

Why English adverbial *-ly* is not inflectional*

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0. **The issue.** The relationship between words like *rapid* in a *rapid response* and *rapidly* in *responded rapidly* is literally a textbook example (Robins 1989:242, O'Grady et al. 1991:121, Fromkin & Rodman 1993:49) of derivational, rather than inflectional, morphology, on the basis (at least) of the rules of thumb in (1) and (2): the difference between *rapid* and *rapidly* is the difference between the categories ADJ and ADV, and there are simplex (underived) lexemes - *fast*, *soon*, *today* - with roughly the same distribution as *rapidly*.

- (1) Category-changing morphology is derivational.
- (2) Complex morphology with a simplex 'equivalent' is derivational.

Contrary voices have been heard. In (3), Miller (1991:95) classifies this morphology as inflectional, appealing to the rule of thumb in (4).

- (3) 'Since the distinction between adjective and adverb (between, say, *bright* and *brightly*) depends on a syntactic condition - namely, the syntactic category of the word (whether a noun or something else) that is being modified - it seems reasonable to regard the *-ly* suffix as an inflection, not a derivation.'
- (4) Syntactically relevant morphology is inflectional; morphology that is never syntactically relevant is derivational.

Miller's discussion, in a book meant for a lay audience, echos a proposal made several times in the technical literature on morphology, among others by Sugioka & Lehr (1983:295), in (5), and Bybee (1985:84f), in (6). Both refer to the syntactic relevance criterion, and Bybee appeals as well to the (famously unreliable) criterion of generality, in (7).

- (5) 'Adverbial *-ly* attaches to adverbs which are under VP or AP. For instance, quick ---> quickly in 'He thinks _____'....
We claim that this *-ly* affixation rule is an inflectional rule because it is sensitive to the syntactic position of the adverb. Although the distinction between derivation and inflection is not a clear cut one, one useful criterion seems to be that syntactic information is necessary for inflection...'
- (6) 'The more general a morphological process, the more it will resemble an inflectional process. For instance, the *-ly* suffix in English that produces an adverb from an adjective has full lexical generality in the sense that any member of the category *adjective* can take this suffix. The few exceptions resemble the exceptions to inflectional processes: *good* and *well* may be thought of as suppletive forms, and *fast* may be thought of as having a zero allomorph. It could even be argued in this case that the morpheme *-ly* is required by the syntax, since whenever an adjective appears in certain syntactic positions, it is obligatorily modified by *-ly*. For instance, an adjective is required in the sentence *Sara gave a thoughtful answer* but an adverb is required in *Sara answered thoughtfully*. In fact, it is possible that the principle that morphology that changes the syntactic category of a word

is always derivational is a false principle, and that *-ly*, gerundial *-ing* and comparable morphemes in other languages should be considered inflectional.'

- (7) Very general and productive morphology is likely to be inflectional.

The proposal is not new, though in the earlier literature it was sometimes argued for on different grounds. Hockett (1958:210), in (8), cites the syntactic function of *-ly* but takes mutual exclusiveness with the inflectional affixes of adjective grade (**quicklier*, **quickerly*) to be decisive, thus appealing to a paradigm criterion, as in (9), as well as to the general principle that inflection is outside derivation, as in (10).

- (8) 'Some cases [in classifying affixes as either inflectional or derivational] remain uncertain under our initial definition [which takes inflectional affixes to be grammatical markers]. If the bound form in an uncertain case is used with stems in much the same way as are one or more clearly inflectional affixes, then the marginal case is counted as inflectional too. English *-ly*, as in *prettily*, is an instance. It is not unreasonable to say that in *She sang prettily* the *-ly* marks the fact that *prettily* is attributive to *sang*. Furthermore, *-ly* is mutually exclusive with *-er* and *-est* (*prettier*, *prettiest*), in the sense that at most one of the three occurs at a time in the word. Since *pretty* : *prettier* : *prettiest* belong to a single paradigm, we are led to add *prettily* to the paradigm, and to class *-ly* as an inflectional affix.'
- (9) Morphology that is mutually exclusive with clearly inflectional morphology is inflectional; inflectional morphology comes in paradigms.
- (10) Morphemes in rim position are inflectional.

