Evaluative Adverbial Modification
in the Adjectival Projection

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1 Introduction

One of the principal analytical challenges of adverbial modification is how to account for the intricate and often subtle correlation between an adverb's syntactic position and its interpretation. Why, to consider one familiar class of examples, should subject-oriented readings be associated with an intermediate position in the clause, as in (1a)? Why should manner readings be associated with a relatively lower position, as in (1b)? Why should speaker-oriented readings be associated with a higher position, as in (1c)?[1]

(1) a. Clyde would happily play his tuba.
         rough paraphrase: 'Clyde would be happy to play his tuba.'

     b. Clyde would play his tuba happily.
         rough paraphrase: 'Clyde would play his tuba in a happy way.'

     c. Happily, Clyde would play his tuba.
         rough paraphrase: 'I'm happy Clyde would play his tuba.'

[1] These sentences are patterned after some examples of Jackendoff (1972). The paraphrases here reflect the most natural readings of these sentences, but these are not, of course, the only ones possible.

Attempts to grapple with these issues—from Jackendoff (1972) and McConnell-Ginet (1982) to Cinque (1999) and Ernst (2002), among others—have typically focused on adverbial modification in the verbal and sentential domain, from which the paradigm in (1) is drawn. This is of course no accident. These positions are, after all, the prototypical ones for adverbs. Even so, adverbial modification can be found elsewhere as well—in English and many other languages, it can also occur in the extended adjectival projection. Importantly, the interpretation adverbs receive in these less understood 'ad-adjectival' positions varies predictably from the one they receive elsewhere. Because of this, adverbial modification in the extended adjectival projection may offer an avenue not often taken for the exploration of this larger problem.

This paper examines one large natural class of such AP-modifying adverbs, which have a kind of evaluative interpretation and include *remarkably*, *surprisingly*, and *breath-takingly*, among many others. The central analytical proposal will be that these adverbs are interpreted as arguments of unrealized degree morphology in the functional structure of the APs they modify, in much the same way as measure phrases have been proposed to be. This approach turns out to extend naturally to uses of these adverbs in other positions.

Section 2 identifies the class of adverbs of interest here and explores its distinguishing characteristics. Section 3 develops an analysis of the semantics of sentences containing *remarkably* adverbs based in part on a notion of domain widening in the degree domain, assimilating them to certain exclamatives. Section 4 confronts problems of compositionality these adverbs pose, and arrives at a kind of decomposition in which part of the interpretation of a *remarkably* adverb is contributed by its lexical semantics and part is contributed directly by its place in the architecture of the extended adjectival projection. Section 5 sketches how these syntactic and semantic assumptions can be the foundation of a more general theory of how the meaning of these adverbs is related to the meaning they have in other structural positions. Section 6 concludes.

2 *Remarkably* Adverbs

2.1 *The Cast of Characters*

If, in encountering Clyde, I was struck by his height, I can report this impression in a number of ways. I might simply say that he is tall; alternatively, I might make a slightly stronger claim and say that he is very tall; or I might instead be more precise and say that he is six and a half feet tall. All of these strategies have in common that they convey this information by indicating the relation between, pre-theoretically, points aligned vertically—either the maximal point of Clyde's height

and some minimal height one must attain to count as tall,[2] or else the maximal point of Clyde's height and some zero point at which his height begins. These are all extensional characterizations of Clyde's height.

In contrast, the adverbs of interest here—henceforth *remarkably* adverbs—provide a fundamentally different, intensional means by which to comment on Clyde's height. They characterize Clyde's height not in terms of the relation between points in the actual world, but rather in terms of my attitude toward Clyde's height:[3]

(2)   a. Clyde is *remarkably* tall.
       b. Floyd is *surprisingly* ugly.
       c. Many voters are *horribly* conservative.
       d. Floyd's SUV is *unacceptably* inefficient.
       e. Tranquility is *heart-breakingly* difficult to attain.
       f. Self-referential example sentences are often *unpleasantly* distracting.

Very roughly, *remarkably* adverbs might be said to have a semantics that gives rise to a judgment about having a property to a particular degree—that it is, say, remarkable or surprising or horrible.

This class of adverbs is quite large—indeed, it is an open class. Among its many other members are *amazingly, astoundingly, arousingly, calmingly, disappointingly, earth-shatteringly, excitingly, extraordinarily, frighteningly, grotesquely, heart-breakingly, horribly, illegally,[4] impressively, inappropriately, inconceivably, infuriatingly, interestingly, irritatingly, laughably, mind-numbingly, nauseatingly, provocatively, revoltingly, ridiculously, satisfyingly, shockingly, stimulatingly, stunningly, sufficiently, terribly, terrifyingly, typically, (un)acceptably, unbelievably, unexpectedly, unnervingly, (un)pleasantly, (un)remarkably, unusually, upsettingly, uselessly,* and *wonderfully*.

New adverbs of this class can be coined quite easily. It is perfectly natural, for example, to characterize particularly uncomfortable shoes with a neologism like *foot-shatteringly*:

(3)   How can you wear those things? They look *foot-shatteringly* uncomfortable.

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[2] More precisely, some minimal height one such as Clyde must attain in the relevant context.

[3] If the adverb receives parenthetical intonation, these sentences can have a reading other than the one at issue here. This reading, discussed a bit more in the next section, is the same reading as the one these adverbs receive in higher, clausal positions, as in (5).

[4] *Illegally* in particular gives rise to interesting and especially clear semantic differences in various positions it occupies, as Rawlins (2003) shows.

This seems to be the case even in coinages without relatively transparent internal structure. If we accept a novel adjective *blarg*, it's quite natural to coin a corresponding *remarkably* adverb *blargly*:

(4)   Those things look *blargly* uncomfortable.

It seems important, though, that *remarkably* adverbs seem to be dependent on corresponding adjectives in this way, so much so that coining a novel *remarkably* adverb seems to entail having coined a corresponding adjective. This is the case even when that adjective hasn't been explicitly uttered. If uttered out of the blue, (3) seems to be a simultaneous coinage not only of the new *remarkably* adverb *foot-shatteringly* but also of a new adjective, *foot-shattering*; to the extent that one can imagine making sense of (4) out of the blue, it seems to have the same property. Indeed, there does not seem to be any *remarkably* adverb without a corresponding adjective.

This connection holds semantically as well. The meaning of an *remarkably* adverb and that of its corresponding adjective stand in a fixed relation, and one is always predictable from the other. If we know what *foot-shattering* means, we also know what *foot-shattteringly* means in (3), and vice versa.

2.2   *Contrast with Clause-Modifying Uses*

These adverbs can occur high in a clause-modifying position as well, where they receive a different reading entirely:[5]

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[5] In this clausal position these are speaker-oriented evaluative adverbs, adopting the adverb taxonomy of Ernst (2002) (Cinque 1999 refers to these as simply 'evaluative adverbs'). There do not seem to be any *remarkably* adverbs that occur in clause-modifying positions as speaker-oriented speech-act adverbs such as *frankly* or *honestly*.

Of course, there is a sense in which the reading which *remarkably* adverbs receive can be characterized as speaker-oriented, in that it can reflect a judgment made by the speaker. Like speaker-oriented adverbs (proper), it's not normally possible to use a *remarkably* adverb to indicate a judgment made by the addressee with which the speaker disagrees—this is certainly the case for all the sentences in (2) and (5). But unlike true speaker-oriented adverbs, *remarkably* adverbs can in intensional contexts receive an interpretation in which the judgment they reflect is made by the holder of an attitude:

(i)   a. Greta thinks that Clyde is remarkably tall.
       b. Harriet suspects that Floyd is surprisingly ugly.

If what Greta thinks is that Clyde is six feet tall but does not regard being six feet tall as remarkable, (ia) could be true if the speaker regards being six feet tall as remarkable. It could also be true irrespective of what the speaker regards as remarkable if Greta's only thought about how tall Clyde is is that however tall he is, being that tall is remarkable. In contrast, it is not clear that (ii) is even grammatical:

(5) a. *Remarkably*, Clyde is tall.
      b. *Surprisingly*, Floyd is ugly.
      c. *Horribly*, many voters are conservative.
      d. *Unacceptably*, Floyd's SUV is inefficient.
      e. *Heart-breakingly*, tranquility is difficult to attain.
      f. *Unpleasantly*, self-referential example sentences are often distracting.

With the adverb in this position, no judgment is being rendered specifically about having a property to any particular degree. Rather, to characterize things very crudely for the moment, the judgment in these sentences is about the proposition expressed by the sentence as a whole. These readings are truth-conditionally distinct—if Clyde is a professional basketball player and therefore expected to be very tall, *Clyde is remarkably tall* could be true while (5a) could be false.[6] It is not possible to construe any of the sentences in (5) as having the interpretations of their counterparts in (2).

Just as the meaning of a *remarkably* adverb is predictable from its adjective counterpart, the meaning of sentences like those in (2) is predictable from their counterparts in (5). And, as with adjectives, this fixed semantic relation is apparent in neologisms. Returning to *foot-shatteringly*, once we accept it as a *remarkably* adverb as in (3), we expect (6) to have a particular interpretation paralleling (5) in the relevant respect:

(6) ?Foot-shatteringly, they look uncomfortable.

In this case, assigning this interpretation results in (mild) pragmatic anomaly, yet this anomalous interpretation is the only one available (6).[7] In particular, it cannot mean what (3) means, even though interpreting it this way would yield a non-

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(ii) a. *?Greta thinks that remarkably, Clyde is tall.
      b. *?Harriet suspects that surprisingly, Floyd is ugly.

