

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 Jackendoff (1972), Bellert (1977), Ernst (1984, 2002) 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

For comments on various incarnations of this work, thanks to Adam Wyner, Alan Munn, Angelika Kratzer, Anna Maria di Sciullo, Anne-Michelle Tessier, Barbara Abbott, Ben Shaer, Brigid Copley, Chris Kennedy, Chris Piñón, Cristina Schmitt, Gina Taranto, Grover Hudson, Iannis Thomadakis, Louise McNally, Peter Svenonius, Tom Ernst, and audiences at the Workshop on the Semantics of Adjectives and Adverbs at Universitat Pompeu Fabra, at Michigan State University, and at the 2005 LSA Annual Meeting, and to the various people I'm no doubt forgetting.

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 to my knowledge universally adopted in the (small) literature on this topic.

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

And, as numerous other papers in this volume note, there are semantically-based ordering restrictions on adjectives, 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 and 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 and 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 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 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 (5b) 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*:

- (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 be 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:

- (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 F’s classes, all of which were boring.’
 b. **Nonrestrictive**: ‘Everybody remembers just F’s classes which were boring.’
- (10) *Le lezioni noiose* di Ferri se le ricordano tutti. (Cinque 2003)
 a. **Restrictive**: ‘Everybody remembers F’s classes, all of which were boring.’
 b. **Nonrestrictive**: ‘Everybody remembers just F’s classes 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 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.²
- (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.

²This is built around an example due to Jackendoff (1972).

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:³

- (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.

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.

³The * here is mine.

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:⁴

- (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.

⁴Barbara 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 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.

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, say, 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.⁵

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.

3.2 *Assimilating These to Other Effects of Modifier Position*

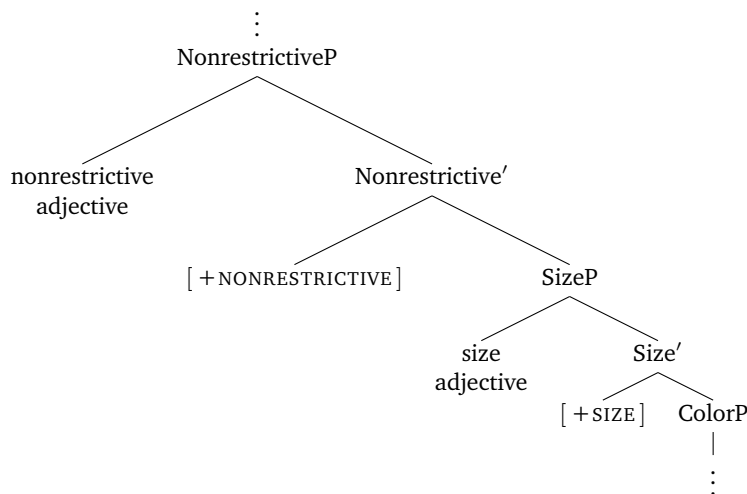
Another natural approach to these observations is to suppose that the solution should follow straightforwardly from a general theory of modifier position—from whatever determines the relative order of evaluation, color, and size adjectives, for example, or pragmatic, subject-oriented, and manner adverbs. 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 Ernst 2002, Cinque 1999, Alexi-

⁵Certainly, it is not clear that this result would follow purely from facts about the distribution of phrasal stress, for example.

adou 1997, 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, as perhaps 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.⁶

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

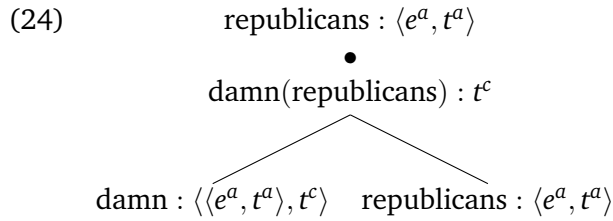
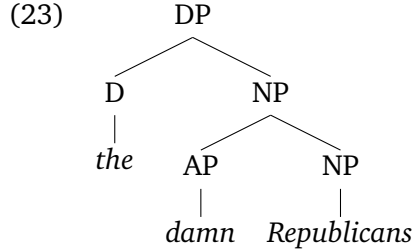
4.2 *Potts 2003: Some Theoretical Machinery and Damn Expressive Adjectives*

To serve as a foundation for an account, I will adopt the general framework of Potts (2003) for representing expressive meaning. In this framework, the computation of expressive meaning (conventional implicatures)

⁶Curiously, 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.

and ordinary truth-conditional (‘descriptive’) meaning is computed compositionally, in parallel, and along distinct dimensions of semantic representation.