And Bazell (1953:72), in (11), finds that for English *-ly* his criteria distinguishing inflection from derivation give no clear answer. In particular, he observes that an appeal to the meaning of the affix, as in (12) (in the spirit of Sapir 1921), is inconclusive, given that there are some languages in which this meaning is conveyed by derivational morphology and others in which it is conveyed by inflectional morphology.

- (11) 'the question [of inflectional or derivational status] cannot be answered in one sense or the other: the unit is marginal. In the classical languages however the criteria weigh rather in favour of the traditional interpretation [of 'adverbial endings' as derivational]. The reverse is true of the nearest Turkish equivalent of an "adverbial ending", namely *-ce*; here...criteria are decisive in favour of regarding the morpheme as a case of the adjective.'
- (12) Morphology expressing very abstract and grammatical meanings - subject or direct object function, for instance - is inflectional, and morphology expressing very concrete meanings - relating names of fruits to names of trees bearing those fruits (as in French *prun-ier*>), for instance - is derivational.

Why do we care about the classification of this, or any other, bit of morphology as inflectional or derivational? Because the distinction between (syntactically relevant) inflection and (lexically functional) derivation is tied to the very notion of *lexeme* (or *lexical item*) and to potentially restrictive hypotheses

about the interaction between components of a grammar and subcomponents of morphology.

Why is it such a problem? Because though very abstract and 'grammatical' elements are certainly inflectional, and very concrete and highly specialized elements are almost surely derivational, meaning alone is far from sufficient to make the right distinctions (despite Sapir's hopes); you have to know how virtually the whole grammar works to see how particular items fit in.

1. **What is to come.** In what follows I am going to try to construct as plausible an account as I can of adverbial *-ly* as inflectional. I'm going to use the discussion by Sugioka & Lehr (hereafter, S&L) - the most detailed I know of along these lines, though (as we shall see) it is fuzzy on many important points - as my starting point. In section 2 I go through their own evidence, plus one further point from the literature, to put together an inflectional analysis that does the job, though it is not lovely. In section 3 I expand the range of relevant facts and replace some aspects of S&L's analysis with what I think is (from the empirical point of view) a vastly superior analysis, though it carries over the unlovely features of the analysis in section 2. In section 4 I observe that the remaining problems cluster about one fact, the existence of adverbial-only items; apparently what we are looking at is the determination of syntactic subcategory for the head word of a construction, not the distribution of inflectional features on such words. In section 5 I sketch very briefly the derivational analysis. And in section 6 I conclude with what I take to be the main lesson of this paper, that criteria like 'syntactic relevance' cannot be applied, or even properly understood, in a theoretical vacuum.

As is clear from (5), S&L assumed that syntactic rules could directly manipulate (insert, delete, move, or replace) specific morphemes. Their assumption was that for lexical items of category A (comprising both adjectives and adverbs) in English, the basic version lacks the suffix *-ly*, and that in certain contexts syntactic rules insert the suffix (for the moment I put aside the question of just what those contexts are). Now, I would like to maintain a separation between the rules of syntax (which treat words as wholes) and those of morphology (which concern the internal makeup of words) and so must replace S&L's analysis with an equivalent one that respects the modularity of grammar.

A translation of S&L's analysis into one compatible with morphology-free syntax will have rules of syntax distributing *properties* of expressions - that is, feature values - that are ultimately located on words of category A, and rules of morphology realizing those properties in phonological characteristics of words. The syntax doesn't deal directly in stems and suffixes, but instead in the values of some feature (which I'll call AFORM, with two values, AFORM:BSE and AFORM:ADV), and the morphology says how those feature values are expressed within the word:

(13) Syntax:

S1. The default value of AFORM is BSE.

S2. AFORM has the value ADV in certain contexts Φ .

(14) Morphology:

M1. AFORM:ADV is realized by the suffixation of *-ly* to an A stem.

(The absence of any rule stipulating a realization for AFORM:BSE means that a word of category A with this property appears as a bare, unaltered, stem.)

At this point, I appear merely to have replaced a single characteristic of A words - they are unsuffixed or they have *-ly* - with two characteristics, one syntactic (AFORM:BSE vs. AFORM:ADV) and one morphological (lacking suffix vs. suffixed with *-ly*), in such a way that the characteristics in the two components of grammar are exactly aligned. Moreover, the values of the syntactic feature AFORM are exactly aligned with the syntactic functions adjectival vs. adverbial:

(15)	a. Syntactic function:	adjectival	adverbial
	b. Syntactic feature:	BSE	ADV
	c. Morphology:	stem	stem <i>-ly</i>

This is innocuous, though it might seem to be a pointless multiplication of properties, serving only to satisfy modularity assumptions. I should note, though, that this separation of two types of syntactic properties (one interfacing with semantics, the other with morphology) and one type of purely morphological properties allows for circumstances in which the three sets of properties are not aligned as in (15).