To the extent that these can be made sense of, the judgment of remarkability or surprisingness is attributed to the speaker (unless the embedded clause is taken to be in some way quotative). In a nutshell, then, *remarkably* adverbs can have *de dicto* readings but their clausal counterparts cannot. This difference is significant, but for current purposes it is sufficient to note that the meaning of *remarkably* adverbs should not be regarded as speaker-oriented in the same sense as the meaning of their clausal counterparts is.

[6] Perhaps (5a) would better be characterized as infelicitous rather than false. This is because clausal uses of these adverbs contribute something other than run-of-the-mill straightforwardly truth-conditional meaning; rather, their contribution seems to be a variety of conventional implicature (Grice 1975, Potts 2003) or expressive meaning (Kratzer 1999b and references therein). While this is certainly an important difference between *remarkably* adverbs and their clausal counterparts, it will generally be safe to disregard it here for convenience.

[7] Actually, it might be better to say that there is actually a *family* of interpretations available for (6), all anomalous. One might imagine interpreting *foot-shatteringly* as a speech-act adverb like *frankly*, for example; but this wouldn't help.

anomalous interpretation. It seems clear, then, that these semantic patterns reflect robust, apparently exceptionless grammatical regularities.

2.3 *Restricted Distribution*

The distribution of *remarkably* adverbs is quite narrowly restricted. They can occur only at the left edge of (the extended projection of) AP. In particular, they cannot occur in right-peripheral positions:

(7) a. *Clyde is tall remarkably.
     b. *Floyd is ugly surprisingly.
     c. *Many voters are conservative horribly.

To the extent that one might be able to salvage sentences like these, it is necessary to provide comma interpretation to the adverb. Doing so, though, results in interpretations like those in (5). By assigning this comma intonation, one is apparently rendering the adverb a kind of parenthetical. In this respect, it is not surprising that in these cases any available interpretation parallels the reading available in higher positions, since irrespective of their position parentheticals more generally receive (something like) wide-scope interpretations (Potts 2003, others). Accordingly, this strategy for salvaging uses like those in (7) is unavailable in sentences in which this flavor of speaker-oriented adverb cannot occur:

(8) a. *Remarkably, how tall is Clyde?
     b. *How tall remarkably is Clyde?

Speaker-oriented adverbs cannot occur in questions, as (8a) reflects, so (8b) cannot be rescued by interpreting *remarkably* this way.

Remarkably adverbs must precede certain other AP-modifying adverbs:[8]

(9) a. George seems remarkably intellectually inadequate.
     b. *George seems intellectually remarkably inadequate.

(10) a. How surprisingly socially awkward is Herman?
      b. *How socially surprisingly awkward is Herman?

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[8] Specifically, *remarkably* adverbs must precede AP-modifying adverbs with a domain adverb (Ernst 2002, Rawlins 2003; under different names, also Bartsch 1976, Moltmann 1997) interpretation.

(i) a. How inadequate intellectually is George?
     b. How awkward socially are many semanticists?

Again, there exists a parenthetical rescue strategy involving comma intonation that is possible in (9); and again, that route is cut off in (10).[9]

2.4 *Not Degree Words*

One natural analytical impulse is to suppose that *remarkably* adverbs are in fact a species of degree word (that is, of Degree head; I will use these interchangeably), like *too*, *very*, *pretty*, or comparative morphology. But does not seem to be the right approach, for several reasons.

Perhaps the clearest of these is that, unlike degree words, *remarkably* adverbs support degree words of their own:[10]

(11) a. Clyde is [more remarkably] tall.
      b. *Clyde is [more quite] tall.

(12) a. Floyd is [quite surprisingly] ugly.
      b. *Floyd is [quite too] ugly.

(13) a. Many voters are [pretty horribly] conservative.
      b. *Many voters are [pretty more] conservative.

One might object at this point that there is a conceivable alternative parse of the sentences in (11–13) in which the degree word is actually associated with the adjec-

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[9] This time for different reasons—the clausal counterpart of *socially* is possible in questions, but parentheticals are apparently not possible immediately following *how*.

[10] These may be marginally possible for some speakers on a reading in which a property is ascribed to the proposition expressed by the whole sentence, paralleling the interpretation of clausal uses of these adverbs in (5). This appears to be the consequence of interpreting the adverb as a parenthetical.

Another potential complication for some speakers with respect to all the judgments in this section is metalinguistic comparatives. As with most other syntactic categories, these are possible with *remarkably* adverbs:

(i) a. ?Clyde is more remarkably tall than somewhat lanky.
     b. ?Floyd is less surprisingly ugly than he is a minor annoyance.

But these uses of comparatives are clearly special and licensed by a distinct set of principles having at least as much to do with phenomena like metalinguistic negation as with true comparatives. Among the ways in which this is manifested are that metalinguistic comparatives can be used with DPs, as in (iia); that they are not in complementary distribution with true comparatives, as in (iib); and that they cannot be expressed using the *-er* morpheme, as in (iic):

(ii) a. ?Clyde is more goofy than he is a fool.
      b. A: I think Donald is even worse than George.
         B: Well, no, I wouldn't say that. ?It seems to me that he's less WORSE than he is just more frequently INTERVIEWED.
      c. *Clyde is goofier than he is a fool.

tive rather than the adverb, as indicated in (14):

(14)   Clyde is [more [remarkably tall]].   *(parse to be rejected)*

If this were the structure of (14), a puzzle arises immediately—*more tall* is not the comparative form of *tall*; *taller* is. Yet what we find in (14) on this structure is comparative morphology applying to an AP headed by *tall*, so we would expect *taller* to occur here. Assuming that the way comparative morphology and adjectives combine morphologically is by head movement of the adjective to a higher position where it finds the comparative morpheme, we would expect that the adjective would move over *remarkably*, as in (15):[11]

(15)   *Clyde is [tall-*er* [remarkably *t*]]

This, as indicated, results in an ungrammatical sentence. Nor is there evidence for a structure like (14) from interpretation. Certainly, it's true that if Clyde is said to be very remarkably tall, he must also be very tall. But this is not evidence for construing *very* as applying to *remarkably tall*, because of the way being tall is related to being remarkably tall. The only way Clyde's height can be more remarkable (in the way relevant to *remarkably* adverbs) is to be greater; the only way for it to be less remarkable is for it to be smaller. Consequently, increasing or decreasing the extent to which Clyde's height is remarkable also increases or decreasing his height correspondingly. The effect of a degree word, then, will be in this respect the same irrespective of which structure is adopted.

There are broader considerations that militate against treating *remarkably* adverbs as degree words. Degree words do not share the principal properties of *remarkably* adverbs noted in the previous sections.

While new *remarkably* adverbs can be coined with ease and essentially on-the-fly, coining degree words is comparatively harder. Though new degree words do of course occasionally arise,[12] they cannot be coined on-the-fly in the course of a conversation, or readily accommodated by one's interlocutor. No doubt related to this is the relative scarcity of degree words—it does not seem at all out of the question that one might be able to compile an exhaustive list. Compiling an exhaustive list of *remarkably* adverbs, on the other hand, would be an enormous undertaking at best, and perhaps nearly as futile as attempting to compile an exhaustive list of nouns might be.

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[11] This sets aside the possibility of a parse in which *remarkably* is itself a head.

[12] Presumably, the degree words *hella* (in some dialects of English) and *wicked* (in New England dialects) are relatively recent coinages:

(i)   Clyde is $\begin{Bmatrix} \text{hella} \\ \text{wicked} \end{Bmatrix}$ tall.

Among the signature characteristics of *remarkably* adverbs noted in the previous sections are their relationship to their adjective counterparts and to their corresponding uses in higher, clausal positions. Degree words manifest neither of these characteristics. In general, degree words do not have adjective counterparts. There is a small handful of degree words that might be said to, but in these cases, unlike with *remarkably* adverbs, the meaning of the degree word is not predictable from its corresponding adjective or vice versa. Among the potential suspects in this regard are *real*, *pretty*, *mighty*, and *wicked*. It is not clear what relates the meaning of these degree words to their homophonous adjectives. And it is highly unlikely that it is any single semantic relation applying systematically. To the extent that one might claim a consistent morphological relationship between these degree words and adjectives, it is different from the one that holds between *remarkably* adverbs and adjectives—these degree words are derived by zero affixation, while *remarkably* adverbs are derived by suffixing *-ly*.

Finally, unlike *remarkably* adverbs, degree words cannot occur in higher, clause-modifying positions at all, so the question of this relationship does not arise.

3   Developing an Interpretation

3.1   *Some Paraphrases*

The essential semantic contribution of *remarkably* adverbs seems to be systematically paraphrasable in terms of the corresponding adjectives. Since this is unlikely to be an accident, given the close relationship between *remarkably* adverbs and adjectives, it seems appropriate to construct the denotations of *remarkably* adverbs in terms of their adjective counterparts, and to take these paraphrases as a starting point in identifying what *remarkably* adverbs mean.

There are several varieties of such paraphrases that get relatively close to what *remarkably* adverbs mean:

(16)   Clyde is remarkably tall.
    a. It is remarkable that Clyde is as tall as he is.
    b. It is remarkable to be as tall as Clyde is.
    c. It is remarkable how tall Clyde is.

(17)   Floyd is surprisingly ugly.
    a. It is surprising that Floyd is as ugly as he is.
    b. It is surprising to be as ugly as Floyd is.
    c. It is surprising how ugly Floyd is.

(18)   Floyd's SUV is unacceptably inefficient.
      a. It is unacceptable that Floyd's SUV is as inefficient as it is.
      b. It is unacceptable to be as inefficient as Floyd's SUV is.
      c. It is unacceptable how inefficient Floyd's SUV is.