Potts proposes an analysis of nonrestrictive adjectives that focuses on adjectives that lexicalize an nonrestrictive meaning, e.g., *damn* and *fucking*.⁷ In these representations, a syntactic tree such as the one in (23) is understood to correspond to 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.

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*).⁸ A rule of semantic composition—‘CI Application’⁹—puts descriptive and expressive denotations together in the way (24) reflects.

⁷He calls these ‘expressive adjectives’, using the term in a more restricted sense than I will here. He suggests, though, that analogous nonrestrictive uses of e.g. *lovely* work roughly similarly.

⁸One 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 .

⁹‘CI’ is for ‘conventional implicature’.

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):

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

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):

$$(26) \quad \begin{array}{c} \text{republican} : \langle e^a, t^a \rangle \\ \bullet \\ \text{bad}(\cap \text{republican}) : t^c \\ \swarrow \quad \searrow \\ \text{damn} : \langle \langle e^a, t^a \rangle, t^c \rangle \quad \text{republican} : \langle e^a, t^a \rangle \end{array}$$

4.3 Bumps in the Road

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

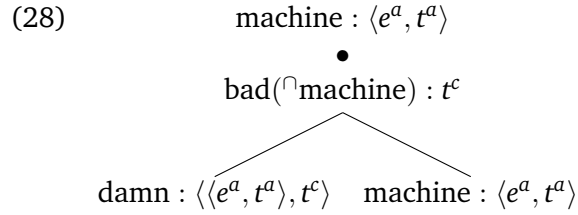
ISSUES OF SCOPE AND CONSTITUENCY As Potts himself observes, there are many uses of expressive adjectives of this sort—in fact, of *damn* in particular—for which something more must be said. What he proposes to deal with these cases, though, would give rise to severe problems if extended to the adverb facts.

One problematic case is (27):¹⁰

$$(27) \quad \text{The damn machine didn't come with an electric plug.} \quad (\text{Potts 2003})$$

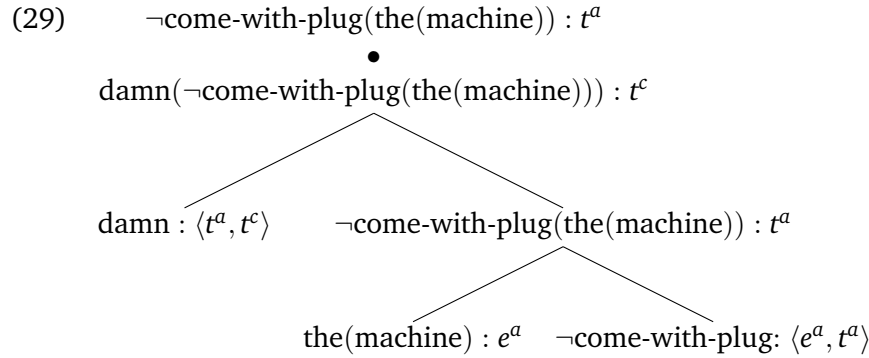
¹⁰Others include examples such as (ia), in which *damn* modifies an NP—*people in the next room*—that is inherently indexical and consequently has no corresponding kind, as the ill-formedness of (iib) reflects:

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



This certainly 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. Still, it predicts that such uses should systematically have readings that can be expressed with the adverbial form of the modifier in the same sentence. This does not seem to be borne out:

-
- (i) a. The damn people in the next room won’t stop playing their fucking accordions.
 b. #People in the next room are horrible accordion players.