2. Relevant phenomena. S&L maintain that many characteristics of adverbial *-ly* words in English - sections 2.1 through 2.4 below - have a natural account if *-ly* is treated as inflectional; in section 2.5 I consider one further relevant phenomenon and show how it too can be accommodated within an inflectional analysis of *-ly*.

S&L's own discussions are quite sketchy, however, and need to be fleshed out. For the examples of nonpredicating modification in section 2.1, I believe that further consideration indicates that the phenomena do not actually bear on the analysis of *-ly*.

In sections 2.2 (double-duty items), 2.3 (comparatives), and 2.5 (adverbial only items), there are two different ways in which the details can be filled in - one in which some complexity is introduced into the morphological side of the description (while preserving the association between adjectival function and AFORM:BSE, and between adverbial function and AFORM:ADV), another in which some complexity is introduced into the syntactic side of the description (while preserving the association between AFORM:BSE and the lack of a suffix, and between AFORM:ADV and the appearance of the suffix *-ly*). I'll call these the 'morphological version' and the 'syntactic version', respectively, of the inflectional analysis of *-ly*.

It will turn out that for the facts in 2.2 and 2.3, the morphological versions are vastly preferable, on theoretical grounds, to the syntactic versions. The facts in section 2.4, on the other hand, are clearly syntactic, which would seem to force acceptance of the less satisfactory analysis.

2.1. Nonpredicating modification. S&L's discussion is primarily aimed at explaining the appearance of bare rather than suffixed words in nonpredicating modification: *beautiful* in *beautiful dancer* 'one who dances beautifully'. This is an issue only if adjectives like *beautiful* are 'derived from' a word in adverbial function, rather than occurring, with two different interpretations, in two different constructions for combining adjectives with nouns.

Now S&L (293) consider expressions like - their examples - *quick thinker*, *slow mover*, *hard worker*, *fast eater*, *widespread*, *fresh frozen*, *free moving*, *well-formed* and observe:

- (16) 'The first elements of these compounds have most often been considered adjectives because of their morphological form. Allen (1978; Chap. 3, fn. 23), for instance, calls them adjectives because they lack the adverbial marker *-ly*...'

For S&L these elements are VP adverbs, ones that fail to pick up the suffix *-ly* because they are not 'in syntactic position'.¹ But I see no reason (beyond the semantics of the combinations) to treat such words - or the first words of combinations like *willing victim*, *occasional jibe*, and *good companion* - as adverbs at all in the syntax.² I therefore take nonpredicating modification to be irrelevant to the status of *-ly*.

2.2. **Double-duty items.** Next, there is the existence of double-duty (and unsuffixed) lexical items like *fast*, which serve in both the adjectival and the adverbial functions of A words, and of variably double-duty items like *quick* 'quickly', which (for many speakers) stand alongside the suffixed versions in adverbial functions (and for some speakers replace them in some or all of these functions); see (17). S&L's (295) proposal for these lexical items is in (18).

- (17) a. The trains are fast rapid/*rapidly quick/*quickly.
 b. The trains run fast *rapid/rapidly %quick/quickly.
- (18) 'In our analysis all VP adverbs are listed in the basic lexicon without *-ly*. Adverbs like fast, hard are idiosyncratically marked for not undergoing the rule of *-ly* affixation in syntactic position.... There are certain dialects in which ordinary adverbs can occur without *-ly* in syntactic position as shown in the examples...
 John ate quick.
 He ran slow.
 For speakers of these dialects such adverbs are also marked not to undergo this rule.'

There are two interpretations of S&L's analysis: either the rule that certain items don't undergo is a syntactic rule, namely S2 in (13), or it's a morphological rule, namely M1 in (14). Either interpretation gets the facts, or at least the ones we've seen so far, right.