(19)   Many voters are horribly conservative.
      a. For many voters x, it is horrible that x is as conservative as x is.
      b. For many voters x, it is horrible to be as conservative as x is.
      c. It's unacceptable how conservative many voters are.

Not all of these paraphrases are equally good. The (a) and (b) paraphrases all suffer from a problem of ambiguity, though it is remedied easily enough. For (16a), for example, there is a reading in which what is remarkable is the fact that Clyde is as tall as Clyde. Similarly, in (17a), what is surprising could be the fact that Floyd is as ugly as Floyd.[13] The *remarkably* adverb sentences do not have this reading. But this problem could be avoided easily enough—one could imagine pursuing paraphrases of the form *Floyd is tall to some degree, and it's remarkable that he's that tall*, or, in linguist quasi-English, *Floyd is d-tall and it's remarkable to be d-tall*. There is, however, a deeper problem.

An inkling of this problem is reflected in (16a) and (16b). If what is remarkable about Clyde's height is that he is very short, both of these paraphrases would be true; but of course, the *remarkably* adverb sentence cannot mean this. This is still only an inkling of the problem, in that it too could be solved relatively straight-forwardly, in this case by adding to the denotation a requirement that, in this instance, Clyde be tall.

The full measure of the problem emerges more clearly in a situation in which we know Clyde to be the victim of a particular creepy numerological accident. We know that he was born at precisely 5:09 in the morning, on the fifth day of the ninth month of 1959. We further know that he currently lives at 59 Fifty-ninth Street. Discussing this strange happenstance, I inform you that Clyde's height is precisely five feet and nine inches. So Clyde is not very tall, but he is not very short either. It would be quite natural for you to say, upon having heard this news, that it is remarkable that Clyde is five feet nine inches tall, or to utter (16a). But it would not be natural at all to say that Clyde is *remarkably tall*—indeed, given typical contemporary expectations about adult male height, it would be false.[14]

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[13] This is essentially the same ambiguity as in Russell (1905)'s *Your yacht is larger than I thought it is.*

[14] It could, of course, be true if the context provides a sufficiently unusual comparison class, as it might if we also know that Clyde is a race horse jockey or president of the International Federation of Unusually Short Taxidermists.

In this situation, the problem cannot simply be simply that Clyde is not tall. If we increment all the numbers that seem to haunt Clyde to the point that he might qualify as just barely tall but not very tall, the result stays the same—it is still remarkable that he is as tall as he is, in light of the numeric coincidences in his life, but he is certainly not *remarkably tall*.

What this demonstrates is that to qualify Clyde as *remarkably tall*, it is not sufficient that he be tall and that there be something remarkable about his height. It must also be the case that what is remarkable about his height is how great it is. Similar facts hold for other *remarkably* adverbs—for (17), for example, what is surprising must be how great Floyd's ugliness is, not simply that he is ugly.

This suggests strongly that there is something fundamentally inadequate about the (a) and (b) paraphrases above, and more generally about paraphrases that involve predicating an adjective of a proposition in a straight-forward way. But all this also strongly suggest that the (c) paraphrases above, which involve embedding *wh*-clauses, are in some important way on the right track. They face none of these difficulties. They don't give rise to the undesirable ambiguity discussed above—they have only the interpretation that *remarkably* adverbs have. Nor do they fail to reflect that *remarkably* adverbs always seem to require that the degree in question be high, and that it must be the highness of the degree that leads to the judgment expressed by the *remarkably* adverb. No further stipulations or additions are required to achieve this, and the paraphrase does not have to be altered in any way.

The *wh*-paraphrases also have the advantage that they, like sentences with *remarkably* adverbs, inherently give rise to a kind of factivity entailment of the form in (20):

(20) a. Clyde is remarkably tall.
          entails: Clyde is tall.
       b. It is remarkable how tall Clyde is.
          entails: Clyde is tall.

(21) a. Floyd is surprisingly ugly.
          entails: Floyd is ugly.
       b. It is surprising how ugly Floyd is.
          entails: Floyd is ugly.

(22) a. Floyd's SUV is unacceptably inefficient.
          entails: Floyd's SUV is inefficient.
       b. It is unacceptable how inefficient Floyd's SUV is.
          entails: Floyd's SUV is inefficient.

In some respects, these entailment seem obvious and almost unavoidable, so it is worth pointing out that it is not a priori necessary that such entailments should have been valid. Measure phrases, for example, do not give rise to this effect:

(23)   Clyde is five feet tall.
        does not entail: Clyde is tall.

Nor do the alternative paraphrases in (16–19) just considered reflect the entailment pattern in (20–22).

In light of the close parallel between these paraphrases and *remarkably* adverbs, then, taking the semantics of these paraphrases as a guide in sorting out the semantics of *remarkably* adverbs seems to be an approach with some empirical support—these really are very close paraphrases, close enough to suggest that that the semantic connection between them and *remarkably* adverbs is genuine.

3.2   *Embedded Exclamatives*

There is, however, a complication in taking the semantics of these *wh*-paraphrases as a guide: it is less than clear what the semantics of these paraphrases themselves is. The *wh*-clause in these paraphrases is not, as it might initially seem, an indirect question. Rather, it is an embedded exclamative of the sort discussed in Grimshaw (1979)—a less-studied construction.

Perhaps the clearest evidence for this involves *very*. As Grimshaw observed, *very* is impossible with *wh*-words in questions, as in (24), but possible in exclamatives, as in (25):

(24)   a. *How very tall is Clyde?
        b. *How very ugly is Floyd?
        c. *How very inefficient is Floyd's SUV?

(25)   a. How very tall Clyde is!
        b. How very ugly Floyd is!
        c. How very inefficient Floyd's SUV is!

This contrast holds under embedding as well. Embedded clauses that are relatively clearly indirect questions do not admit *very*:[15]

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[15] As before, there is a certain interpretation here that seems to involve metalinguistic comparison that should be set aside. On this interpretation, *I wonder how very tall Clyde is* is more or less possible, but it reports that what the speaker is wondering about is how appropriate the phrase *very tall* is as a characterization of Clyde.

(26)　a. *I wonder how very tall Clyde is.
　　　b. *Someone asked how very ugly Floyd is.
　　　c. *Mildred wondered how very inefficient Floyd's SUV is.

But embedded exclamatives do:

(27)　a. It is remarkable how very tall Clyde is.
　　　b. It is surprising how very ugly Floyd is.
　　　c. It is unacceptable how very inefficient Floyd's SUV is.

Although it is not directly relevant to the application of this diagnostic, *remarkably* adverbs seem to have the same distribution in these sentences as *very* does.

　　　Another diagnostic for exclamatives, due to Zanuttini and Portner (2003), is based on the observation that (alternative) questions license structures like those in (28), while exclamatives do not, as (29) shows:

(28)　a. How tall is Clyde—average height or less than five feet?
　　　b. How ugly is Floyd—just slightly or enough to frighten children?

(29)　a. *How tall Clyde is—average height or less than five feet!
　　　b. *How ugly Floyd is—just slightly or enough to frighten children!

Zanuttini and Portner use this to diagnose matrix exclamatives only, but it seems to work (somewhat less cleanly) with embedded exclamatives as well:

(30)　a. I wonder how tall Clyde is—average height or less than five feet.
　　　b. Someone asked how ugly Floyd is—just slightly or enough to frighten children.

(31)　a. *It is remarkable how tall Clyde is—average height or less than five feet.
　　　b. *It is surprising how ugly Floyd is—just slightly or enough to frighten children.

Again, the paraphrases under consideration pattern with embedded exclamatives rather than with the embedded questions in (30).

　　　A third diagnostic is based on the observation, due to Elliott (1974) and noted by Zanuttini and Portner, that exclamatives do not seem to occur comfortably under negation in declaratives:

(32)　a. I don't (particularly) wonder how tall Clyde is.
　　　b. No one asked how ugly Floyd is.

(33) a. *?It isn't remarkable how very tall Clyde is.
      b. *?It isn't surprising how ugly Floyd is.

Zanuttini and Portner observe that curiously, in questions the situation is reversed—exclamatives can occur with negation, as in (34), but not without it, as in (35):

(34) a. Isn't it remarkable how tall Clyde is?
      b. Isn't it surprising how ugly Floyd is?

(35) a. *?Is it surprising how ugly Floyd is?
      b. *?Is it remarkable how very tall Clyde is?

So in this respect too, these paraphrases pattern with embedded exclamatives.

Building on the foundation these paraphrases provide, then, leads to a semantics for *remarkably* adverbs framed in terms of their corresponding adjectives and embedded exclamatives.

3.3   *The Interpretation of Exclamatives*

The first challenge in relating the semantics of *remarkably* adverbs to that of exclamatives is that the semantics of exclamatives is itself not entirely clear, at least from a formal perspective.[16] Still less clear is the semantics of exclamatives under embedding. Zanuttini and Portner (2003), who develop an approach to these issues, will serve here as a guide through this thicket of uncertainty.

Their first move is to observe that exclamatives don't have truth values, and hence should not be analyzed as proposition-denoting. One reflection of this is that it is odd to attempt to affirm or deny an exclamative in discourse:

(36) A: How tall Clyde is!

      B: $\left\{ \begin{array}{l} \text{\#No, that's not true.} \\ \text{\#No, that's a lie!} \\ \text{\#Yes, that's right; good point.} \end{array} \right\}$

To object to the use of an exclamative, it is necessary to do relatively roundabout things—one might, for example, deny being in a position to utter it (e.g., *I wouldn't say that*).

Zanuttini and Portner suggest that instead, exclamatives have denotations of the same type as questions do—sets of propositions (following, for questions,

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[16] Perspectives on the interpretation of exclamatives from outside of formal semantics include McCawley (1973), Elliott (1974), and Michealis and Lambrecht (1996).

