'. *Linguistic Inquiry* 8(2), 337–351.
- Bernstein, J. 1993. *Topics in the Syntax of Nominal Structure Across Romance*. Doctoral dissertation, City University of New York.
- Bolinger, Dwight. 1967. 'Adjectives in English: Attribution and predication'. *Lingua* 18, 1–34.
- Carlson, Gregory N. 1977. *Reference to Kinds in English*. Doctoral dissertation, University of Massachusetts Amherst, Amherst, Massachusetts.
- Chierchia, Gennaro. 1984. *Topics in the Syntax and Semantics of Infinitives and Gerunds*. Doctoral dissertation, University of Massachusetts Amherst.
- Chierchia, Gennaro. 2001. 'Scalar implicatures, polarity phenomena, and the syntax/pragmatics interface'. Ms., University of Milan.
- Cinque, Guglielmo. 1994. 'Evidence for partial N-movement in the Romance DP'. In Cinque et al. (ed.), *Paths Toward Universal Grammar: Essays in Honor of Richard S. Kayne*. Georgetown University Press, Washington D.C.
- Cinque, Guglielmo. 1999. *Adverbs and Functional Heads: A Cross-Linguistic Perspective*. Oxford University Press, New York.
- Cinque, Guglielmo. 2003. 'The dual source of adjectives and XP- vs. N-raising in the Romance DP'. Handout, North Eastern Linguistic Society (NELS) 35.
- Dixon, R.M.W. 1982. *Where Have All the Adjectives Gone?* Mouton, Berlin.
- Ernst, Thomas. 1984. *Toward an Integrated Theory of Adverb Position in English*. Doctoral dissertation, Indiana University, Bloomington.
- Ernst, Thomas. 2002. *The Syntax of Adjuncts*. Cambridge University Press, Cambridge.
- von Stechow, Kai. 1994. *Restrictions on Quantifier Domains*. Doctoral dissertation, University of Massachusetts Amherst.
- Geuder, Wilhelm. 2000. *Oriented Adverbs: Issues in the Lexical Semantics of Event Adverbs*. Doctoral dissertation, Universität Tübingen.
- Göbbel, Edward. 2004. 'Focus and marked positions for VP adverbs'. Ms., University of Tübingen.

- Heim, Irene. 1990. 'E-type pronouns and definite anaphora'. *Linguistics and Philosophy* **13**(2), 137–178.
- Hetzron, Robert. 1978. 'On the relative order of adjectives'. In H. Seiler (ed.), *Language Universals*, pp. 165–184. Gunter Narr Verlag, Tübingen.
- Jackendoff, Ray. 1972. *Semantic Interpretation in Generative Grammar*. MIT Press, Cambridge, Massachusetts.
- Johnson, Kyle. 1991. 'Object positions'. *Natural Language and Linguistic Theory* **9**, 577–636.
- Karttunen, Lauri & Stanley Peters. 1975. 'Conventional implicature in Montague grammar'. In *Proceedings of the First Annual Meeting of the Berkeley Linguistics Society*, pp. 266–278. Berkeley Linguistics Society, University of California at Berkeley, Berkeley, California.
- 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.
- Laenzlinger, Christopher. 2000. 'French adjective ordering: Perspectives on DP-internal movement types'. In *Generative Grammar in Geneva*, vol. 1, pp. 55–104.
- Landman, Meredith. 2001. 'Adjectival modification restricted'. Ms, University of Massachusetts Amherst.
- Larson, Richard. 1998. 'Events and modification in nominals'. In D. Strolovitch & A. Lawson (eds.), *Proceedings of SALT XII*. CLC Publications, Ithaca, New York.
- Larson, Richard. 1999. 'Semantics of adjectival modification'. Lecture notes, LOT Winter School, Amsterdam.
- Larson, Richard & Franc Marušič. 2004. 'On indefinite pronoun structures with APs: Reply to Kishimoto'. *Linguistic Inquiry* **35**(2), 268–287.
- Mackenzie, Ian. 2004. 'Topics in Spanish syntax'. Lecture notes, University of Newcastle Upon Tyne. URL: <http://www.staff.ncl.ac.uk/i.e.mackenzie/syntax.htm>.
- McConnell-Ginet, Sally. 1982. 'Adverbs and logical form: A linguistically realistic theory'. *Language* **58**, 144–184.
- McNally, Louise & Gemma Boleda Torrent. 2003. 'Relational adjectives as properties of kinds'. In O. Bonami & P. Cabredo Hofherr (eds.), *Empirical Issues in Syntax and Semantics*, vol. 5, pp. 179–196.
- Morzycki, Marcin. 2005. *Mediated Modification: Functional Structure and the Interpretation of Modifier Position*. Doctoral dissertation, University of Massachusetts Amherst.
- Peterson, Philip L. 1997. *Facts, Propositions, Events*. Kluwer Academic Publishers, Dordrecht.
- Potts, Christopher. 2003. *The Logic of Conventional Implicatures*. Doctoral dissertation, University of California, Santa Cruz.

- Rawlins, Kyle. 2003. 'A study in some adverb denotations'. B.A. honors thesis, University of Massachusetts Amherst.
- Rooth, Mats. 1985. *Association with Focus*. Ph.D. thesis, University of Massachusetts, Amherst.
- Shaer, Benjamin. 2000. 'Syntactic position and the readings of 'manner' adverbs'. In *ZAS Papers in Linguistics* 17, pp. 265–286.
- Shaer, Benjamin. 2003. "Manner' adverbs and the association theory: Some problems and solutions'. In Edwald Lang, Claudia Maienborn, & Cathrine Fabricius-Hansen (eds.), *Modifying Adjuncts*, pp. 211–259. Mouton de Gruyter, Berlin.
- Siegel, Muffy A. 1976. 'Capturing the Russian adjective'. In Barbara H. Partee (ed.), *Montague Grammar*, pp. 293–309. Academic Press, New York.
- Sproat, Richard & Chilin Shih. 1988. 'Prenominal adjectival ordering in English and Mandarin'. In J. Blevins & J. Carter (eds.), *Proceedings of NELS 18*. University of Massachusetts GLSA, Amherst.
- Stump, Gregory T. 1981. 'The interpretation of frequency adjectives'. *Linguistics and Philosophy* 4(2), 221–257.
- Valois, D. 1991. *The Internal Syntax of DP*. Doctoral dissertation, UCLA.
- Westerståhl, Dag. 1985. 'Determiners and context sets'. In Johan van Benthem & Alice ter Meulen (eds.), *Generalized Quantifiers in Natural Language*. Foris, Dordrecht.
- Wyner, Adam. 1994. *Boolean Event Lattices and Thematic Roles in the Syntax and Semantics of Adverbial Modification*. Doctoral dissertation, Cornell University.
- Wyner, Adam. 1998. 'Subject-oriented adverbs are thematically dependent'. In Susan Rothstein (ed.), *Events in Grammar*. Dordrecht: Kluwer.
- Zimmerman, Malte. 2000. 'Pluractional quantifiers: The *Occasional* construction in English and German'. In B. Jackson & T. Matthews (eds.), *Proceedings of SALT X*. CLC Publications, Ithaca, New York.

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