- (30) a. A fucking Republican sold my grandmother to Halliburton.
 b. A Republican fucking sold my grandmother to Halliburton.

These do, however, differ—(30a) conveys disapproval of Republicans, while (30b) of having one's grandmother sold to Halliburton. There need not be any disapproval of Republicans generally conveyed in (30b), but there does not appear to be any natural reading of (30a) that fails to convey disapproval of Republicans.

Moreover, the clausal-scope approach predicts that it should make no difference which NP the modifier finds itself in. This does not seem to be borne out either:

- (31) A Republican sold my fucking grandmother to Halliburton.

This has one reading involving disapproval of one's grandmother that neither (30a) or (30b) quite seems to have.¹¹

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.'

4.4 A 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

¹¹None of this is to say that (30) and (31) don't all have at least one reading in common, roughly consistent with the clause-modifying analysis and more or less paraphrasable as 'Fuck. A Republican sold my grandmother to Halliburton.' (Peter Svenonius, p.c.)

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:

- (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.

4.5 The Binding Problem

There is one other difficulty to note before moving forward, perhaps a more fundamental one.

It is a basic 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. (Potts, following Karttunen and Peters 1975, Beaver 1991, calls this 'the binding problem'.) To put it in slightly more theory-internal terms, it is not possible for an element in the ordinary dimension of meaning to bind a variable in the expressive dimension. These layers of meaning just can't communicate.

The deeper intuition behind this insight seems to be, very roughly, that nonrestrictive modification involves reference, some independent connection to the world—or at least some form of quantificational independence. This is, the idea goes, why (36b) is odd:

- (36) a. Clyde, who enjoys monkeys, is not that entertaining.
b. #Every eight-year-old, who enjoys monkeys, is not that entertaining.

The relative clause here can't get a nonrestrictive interpretation because *every eight-year-old* is not referential. The reading in which every eight year

old enjoys monkeys and is not entertaining is ruled out because it would require *every* to from one dimension of meaning into the other.

It is unexpected and problematic, then, that the nonrestrictive modifiers in (37) *do* seem to target non-referential expressions:

- (37) a. Every damn Republican wants to sell your grandmother to Halliburton.
b. Every unsuitable word was deleted.

Assuming that these involve predicating the modifier of a kind would assimilate these to (37a). But as argued above, this sort of an approach doesn't quite suffice for independent reasons. So how, then, to reconcile the facts in (36) and (37)? What *do* these modifiers modify?

4.6 *Building an Alternative*

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 and Marušić (2004) paraphrase of (38a) in (38b) is more than just apt, but also revealing:

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

What's special about (38a) (on the relevant reading) is that it is a way of saying both sentences of (38b) at once. And the linguistic trick that makes (38b) 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 (38b) refers to.

Importantly, the anaphora (38b) would not be possible with a singular pronoun:

- (39) *Every word_i was deleted. It_i was unsuitable.

That is, (39) can't mean 'Every word was deleted and unsuitable'. A natural assumption about why this anaphora is nonetheless possible in (38b) is that this *they* is an E-type pronoun, and consequently is interpreted like a definite description (Heim 1990):

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

4.7 Another Ingredient: Contextual Domain Restrictions

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 (41) and (42):¹²

- (41) 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.’

$$(42) \quad \forall x[[\text{word}(x) \wedge x \in C] \rightarrow \text{deleted}(x)] : t^a$$

$$\bullet$$

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

Roughly analogous assumptions are possible for adverbs:¹³

- (43) 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.’

$$(44) \quad \forall e[[\text{ship-sinking}(e) \wedge e \in C] \rightarrow \text{regrettable}(e)] : t^a$$

$$\bullet$$

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

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 machines relevant in the context; *fucking republican*, disapproval of contextually relevant republicans; and *fucking sold my grandmother to H.*, disapproval of the relevant events of grandmother-selling.

¹²In 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.

¹³There is a certain amount of sleight of hand taking place in (43) to avoid intensionality.