Hamblin 1973, Karttunen 1977, Groenendijk and Stokhof 1984, and others). This, of course, reflects quite clearly the deep syntactic parallel between questions and exclamatives. It also sets aside the difference between the two in illocutionary force, which can be reflected in other ways (as they convincingly argue).

Adopting the Karttunen (1977) view that a question denotes the set of its *true* answers, they they treat exclamatives as likewise denoting a set that includes only true propositions. So an exclamative such as (37a) will denote a set of propositions that might, under the appropriate circumstances involving discussion of chili pepper consumption, look like (37b):[17]

(37) a. What surprising things he eats!
      b. {'he eats poblanos', 'he eats serranos', 'he eats jalapeños'}

More generally, then, (37a) will denote the set of true propositions of the form 'he eats x' for some (surprising) value of x:

(38) ⟦ *What surprising things he eats!* ⟧ = {p: p is true and there is a surprising thing x such that p is the proposition that he eats x}

Exclamatives of the sort most relevant here, such as the one in (39), will have similar denotations:

(39) ⟦ *How tall he is!* ⟧ = {p: p is true and there is a degree of height d such that p is the proposition that he is d-tall}

It might be the case in some circumstances, for example, that *How tall he is!* will denote a set among whose members are 'he is four feet tall' and 'he is five feet tall' and 'he is six feet tall'.

Zanuttini and Portner identify two principal ingredients in the semantics of exclamatives. One of them is *factivity*—exclamatives systematically presuppose the truth of a corresponding declarative, as already partly exemplified in (20–22). While *remarkably* adverbs have a similar property, as these examples show, this will not be a central focus at the moment.

The other ingredient, which will figure prominently in the analysis of *remarkably* adverbs proposed here, is *widening* of the domain of quantification of the displaced *wh*-expression. To illustrate how this works, consider a context in which we are discussing what Herman eats. If I say *Herman eats everything*, the domain of quantification of the universal is of course constrained by a contextual domain restriction, so you probably wouldn't conclude from my utterance that

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[17] This example is a variation on an example of theirs in Paduan. Poblanos, serranos, and jalapeños are all chili peppers.

Herman eats light bulbs, his relatives, or presidential elections. It is very probable that what we might expect Herman to eat would be even more constrained than this—assuming the appropriate cultural background, we might also fail to conclude from my statement that Herman eats serrano chilies. Zanuttini and Portner propose that exclamatives affect essentially this sort of domain restriction, widening it to include things we otherwise would not have considered. So if what I had uttered instead was the exclamative *What surprising things he eats!*, its effect would be to cause you to entertain some possibility you previously hadn't—say, that Herman eats serranos. The denotation of the exclamative, then, will because of this widening include more propositional alternatives than it otherwise would have.[18] As Zanuttini and Portner observe, this bears a close family resemblance to Kadmon and Landman (1993)'s analysis of what *any* does.[19]

This idea elegantly gathers together several otherwise slippery and elusive intuitions about what exclamatives mean. Among these are the intuition that exclamatives somehow involve an 'extreme' value for something, and that exclamatives convey that something is unexpected in a particular way.

3.4   *Interpreting Exclamatives Embedded*

The next question relevant to understanding exclamative paraphrases of *remarkably* adverb sentences is what happens when an exclamative is embedded. This presents one slight additional complication, but it also eliminates another one.

The additional complication is that some assumptions have to be made about the semantics of the embedding predicate—hardly a minor point here, since this embedding predicate is what corresponds to *remarkably* adverbs. Here too, Zanuttini and Portner lead the way. They suggest that *amazing*, which embeds both exclamatives and finite indicatives, can be understood as having two forms, one for each type of complement. The garden-variety form applies to propositions and hence embeds finite indicatives. Its semantics is relatively straight-forward—it predicates of a proposition that it is amazing:[20]

(40) $[\![\, amazing_{garden\text{-}variety} \,]\!] = \lambda p_{\langle s,t \rangle} \,.\, \text{amazing}(p)$

The other form of *amazing* applies to sets of propositions and hence embeds excla-

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[18] This discussion does not include one important aspect of widening in their sense, which is that the widening must be in accord with some contextually-provided scale. It is possible to set this aside here because for adjectives, this scale is provided lexically, as subsequent sections illustrate.

[19] They are careful to point out, however, that their 'use of the concept [of domain widening] is quite different'.

[20] This isn't precisely their formalism, but the content is (intended to be) the same. I haven't reflected here in any independent way that *amazing* is factive.

matives. It is interpreted as requiring that some proposition in this set be amazing:

(41) $[\![\,amazing_{exclamative\text{-}embedding}\,]\!] = \lambda E_{\langle\langle s,t\rangle,t\rangle} \,.\, \exists p[E(p) \wedge amazing(p)]$

For an exclamative denotation to be amazing, then, it must include a proposition which is amazing. So, supposing that Clyde is 6 feet 4 inches tall, one might utter (42a), and the exclamative will have a denotation something like the one indicated schematically in (42b):[21]

(42)   a. It is amazing how tall Clyde is.
        b. It is amazing {'Clyde is 6 feet 1 inch tall', ..., 'Clyde is 6 feet 2 inches
            tall', ..., 'Clyde is 6 feet 3 inches tall', ..., 'Clyde is 6 feet 4 inches tall'}
        c. $\exists p[p \in$ {'Clyde is 6 feet 1 inch tall', ..., 'Clyde is 6 feet 2 inches tall', ...,
            'Clyde is 6 feet 3 inches tall', ..., 'Clyde is 6 feet 4 inches tall'} $\wedge$
            amazing(p)]

In light of (41), (42a) can be interpreted as requiring that one of the propositions in the set in (42b) be amazing, as (42c) reflects. If it's the case that it's amazing to be 6 foot 4, then, this will be true. More generally, we might assume that embedded exclamatives (at least ones embedded under the relevant sort of predicate) are interpreted in a way that parallels (42).

While in some respect complicating things slightly, this simplifies the situation in another respect. In light of the denotation arrived at for these sorts of structures, for current purposes, it will be possible to do away with making reference in these denotations to sets of propositions, replacing them with sets of degrees.[22] The reason is that asserting (42) actually amounts to claiming that it's amazing that there's a degree (in a particular set of degrees with the relevant properties) to which Clyde is tall:

(43)   amazing($^{\wedge}\exists d[d \in$ {6 feet 1 inch, ..., 6 feet 2 inches, ..., 6 feet 3 inches, ..., 6
          feet 4 inches} $\wedge$ Clyde is d-tall])

All embedded-exclamative paraphrases of *remarkably* adverbs involve adjectives, so in all of them it will be possible to make this simplifying move, quantifying over degrees rather than over propositions.

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[21] For reasons of exposition, I gloss over here what is actually an important point, which is that for Zanuttini and Portner an exclamative denotation includes only those propositions that are outside the domain of quantification as it was before widening. This is not crucial to the point being made in this section.

[22] It will, of course, likely still be required in putting together the semantics of embedded exclamatives compositionally; the concern here, though, is only to arrive at an interpretation of *remarkably* adverb paraphrases.

To capture the meaning of embedded exclamatives, and by extension of sentences containing *remarkably* adverbs, it will also be necessary to say something about what the set of degrees being quantified over is—specifically, it will be necessary to capture the effect of domain widening.

3.5 *Brief Interlude: Some Assumptions About Adjectives*

Before proceeding further, though, it may be helpful to briefly lay out some background assumptions about the interpretation of adjectives, mostly drawn from Kennedy (1997).

The first of these is that a degree is an interval on a scale abstractly representing measurement (Kennedy 1997, Schwarzschild and Wilkinson 2002). A scale in this sense is a dense, linearly ordered set of points. Different adjectives are in general associated with different scales, though some pairs of adjectives— antonymous pairs like *tall* and *short*—may share the same scale.

Second, I will assume that a gradable adjective denotes a relation between an individual and a degree—a relatively standard assumption (Seuren 1973, Cresswell 1976, von Stechow 1984, Bierwisch 1989, Klein 1991, Rullman 1995, Kennedy and McNally 2004).[23] In a sentence like (44), then, *tall* relates Clyde to some degree of height, here one measuring six feet:

(44) a. $[\![\,tall\,]\!] = \lambda x \lambda d \,.\, \text{tall}(x)(d)$
  b. $[\![\,Clyde\ is\ six\ feet\ tall\,]\!] = \exists d[\text{tall}(\text{Clyde})(d) \wedge \text{the measure in feet of } d$
    is 6]

If no overt measure phrase is present, the adjective will be interpreted with respect to a contextually-supplied standard degree of tallness. In (45), for example, *tall* relates Clyde and the standard for tallness s_{tall} provided by the context of utterance:

(45) $[\![\,Clyde\ is\ tall\,]\!] = \exists d[\text{tall}(\text{Clyde})(d) \wedge d \geq s_{tall}]$

What (45) requires is that Clyde be tall to some degree and that it meet or exceed the standard s_{tall}.

3.6 *The Interpretation of* Remarkably *Adverb Sentences*

Returning to the main thread of the discussion, it will now be possible to propose an interpretation for exclamative paraphrases of *remarkably* adverbs in the spirit of Zanuttini and Portner, and thereby one for the corresponding *remarkably* adverb

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[23] This divergence from Kennedy (1997) is not in any way crucial to the analysis.

sentences as well.

Given what has already been said, a sentence such as the now-familiar (46a), along with its exclamative paraphrase (46b), might (in a particular circumstance) receive an interpretation such as (46c):

(46) a. Clyde is remarkably tall.
      b. It is remarkable how tall Clyde is.
      c. remarkable($^\wedge \exists$d[d$\in${6 feet 1 inch, ..., 6 feet 2 inches, ..., 6 feet 3 inches, ..., 6 feet 4 inches} $\wedge$ Clyde is d-tall])

So, as before supposing that Clyde is 6 foot 4, (46a) might assert that it is remarkable that Clyde is tall to a degree in the set indicated schematically in (46c).

To spell things out a bit more precisely—and in particular, to make explicit the domain widening that is a signature of both *remarkably* adverbs and exclamatives—a means of representing domain restrictions will be needed. One way of doing this, though not the path taken by Zanuttini and Portner, is to make use of resource domain variables (von Fintel 1994, Westerståhl 1985). Thus just as a resource domain variable can be used to reflect contextual domain restrictions on determiner and adverbial quantification, it can also be used to reflect contextual domain restrictions on quantification inside the extended projection of AP. Spelling this out, the denotation of *Clyde is tall* in (45) can be elaborated with the addition of a resource domain variable C, which will restrict an existential quantifier over degrees as in (47):

(47) $[\![$ *Clyde is tall$_C$* $]\!] = \exists$d[d$\in$C $\wedge$ tall(Clyde)(d) $\wedge$ d$\geq$s$_{tall}$]

The resource domain variable C has as its value a contextually-salient set of degrees; (47) requires that the degree quantified over be in this set.

It is actually a fairly significant step, and one that will be crucial here, to suppose that quantification over degrees is contextually restricted in the way that quantification over individuals or events (or situations) is. While it is not usual to think of quantification over degrees in this way,[24] it seems quite natural. Having domain restrictions seems to be a general property of quantification in natural language, so it ought to be surprising to find that degree quantification *didn't* work this way. Indeed, making this assumption is actually simpler than the alternative, since it would otherwise be necessary to stipulate that only quantifiers over individuals and events are subject to contextual domain restrictions.

It is not especially clear, though, that such contextual domain restrictions should be detectable in a relatively simple example like (47). Still, it does seem

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[24] Though something like this does seem to be what Zanuttini and Portner have in mind.

sensible to suppose that in uttering a sentence like (47), we have some idea of a possible range of heights to which we restrict our consideration. Thus just as there is something surprising about (48a), which involves quantification over individuals, so too with quantification over degrees, there is something surprising about (48b):

(48) a. Someone showed up during office hours.

It was $\left\{\begin{array}{l}\text{Queen Victoria} \\ \text{Gadzork the Martian}\end{array}\right\}$.

b. Clyde is tall. He's $\left\{\begin{array}{l}\text{about 6 or 7 kilometers} \\ \text{the same height as his apartment building}\end{array}\right\}$.

One way of understanding the sense of surprise these sentences give rise to is to suppose that the addressee has initially taken the speaker to have intended to quantify existentially over a more narrowly restricted domain than the one the speaker ultimately turns out to have intended.[25]

An independent worry about introducing contextual domain restrictions in the way suggested in (47) is that this results in a kind of double context-sensitivity that might seem suspiciously redundant. As it stands, (47) is context sensitive both via the contextually supplied resource domain variable C and via the contextually-supplied standard for tallness s_{tall}. There might be ways of eliminating this difficulty (Morzycki in progress), though it will not be remedied here. It is sufficient to note that to the extent that this double-context sensitivity is a concern—and it is an aesthetic concern, or in any case one of parsimony—it would cast doubt on this means of representing contextually-supplied standards just as much as it would on this approach toward introducing contextual domain restrictions into the adjectival projection.

With this in place, the widening effect of *remarkably* adverbs can now be represented fairly straightforwardly. As a first step, without yet reflecting the effect of widening in the denotation, we can take (49a) to have the denotation in (49b):

(49) a. Clyde is remarkably tall.
      b. $⟦$ *Clyde is remarkably tall$_C$* $⟧$ =   (not final)
         remarkable($^\wedge \exists d[d \in C \wedge tall(Clyde)(d) \wedge d \geq s_{tall}]$)

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[25] This sort of explanation, of course, does not rule out a pragmatic explanation in which the surprise is attributed to the bizarreness of what has been asserted; indeed, this is a way of formulating such an explanation a bit more precisely.

There is also a certain common flavor between (48b) and the effects of varying the comparison class in the interpretation of an adjective (e.g. *Clyde is tall; he's about 4 foot two, which is tall for a five-year-old.*). This apparent similarity between comparison classes and domain restrictions might not be accidental, and perhaps suggests that domain restrictions might be put to other analytical uses in the semantics of adjectives (Morzycki in progress).

This merely predicates remarkable-ness of the proposition expressed by *Clyde is tall*, yielding a meaning that might be paraphrased 'it is remarkable that Clyde is tall' (which is an inadequate paraphrase for reasons discussed in section 3.1). To introduce the effect of domain widening, we might merely modify (49b) by existentially quantifying over a domain larger than the contextually-supplied domain of quantification provided by the resource domain variable C:

(50) $[\![$ *Clyde is remarkably tall$_C$* $]\!]$ =   (not final)
        remarkable($^\wedge \exists d \exists C'$ [$C' \supset C \wedge d \in C \wedge$ tall(Clyde)(d) $\wedge$ d$\geq s_{tall}$])

This amounts to loosening the requirement that a degree of Clyde's tallness be among the contextually salient degrees, permitting it instead to be either among these degrees or in some larger domain C' that includes these degrees.

Still, this is not yet quite adequate, because *remarkably* adverbs, like exclamatives, contribute domain widening in a particular sense that (50) does not reflect. Unlike the kind of widening that Kadmon and Landman (1993) argue *any* involves, exclamatives and *remarkably* adverbs actually impose the further requirement that the degree quantified over *not* be in the unwidened portion of the domain. For Clyde to be remarkably tall, it is not sufficient that he be tall to a degree that's either among the contextually salient ones or in some proper superset of these.[26] Rather, Clyde actually has to be tall to some degree that's not among the degrees already contextually salient—he must be tall to a degree that has been added to the domain by widening, as (51) reflects:

(51) $[\![$ *Clyde is remarkably tall$_C$* $]\!]$ =
        remarkable($^\wedge \exists d \exists C'$ [$C' \supset C \wedge d \in C'-C \wedge$ tall(Clyde)(d) $\wedge$ d$\geq s_{tall}$])

This requires that there be a degree to which Clyde is tall which exceeds the standard and that it is in the portion of the widened domain C' that excludes the original domain C.[27]

This denotation seems to be an adequate representation of the meaning of *Clyde is remarkably tall*. It reflects that this sentence involves a claim that

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[26] In fact, unless something more is said about what the value of a resource domain variable may be, this wouldn't seem to impose any additional requirement at all, since *any* degree is either in the contextually supplied domain or in a proper superset of it.

[27] The denotation in (51) places no bounds on how big the widened domain may be, so it amounts to requiring only that the degree quantified over not be in the unwidened domain. I'll represent things in these terms, though, because it corresponds better to the intuition about what's happening here; because it makes the connection to Zanuttini and Portner's account of exclamatives (perhaps) a bit clearer; and because constraints on what a possible domain restriction is may constrain what (52) can mean, too.
   It seems reasonable to wonder whether the term 'widening' is fully descriptive of the operation involved here. I will stick to it here because it's the term Zanuttini and Portner use.

something is remarkable, and that what is remarkable isn't merely that Clyde is tall or even that there is some particular degree such that it's remarkable that he's tall to that degree. Rather, what is claimed to be remarkable is that Clyde's height is so great that it exceeds all the heights one would otherwise have entertained. In this way, this denotation reflects the same sort of domain-widening that an embedded exclamative would contribute, thereby explaining the semantic correlation with the embedded exclamative paraphrase. The factivity entailment that is also characteristic of both *remarkably* adverbs and exclamatives is predicted here, too, because this denotation requires that there be a degree to which Clyde is tall that exceeds the standard for tallness. Maintaining this requirement of exceeding the standard is crucial to capturing the factivity entailment—the requirement of widening the domain on its own would not suffice, since it would not rule out the possibility the Clyde is tall to a degree *smaller* than any in the domain, and that what is remarkable about his height is how small it is.[28]

Other *remarkably* adverb sentences can, of course, be given interpretations analogous to this one.

3.7   *Summary*

This section developed a semantics for sentences with *remarkably* adverbs by pursuing a parallel between them and paraphrases involving embedded exclamatives. The analysis arrived at makes crucial use of the notion of widening a domain of quantification, applying this notion to quantification over degrees.

4   Assembling the Pieces

The previous section arrived at a model of the interpretation of *remarkably* adverb sentences, but nothing has so far been said about how this interpretation is assembled compositionality. It will emerge in this section that the familiar means of semantically combing an adverb and an expression it modifies are not adequate for the task that needs to be performed here—and that a further examination of the syntax suggests another path to take.

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[28] This presupposes that the standard will always be in the domain of quantification—a assumption natural at least, and perhaps unavoidable. (Rejecting this assumption, though, would be of no help in deriving the factivity entailment.)

Zanuttini and Portner speculate that there might be a way to rule out widening the domain downward on the basis of some fact about the ontology of degrees. This seems like it would be a very desirable result.

4.1 *The Trouble with an Intersective Interpretation*

The most basic means of interpreting a modifier is intersectively, by a rule like Heim and Kratzer (1997)'s Predicate Modification. There is no straightforward way of doing this for *remarkably* adverbs. The principal difficulty is that for two expressions to be interpreted intersectively they must be of the same semantic type. In order to implement an intersective interpretation for *remarkably* adverbs and the adjectival projections they modify, it will thus be necessary to find a single type for the denotations of both the *remarkably* adverb and its sister. But what could this type be?