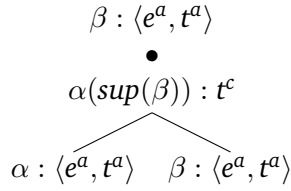
4.8 The Proposal: Expressive Predicate Modification

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 (45). 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 (45) would maintain the parallelism by adding an expressive counterpart to a rule of intersective modifier interpretation:¹⁴

(45) EXPRESSIVE PREDICATE MODIFICATION



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

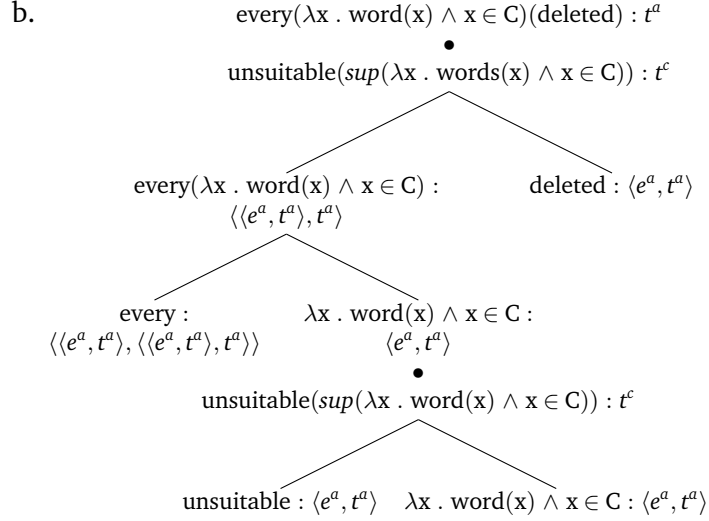
This rule can be understood to do three things:

- 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.

¹⁴This 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.

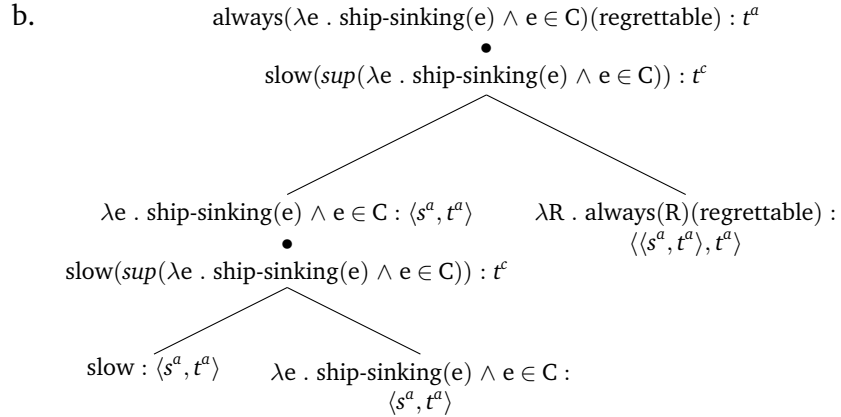
HOW THIS WORKS This rule will give rise to interpretations such as (46) and (47):

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



This mirrors the Larson and Marušić (2004) paraphrase. Similar results for the adverbial cases:¹⁵

(47) a. [If [a ship 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.

¹⁵I am adopting the conventions that events (or, as would ultimately be necessary, situations) are of type s and that (i) holds:

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

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 $\text{sup}(\beta)$ must hold of both α and β (the latter by definition), the conjunctive character of such a rule is implicitly captured.

In fact, the way (47) 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 (48) could get nonrestrictive interpretations:

- (48) 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 subjective adjectives generally (Siegel 1976, Landman 2001, Larson 1998).

4.9 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 (45) 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 nonrestrictive, but that prenominal ones must be restrictive. 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 spelled out right of the noun.

Moreover, there is actually more flexibility with respect to head movement in (45) 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 don'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, binding so-called 'big'—that is, high-type—traces. In light of (45) 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:

- (49) If a government transfers prisoners secretly t to Syria, it's always
↑
inexcusable.

In (49), the verb moves from the position indicated by the trace. Consequently, *secretly* should be able to get a nonrestrictive interpretation.

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 these new 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.

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