One possibility that seems initially appealing is that both the *remarkably* adverb and its sister denote properties of degrees. This though, problematic, and at a minimum requires complicating the ontology of degrees significantly.

To begin with, it would be necessary to find a way to construe the *remarkably* adverb itself as a property of degrees. Given denotations like the one arrived at above, it is at best highly unclear how this might be done. Of course, one might conclude from this that there is something severely wrong with these denotation. It could in principle be that *remarkably* adverbs are interpreted simply by predicating them directly of degrees. This has the appeal of simplicity, but, among other difficulties, such an approach would have to be spelled out quite a bit before it could be made sense of. Certainly, if a degree is simply an interval on a scale as assumed here (following Kennedy 1997 and Schwarzschild and Wilkinson 2002), predicating of this interval that it is remarkable or surprisingly or disappointing or strange would at a minimum fail to make obvious predictions, and at worst might be irredeemably incoherent.

If we view degrees purely as very abstract representations of measurement, asserting that a particular degree is remarkable would be like asserting that (the integer) 16 is remarkable. If we view degrees as perhaps not quite so thoroughly abstract as that, things don't improve. Assuming, as indicated in section 3.5, that a degree is an interval on a particular scale, and that scales are distinguished from each other, a degree might perhaps be better conceptualized as something like '16 feet' or '16 pounds' or '16 dollars' rather than simply '16'. But asserting that 16 feet is remarkable or 16 pounds is surprising is odd and probably not quite coherent as well. We can only make sense of such things by taking them to be in some respect more than meets the eye. Thus to make sense of the claim that 16 feet is surprising, we might think of it as really the claim that 16 feet is a surprising height, say—but of course this is would not amount to predicating surprising-ness of 16 feet. Yet clearly, *remarkably* adverbs like *remarkably* can be used with adjectives whose denotations involve the scales relevant here, like height or length or weight or cost (e.g., *remarkably tall, remarkably heavy, remarkably expensive*). So if *remarkably* adverbs simply denoted properties of degrees, it would really be quite

unclear what the extension of, say, *remarkably* is—and if *remarkably* is anything like *remarkable*, it doesn't seem it could include degrees.[29]

Another, perhaps less serious but non-trivial difficulty is what one might do with the type that would result when a *remarkably* adverb and its sister are interpreted—if this type is itself a property of degrees, as would result from an intersective interpretation, an account would have to be provided of how this can ultimately be predicated of individuals. Certainly, there are ways in which this can be done, both by altering syntactic assumptions or semantic ones. One especially interesting semantic approach toward this problem may be available if degrees are formalized, as Faller (2000) proposes, as vectors in a Vector Space Semantics (Zwarts 1997, Zwarts and Winter 2000, Winter 2001). In this sort of framework, there are independently necessary type shifts that map properties of vectors (qua degrees) to properties of individuals. At a minimum, though, whether by adopting a Vector Space Semantics or by other means, some further explanation here is required—and in either case despite the additional complications would be unlikely to help solve the first problem discussed immediately above.

Any approach in which a *remarkably* adverb is predicated directly of a degree also faces the problem of explaining what the relationship is between predicating a *remarkably* adverb of a degree and predicating its adverbial or adjectival cognates of individuals and propositions (and perhaps eventualities). To illustrate, we might imagine that the denotation of *remarkably* in its *remarkably* adverb incarnation is simply (52)—setting aside all the other problems discussed above with such an approach—and that its cognates have denotations as in (53):

(52)　　$\llbracket$ *remarkably$_{ad\text{-}adjectival\ use}$* $\rrbracket$ = λd . remarkable(d)　　　　(to be rejected)

(53)　a.　$\llbracket$ *remarkably$_{clause\text{-}modifying\ use}$* $\rrbracket$ = λp . remarkable(p)　　(to be rejected)

　　　b.　$\llbracket$ *remarkable$_{predicated\ of\ a\ proposition}$* $\rrbracket$ =　　　　　(to be rejected)
　　　　　　λp . remarkable(p)

　　　c.　$\llbracket$ *remarkable$_{predicated\ of\ an\ individual}$* $\rrbracket$ =　　　　　(to be rejected)
　　　　　　λx . remarkable(x)

While certainly in one sense simple, this sort of approach on its own does nothing to explain the relationship between the uses of these cognate expressions, such as the relationship between *remarkably* as an ad-adjectival modifier and *remarkable* in embedded-exclamative paraphrases. Much of the interest of the problem here is concealed inside the metalanguage-predicate 'remarkable'. On the other hand, the puzzle is not concealed frames things in terms of a single metalanguage predicate

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[29] Importantly, *remarkably* adverbs are in this respect different from ad-adjectival adverbs of a different class that includes *enormously*, *minimally*, and *slightly*, all of which can much more easily be thought of as properties of degrees.

whose meaning is relatively clear—say, by holding the denotation in (53c) constant, and defining the others in terms of it. But it is exactly this that reveals the difficulty in defining (53) as a property of degrees.

4.2   *The Trouble with a Predicate Modifier Interpretation*

When an intersective denotation for a modifier is not possible, one usually simply adopts a higher, predicate-modifier type denotation—construing it as a function that applies directly to the modified expression. But for *remarkably* adverbs, this road too has some dangerous pitfalls.

If *remarkably* adverbs were predicate modifiers, they would presumably denote functions from AP denotations to AP denotations[30]—given the assumptions here, expressions of type $\langle\langle e,dt\rangle,\langle e,dt\rangle\rangle$. This would certainly help with the problems noted in the previous section, since the *remarkably* adverb could now 'have access' to the adjectival denotation in a way that would make it possible to build up a denotation like the one arrived at in section 3.

This, though, is inconsistent with the syntactic behavior of these expressions. As we have already seen (in (11–13)), *remarkably* adverbs project further structure:

(54)   a. Clyde is [[quite remarkably] tall].
       b. Floyd is [[rather surprisingly] ugly].
       c. Many voters are [[pretty horribly] conservative].

In light of this, it is not the *remarkably* adverb itself but rather the extended AdvP in which it occurs which must have the higher-type denotation. But to achieve this, barring some kind of complicated, previously unattested type shift, it would be necessary to assume that other elements of the adverbial extended projection—including comparative morphology, *very*, and all other Degs—are systematically ambiguous between their regular denotations and ones that yield this very high AP-modifying type. This would be an exceptionally implausible and costly assumption at best.

4.3   *Building Up More Syntax: Analogy to Measure Phrases*

If, as the previous section argued, *remarkably* adverbs can't be interpret intersectively or as predicate modifiers, how *should* they be interpreted? A closer examination of the syntax suggests an answer.

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[30] More accurately, functions from the denotation of some constituent of the extended adjectival projection to denotations of the same type—it is not crucial that these be AP denotations.

One especially clear aspect of the syntax of these expressions is that they resemble nominal measure phrases in at least two ways. First, they occur in the same linear position—both of them can occur only at the left periphery of AP, never at the right:

(55)   Floyd is $\left\{ \begin{array}{l} \text{six feet} \\ \text{remarkably} \end{array} \right\}$ tall $\left\{ \begin{array}{l} \text{*six feet} \\ \text{*remarkably} \end{array} \right\}$.

And both kinds of expressions are in complementary distribution with overt degree words in the AP in which they occur:

(56)   Floyd is $\left\{ \begin{array}{l} \text{*six feet} \\ \text{*remarkably} \end{array} \right\}$ very tall.

It seems reasonable, then, to pursue a parallel syntactic analysis.

APs with absolute adjectives and measure phrases have a structure like the one reflected in (57), in which the measure phrase occupies the specifier position of a Deg(ree) head (Abney 1987, Corver 1990, Grimshaw 1991, Kennedy 1997):
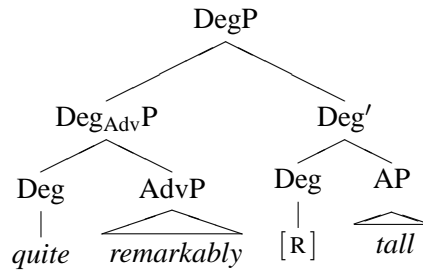
(57)
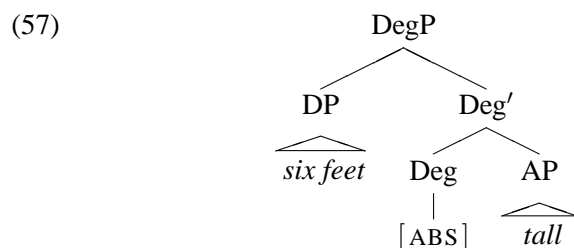
Under other circumstances, the Deg head can be spelled out overtly as a comparative morpheme (or other degree morpheme) or as a degree word. With absolute adjectives, it is not spelled out overtly. Rather, I'll assume that in these cases the Deg head is instead a null degree morpheme $[\text{ABS}]$, following Kennedy (1997).

In light of the similarities, it is natural to assign *remarkably* adverbs, a similar structure, in which their phrasal projections likewise occupy the specifier position of DegP:[31]

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[31] I use $\text{Deg}_{\text{Adv}}\text{P}$ here to distinguish the degree projection of the adjective and that of the adverb.

(58)

```
                        DegP
                    ╱         ╲
              Deg_Adv P        Deg′
              ╱      ╲        ╱    ╲
          Deg      AdvP    Deg     AP
           │        ╱╲      │      ╱╲
         quite  remarkably [R]    tall
```

Proposals of this general form for degree adverbs generally—by which is typically meant any true adverbs in AP—have been made before. Abney (1987) suggests a structure similar to (58), with adverbs in a specifier position, and the structures Jackendoff (1977) has in mind would have something like (58) as one more contemporary analogue.

     Kennedy's $[ABS]$ has in (58) been replaced with a similar feature $[R]$. This is intended to be in many respects similar to $[ABS]$. Although a stronger reason to distinguish these will emerge shortly, there are at least two other, purely syntactic reasons this distinction may be useful. One of these is that $[ABS]$ licenses a DP in its specifier, so it is Case-licensing. *Remarkably* adverbs, on the other hand, have no need to check Case. Another consideration here is a small difference in distribution. Measure phrases, unlike *remarkably* adverbs, are possible in comparatives:

(59)   Clyde is $\left\{ \begin{array}{l} \text{two feet} \\ \text{*remarkably} \\ \text{*surprisingly} \end{array} \right\}$ taller than Floyd.

*It will be necessary, then, to distinguish the ability to license measure phrases and *remarkably* adverbs in order to reflect that certain Degs may license one but not the other. In light of this independent necessity, there would not be any advantage to uniting the ability to license measure phrases and *remarkably* adverbs in one Deg, $[ABS]$.

     This sort of structure has a number of syntactic advantages. It can account for the complementary distribution of measure phrases and *remarkably* adverbs, since these both occupy the same structural position. It can account for why *remarkably* adverbs are obligatorily left of the adjective. And it can account for why they are in complementary distribution with overt Degs, since they require a particular (null) Deg to license them.[32]

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[32] This structure also predicts that it should not be possible to stack *remarkably* adverbs, but that it should be possible to introduce them recursively. That is, while exactly one *remarkably* adverb phrase can occur for each AP, a *remarkably* adverb phrase can itself contain a *remarkably* adverb (e.g. *[[surprisingly [terrifyingly]] ugly]*).

With these syntactic structures in place, it is now possible to look on the semantic compositionality puzzle with a fresh eye.

For measure-phrase structures like (57), Kennedy suggests that the semantics is assembled as in (60):

(60)   ⟦ *Clyde is six feet* [ABS] *tall* ⟧ = ⟦ [ABS] ⟧(⟦ *tall* ⟧)(⟦ *six feet* ⟧)(⟦ *Clyde* ⟧)

The Deg [ABS] applies first to the AP denotation and then to the measure phrase. It yields a property of individuals as the denotation of the DegP. Here, the Deg does the semantic work of relating the AP and the measure phrase.

Given the parallels between the measure phrase structure in (57) and the *remarkably* adverb structure in (58), it is natural to suppose that semantic composition works similarly in (58). The [R] feature can be taken be interpretable, and paralleling [ABS], to be what relates the AP and the *remarkably* adverb semantically:

(61)   ⟦ *Clyde is remarkably* [R] *tall* ⟧ = ⟦ [R] ⟧(⟦ *tall* ⟧)(⟦ *remarkably* ⟧)(⟦ *Clyde* ⟧)

This means of putting the pieces together, via the mediation of [R], will be the key to solving the compositionality problem and arriving at the desired interpretation.

It will now be possible to suppose that the denotation of *remarkably* is actually exactly identical to that of the adjective *remarkable*. To illustrate this, though, it will be useful to make two simplifying assumptions purely for exposition. First, I will omit the degree argument in the denotation of both *remarkably* adverb and their corresponding adjectives. Second, I will for the moment suppose that these corresponding adjectives denote properties of propositions rather than, say, ordinary individuals (more on this point will follow). Adopting these, both *remarkably* and *remarkable* can be taken to have the denotation in (62):

(62)   ⟦ *remarkable* ⟧ = ⟦ *remarkably* ⟧ = λp . remarkable(p)

This is, of course, a very simple denotation, and reflects only the barest, most minimal lexical core of the meaning of these expressions. It is a long way from the making the semantic contribution that was attributed to *remarkably* adverbs in section 3.

But the challenge of getting from one to the other can now be met straightforwardly—the additional semantic work that needs to be done can be attributed not to the adverb itself, but rather to the [R] feature in Deg that licenses it. Just as the adverb itself can now have as its denotation only the irreducible

essence of its lexical semantics, so too the ⌈R⌉ can now have as its denotation only those aspects of meaning that characterize class of *remarkably* adverbs generally, independent of the particular choice of adverb:[33]

(63) $[\![\,⌈R⌉\,]\!] = \lambda A_{\langle e,\langle d,t\rangle\rangle}\ \lambda R_{\langle st,t\rangle}\ \lambda x\,.\,R(^{\wedge}\exists d\exists C'\ [C'{\supset}C \wedge d{\in}C'{-}C \wedge A(x)(d) \wedge d{\geq}s_A])$

This denotation reflects exactly the semantic properties identified in 3 as characteristic of *remarkably* adverbs—among the more prominent ones, domain widening. It also serves as a kind of semantic glue, helping hold together type-theoretically the adjective and adverb denotations.

These pieces fit together in a way that yields the desired result:

(64) $[\![\,$ *Clyde is remarkably* ⌈R⌉ *tall* $\,]\!] =$
         $[\![\,⌈R⌉\,]\!]([\![\,$*tall*$\,]\!])([\![\,$*remarkably*$\,]\!])([\![\,$*Clyde*$\,]\!]) =$
         $remarkable(^{\wedge}\exists d\exists C'\ [C'{\supset}C \wedge d{\in}C'{-}C \wedge tall(Clyde)(d) \wedge d{\geq}s_{tall}])$

This is exactly the denotation ultimately arrived at in section 3 in (51).

4.5   *Problems Averted*

This division of labor avoids the problems raised by the alternative approaches to introducing *remarkably* adverbs into semantic composition.

The difficulties considered raised by supposing that *remarkably* adverbs are simply interpreted intersectively do not arise here because this approach does not impose the requirement that the *remarkably* adverb and its sister be of the same semantic type. Consequently, we are not forced into any uncomfortable further assumptions to sustain these types. In particular, there is no analytical pressure on this view to treat *remarkably* adverbs as properties of degrees. Rather, the denotation of a *remarkably* adverb is ultimately predicated of a proposition, as seems most natural.

The difficulties raised by supposing that *remarkably* adverbs phrases have predicate modifier denotations and apply directly to their sister are avoided as well. On the current account, the type of the *remarkably* adverb and its projections remains very simple, and more important, the same as the corresponding adverb.[34]

_____

[33] For simplicity, I omit here the syntactic representation in the object language of the (index corresponding to the) contextual domain resource variable C. It might be worth noting, though, that since the quantificational force will now come from not the AP denotation but from Deg, it will now be Deg, not the adjective, that must be subscripted with C.

[34] And, as will be suggested in the following section, as other uses of the same adverb.

Consequently, it is no surprise—and indeed, expected—that *remarkably* adverbs should support their own degree words and project the full adverbial extended projection. It will not be necessary to assume either massive systematic ambiguity of Degs or any novel otherwise unmotivated type-shifts, because the types of all elements of the adverbial projection will be exactly the same as they would otherwise be—and the same as in the adjectival projection.

4.6 *Summary*

Neither of the usual ways of interpreting a modifier provides a satisfactory explanation of how *remarkably* adverbs make their semantic contribution. The syntax of these expressions seems to place them in the specifier position of a Deg. By supposing that they are arguments of this Deg, the compositionality problems can be avoided. As an additional benefit, the denotation of *remarkably* adverbs can be dramatically simplified and the semantic characteristics that distinguish the class can instead be associated directly with the Deg that licenses them, and in that sense with the position they occupy.

5 Relation to Clausal Counterparts

5.1 *A Simple Theory*

What has now been introduced is a kind of decomposition—the apparent meaning of *remarkably* adverbs has been split into two parts, one associated with the *remarkably* adverb itself and one associated with its position. Among the chief advantages of having done things this way is that it quite straightforwardly offers a theory of how (ad-adjectival) *remarkably* adverbs relate to their clause-modifying counterparts and to their adjective counterparts.

In what has already been said, a (possibly maximally) simple theory of the relation to adjectives: the denotation of a *remarkably* adverb and its corresponding adjective are identical.

It turns out that the same can be said of the relation to clause-modifying uses. Given exactly the same denotation for *remarkably* proposed in (62) and repeated in (66a), the right interpretation for its clause-modifying use in (65) will follow:

(65)   Remarkably, Clyde is tall.

(66)   a. $[\![$ *remarkably* $]\!] = \lambda p \, . \, \text{remarkable}(p)$
         b. $[\![$ *Clyde is tall$_C$* $]\!] = \exists d[d \in C \land \text{tall}(\text{Clyde})(d) \land d \geq s_{tall}]$

Assuming as before that the denotation of *Clyde is tall* is as in (66b), which repeats (47),[35] *remarkably* can apply directly to (66b) to yield (67):

(67) $[\![$ *Remarkably, Clyde is tall$_C$* $]\!]$ = remarkable($^\wedge\exists$d[d$\in$C $\wedge$ tall(Clyde)(d) $\wedge$ d$\geq$s$_{tall}$])

The denotation in (67) requires only that it be remarkable that Clyde is tall. This seems to reflect what the clause-modifying use of *remarkably* means.

5.2 *A Slightly Less Simple Theory*

As noted previously, I have been systematically indulging in an expository shortcut with respect to the denotation of *remarkably* and of its adjectival counterpart, in two respects. The first is that their degree argument has been systematically suppressed throughout. This I believe to be genuinely a a kind of purely notational abbreviation.[36] The second simplification is they have been taken here to apply directly to propositions. This may conceal something substantive.

One reason it is probably undesirable to take *remarkably* adverbs and their adjectival counterparts to actually apply to propositions rather than to individuals is that this would make them a different type from run-of-the-mill adjectives. This is not a purely aesthetic concern. If it were possible for adjectives and adverbs to vary type-theoretically in this way, a version of one of the compositionality problems encountered in section 4 would arise. In order to account for why *remark-*

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[35] The contextual domain restriction is made explicit in (66b), though it will not be relevant here; it is included for consistency only.

[36] Thus, undoing only this simplification the denotation of *remarkably* and *remarkable* would be as in (ia), and the denotation of the full extended projection as in (ib):

(i) a. $[\![$ *remarkable* $]\!]$ = $[\![$ *remarkably* $]\!]$ = λp λd . remarkable(p)(d)
   b. $[\![$ *[$_{DegP}$ remarkable]* $]\!]$ = $[\![$ *[$_{Deg_{Adv}P}$ remarkably]* $]\!]$ =
      λp $\exists$d[d$\in$C $\wedge$ remarkable(p)(d) $\wedge$ d$\geq$s$_{remarkable}$]

In (ib), both of these expressions are taken to be true of a proposition iff if it is remarkable to a degree that exceeds the standard for remarkability (and is in the contextually-supplied domain). The means by which (ib) is built up from (ia) is the same means by which the denotation of *Clyde is tall* is built up—following Kennedy (1997), by the application of the intervening Deg head, which (among other things) introduces the standard. Given that $[\![$ R $]\!]$ has the denotation in (63), this will yield sentence denotations like (ii):

(ii) $[\![$ *Clyde is [$_{DegP}$ [$_{Deg_{Adv}P}$ remarkably] [$_R$] [$_{AP}$ tall]]* $]\!]$ =
    $[\![$ [$_R$] $]\!]$($[\![$ *[$_{AP}$ tall]* $]\!]$)($[\![$ *[$_{Deg_{Adv}P}$ remarkably]* $]\!]$)($[\![$ *Clyde* $]\!]$) =
    $\exists$d′ [d′$\in$C $\wedge$ remarkable($^\wedge\exists$d$\exists$C′ [C′$\supset$C $\wedge$ d$\in$C′–C $\wedge$ tall(Clyde)(d) $\wedge$ d$\geq$s$_{tall}$])(d′) $\wedge$
        d′$\geq$s$_{remarkable}$]

This will be true iff it is remarkable to a degree (in the contextually-supplied domain) that exceeds the standard for remarkability that Clyde is tall to a degree which exceeds the standard for tallness and which is not in the contextually-supplied domain but is in the widened domain.

ably adverbs and their adjectival counterparts co-occur the same range of Degs that ordinary adverbs and adjectives do, it would be necessary either to assume all Degs are systematically ambiguous in type or that some sort of type shift takes place here. While the first option is a non-starter, assuming a type shift here is plausible. The type shift required would be one that maps back and forth between functions that apply to a proposition and ones which apply to the individual correlate of that proposition. This would fix the problem—a *remarkably* adverb would be type-shifted into an ordinary adjective denotation in this way before a Deg applies to it, and the entire *remarkably* adverb phrase would be type-shifted back to feed $[\text{R}]$ the right type of argument.

There is, however, another alternative.

5.3   *A Theory Slightly Less Simple Still*

With respect to the analysis of *remarkably* adverbs themselves, it is not actually necessary to assume this type shift. Instead, one can suppose that the lexical denotation of *remarkably* adverbs is already 'shifted' in the right way—that is, that *remarkably* and *remarkable* inherently apply to the individual correlates of propositions, not to propositions themselves. This would eliminate the need for the first type shift, the one that was necessary to provide a Deg with the right type of argument. The second type shift, the one that was necessary to provide $[\text{R}]$ with the right type of argument, can similarly be eliminated by simply encoding the effect of this type shift into the meaning of $[\text{R}]$ itself—it too could apply to expressions with ordinary AP/AdvP denotations, and retrieve in its own denotation the propositional correlate. This solves the problem for *remarkably* adverbs, allowing them and their adjectival counterparts to be of an ordinary adjective type without appealing to type-shifting.

But what about the clause-modifying uses? If *remarkably* adverbs apply to directly individuals, a type-shift would be necessary to permit them to apply to propositions, as is necessary to achieve the right clause-modifying reading (as in (67)). Without resort to this type-shift, these adverbs would be uninterpretable.

One could conclude from this that, in order to maintain a unified account that includes these uses, the type-shifting approach is necessary after all. A more intriguing possibility, though, is to take the solution for this problem in the adjectival extended projection to be more general—perhaps this mapping from individuals to propositions in the clause-modifying uses is not a type-shift, but rather the semantic contribution of an element of clausal functional structure in this respect analogous to the Deg $[\text{R}]$.

While it is a larger project than can be undertaken here to fully motivate

such an explanation, it does seem to have a number of things to recommend it. One of these is that it accords nicely with recent work that strives to further articulate the functional structure in this high region of the clause (Rizzi 1997 and others), as well as to approaches to adverbial modification in these positions that provide exactly the necessary architecture (Cinque 1999). Another is that it would in several ways be independently useful to suppose that some element of clausal functional structure can perform this sort of mapping between propositions and individuals. Thus, it would be useful in accounting for the ability of certain adjectives—the adjectival counterparts of *remarkably* adverbs among them, non-accidentally—to take both propositional and individual-denoting arguments:

(68) a. Esmeralda is amazing.
      b. It is amazing that Esmeralda is an astronaut.

(69) a. George is quite shocking.
      b. It is quite shocking that George would say that sort of thing publicly.

The (a) sentences here are unproblematic, but if adjectives always apply to individuals, the (b) sentences will require this proposition-individual mapping to take place. A natural view of how this works, from this perspective, is to suppose that this mapping is performed high in the functional structure of the embedded clause— indeed, in the same place where the clause-modifying adverbs relevant here are licensed. Thus one might suppose that two interpretable features, $[\text{EMBEDDED}]$ and $[\text{SOE-ADV}]^{37}$, occur in the same structural position, and both perform different sorts of proposition-individual mapping. $[\text{EMBEDDED}]$ takes only a proposition as an argument, and yields its individual correlate[38]; this is what is involved in the (b) sentences here. On the other hand, $[\text{SOE-ADV}]$ takes as arguments a proposition and the denotation of a clausal use of a *remarkably* adverb, and yields the proposition that results from applying the adverb denotation to the individual correlate of the proposition. This would account for the pattern in (70):[39]

(70) a. Remarkably, Clyde is tall.
      b. It is doubtful that Clyde is tall.
      c. *It is doubtful that remarkably, Clyde is tall.

In (70a), *remarkably* is interpreted with the aid of $[\text{SOE-ADV}]$; in (70b), the clause is embedded with the aid of $[\text{EMBEDDED}]$. Neither $[\text{SOE-ADV}]$ nor $[\text{EMBEDDED}]$ could perform the mapping necessary in (70c), however—$[\text{EMBEDDED}]$ does not

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[37] $[\text{SOE-ADV}]$ abbreviates 'speaker-oriented evaluative adverb'.

[38] Kratzer (1999a) suggests that this is the denotation of the complementizer *that*.

[39] There is an interpretation on which (70c) is grammatical, in which the adverb is interpreted as though it were not embedded, suggesting that it is an appositive.

accept an adverb argument, and [SOE-ADV] does not yield an individual, which is what *doubtful* requires.

At this level of detail, this is of course all rather speculative, but it does seem to suggest at least that the treatment of *remarkably* adverbs proposed here presents some interesting further analytical possibilities, especially with respect to the interrelations between adverb position, meaning, and functional structure.

6 Final Remark

In a nutshell, the central goal here has been to account for the syntax and semantics of one natural class of ad-adjectival adverbs, namely *remarkably* adverbs. The interpretation proposed for these adverbs makes crucial reference to domain-widening for degrees, thereby likening these adverbs to certain exclamatives. This interpretation is built up by treating these adverbs as the semantic arguments of a Deg(ree) head in a way that parallels existing analyses of measure phrases, thereby avoiding a number of compositional difficulties.

An essential element of this proposal is that it executes a kind of 'factoring out' of the positional meaning of the adverb, leaving the adverb's meaning relatively simple and attributing the additional factored-out meaning to an element in the structure of the adjective projection, the degree head. Importantly, this factored-out meaning involves more than combinatorial manipulation; it is not merely a type-shift. Nor is it of a sort that could be derived (in any straightforward way) only from differences in the nature of the semantic object being modified in different positions.

The structure arrived at here, motivated primarily by compositional concerns and independent assumptions about the architecture of AP, involves an adverb occupying the specifier position of a functional head, which accords with the view of Cinque (1994, 1999) and others that adverbs in general are specifiers to functional heads. This is in some respects a startling result, since it was arrived at for different reasons on the basis of a fundamentally different sort of argumentation and in the context of a different set of broader theoretical assumptions.

This suggests too that it may be reasonable to think that the semantic relation between (certain) other modifiers and the expressions they modify might similarly be mediated by elements of the functional structure of the modified expression. To the extent that this mode of modification can be more generally motivated, it may open up some possibilities in the analysis of various other nettlesome modifiers more broadly (Morzycki 2001a,b).

More narrowly, this represents an attempt to begin to grapple with some of

the essential facts of adverbial modification inside AP, an empirical domain largely (and oddly) neglected in the comparatively extensive literature on adverbs more generally. There is far more richness in this domain than it has been possible to touch on here—other apparent natural classes include what might be called adverbs of degree measure (*slightly*, *vastly*, *enormously*), which could more sensibly be predicated directly of a degree, and ad-adjectival analogues of domain and subject-oriented adverbs. Perhaps, then, the conclusion here of which one can be most confident is that adverbial modification inside AP might merit considering in examining the larger question of adverb syntax and semantics.

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