On the syntactic version, certain items of category A fail to get the property AFORM:ADV in the contexts Φ (items like *fast* are lexically -RuleS2), which means that the default syntactic rule, S1, will apply, so that those items in those contexts will have the property AFORM:BSE, will fail to undergo the morphological rule (M1), and therefore will appear as a bare stem.

The morphological version gets this latter effect directly; items like *fast* have the property AFORM:ADV in the contexts Φ , but don't undergo the morphological suffixation rule; they are lexically -RuleM1.

The syntactic version is complicated, however, by the fact that the syntactic rule S2 doesn't impose properties on syntactic **words**>, but on **phrases**, APs in fact, as illustrated in (19).

- (19) a. The train ran [_{AP}> so very rapidly/fast].
 b. The train ran [_{AP} rapidly/fast enough that we were terrified].
 c. The early train runs [_{AP} just as rapidly/fast as the late one].

We then need some mechanism to connect the applicability of a rule that assigns properties to an AP with a feature of the A head of that AP. This is a type of feature sharing not envisaged in the syntactic theories I am acquainted with, though of course the idea could be developed.

On the morphological analysis, the rule in question is one that affects lexical items, and lexical exceptionality is no surprise. Note, though, that on the morphological analysis the perfect alignment of syntactic and morphological properties in (15) is broken; some AFORM:ADV words are suffixed and some are not. The syntactic analysis would preserve this correspondence.

2.3. **Comparatives.** That adverbial *-ly* words lack inflectional comparatives - **quicklier*, **quickerly* - is well known; see Zwicky (1989) for extensive discussion. S&L (295) note that

- (20) 'The comparative formation of the adverb interacts in an interesting way with the *-ly* affixation rule. Comparative *-er* does not appear with adverbial *-ly* but attaches to the root form of the adverb.'

The paradigm is: *Chris ate more quickly / quicker / *quicklier*. In effect, S&L, like Hockett, treat *-ly* and *-er* as filling the same slot for inflection (and so, correctly, predict **quickerly* as well), and thus avoid problems with the analyses offered by Aronoff (1976: 92-4) and Kiparsky (1982: 23-4).

To anticipate the discussion of section 5 below: for Zwicky (1989) there are two rules deriving ADV from ADJ, one suffixing *-ly*, one leaving the stem unaltered. Products of the first rule (like products of denominal *-ic*, denominal *-ish*, and deadjectival *-ish*: **Celticker*, **basicer*, **oafisher*, **bluisher*) are not eligible for comparative inflection, even if they are phonologically and semantically impeccable.

A lesson to be drawn from this discussion is there is more than one way that two affixes can be mutually exclusive (beyond the obvious reasons of semantic incompatibility or expressing the very same features). One is that the morphological rules of the language stipulate that the affixes fill the same slot; if one such affix is inflectional, then the other is too. But another is that an inflectional paradigm is defective.³

2.3.1. **The inflectional analysis.** I now return to the inflectional analysis of *-ly*. The syntactic version needs the constraint S3 in (21) below, which will override S2 (which overrides S1); *quicker* is then only GRADE:COMP, AFORM:BSE.

- (21) S3. If an A word has the value GRADE:COMP, then it has the value AFORM:BSE.

Note that S3 must be stated as a feature cooccurrence restriction specifically on syntactic words, not as a general restriction, given that GRADE:COMP and AFORM:ADV must be allowed to cooccur on APs:

- (22)
-
- ```

graph TD
 AP["AP
GRADE:COMP, AFORM:ADV"] --- A_modifier["A_modifier
GRADE:COMP, AFORM:BSE
more"]
 AP --- A_head["A_head
GRADE:POS, AFORM:ADV
quickly"]

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The morphological version is much simpler. It involves merely the rule M2 in (23), where slot 1 is the same slot that rule M1 fills with *-ly*.

(23) M3. GRADE:COMP is realized by *-er* in slot 1.

*Quicker* is then GRADE:COMP and ambiguous as between AFORM:BSE and AFORM:ADV.

2.3.2. **A digression.** All of this discussion assumes that comparative *-er* and superlative *-est* are themselves inflectional. This has sometimes been denied. Stephany (1982: 43-6) summarizes evidence for comparatives, like English *-er*, as *derivational*, but in fact she opts for an inflectional analysis, as I did in Zwicky (1989: 146), noting that 'the English comparatives and superlatives...exhibit almost all the symptoms of inflection, lacking only the property of morphological generality'.

2.4. **The postverbal restriction.** A restriction of unsuffixed adverbial words to postverbal position has been noted by S&L (295):

(24) '...there seems to be a surface constraint for all dialects which prohibits any 'ly-less' adverb, including those which never take *-ly* such as *fast*, in preverbal position: \*He fast ate. Because of this surface constraint *-ly* affixation is obligatory preverbally even for the 'ly-less' dialect. Therefore for the 'ly-less' dialect it is not enough to specify the environment for affixation merely as a daughter of the VP, but we must know the specific position of the adverb. This fact further supports the contention that *-ly* distribution is syntactically determined.'

A fuller paradigm:

- (25) a. We will finish the task rapidly/fast.  
 b. We will rapidly/\*fast finish the task.  
 c. We rapidly/\*fast will finish the task.  
 d. Rapidly/\*Fast we will finish the task.

S&L note (295f) that the *-ly-less* comparative is restricted in the same way:

- (26) a. We ate more quickly.  
 b. We ate quicker.  
 (27) a. It was more quickly eaten.  
 b. \*It was quicker eaten.

These facts are obviously syntactic. Here's a sketch of an account, on the assumption that *-ly* is inflectional: (a) S1 is as before, giving AFORM:BSE as the ultimate default; (b) the context  $\Phi$  in S2 is - following S&L, whose characterization is, as we shall see below, very rough - on AP under VP or AP, so that S2 is a subregularity; and (c) there is a new condition on S2:

(28) S2 is **optional** on an AP following the head V under VP.

The condition in (28) is an exception to the subregularity, giving AFORM:BSE (by S1) as a possibility in these post-V contexts. The form of (28) is not without its problems, however; most theorists would hope for a more constrained

treatment of constructional optionality than the one assumed in (28), in which bald stipulations are available.

2.5. **Adverbial-only items.** An inflectional analysis can also accommodate the existence of a rather large number of adverbial-only but unsuffixed words:

(29) *soon, often, very, degree pretty,...*

In the syntactic version of the analysis, items like *soon* are -RuleS1 and -RuleS2, but instead are subject to a new rule S4, which overrides S2:

(30) S4. AFORM has the value BSE in the contexts  $\Phi$ .

The effect is roughly like that of quirky case. The morphological version treats items like *soon* as both -RuleM1 and as lacking the AFORM:BSE form. This might seem like a piling up of extraordinary exceptional characteristics, but in fact such items would be a parallel, in the world of A words, to the English modals (which have only finite forms but are unsuffixed for person and number), in the world of V words. That is, these would be A words that have only the 'ADV form' (and not the 'ADJ form') but lack the *-ly* suffix.

Adverbial-only items are not subject to the post-V requirement - see (31) so the morphological version (in which it acts 'as if' it had *-ly*) seems right for them.

- (31) a. We will finish the task soon.  
b. We will soon finish the task.  
c. We soon will finish the task.  
d. Soon we will finish the task.

Recall that double-duty items like *fast* and *-ly*-less comparatives like *quicker* 'more quickly' are all subject to the post-V requirement - see (25)-(27) - and would seem to need the syntactic version (in which they act like unsuffixed items), with its uglinesses: a special feature sharing mechanism in section 2.2, a special feature cooccurrence restriction (indeed, one applicable only to syntactic words) in section 2.3, stipulated optionality in section 2.4, and now an analogue of quirky case in this section.

3. **Difficulties I.** The story so far is that the facts of sections 2.1 through 2.5 can be described on the assumption that adverbial *-ly* is inflectional, though the description has several problematic aspects. Up to this point, this paper can be read as a cautionary tale for analysts, the moral of which is that initially attractive ideas often lose some of their charms once you really get to work on the details.

But there are two obvious areas of difficulty with such a proposal, one syntactic, one semantic.

3.1. **The context  $\Phi$ .** S&L (295) propose to predict the bare/suffixed distinction configurationally:

- (32) Adverbial *-ly* attaches to adverbs which are under VP or AP. For instance, quick ---> quickly in 'He thinks \_\_\_\_\_'. This rule accounts for the fact that *-ly* never occurs in compound structure but does appear in phrase structure.

Syntactically, contrasts like the following are troublesome for purely configurational analyses like S&L's:



- (33) A immediately dominated by VP:  
 a. The music grew rapid.  
 b. The music grew rapidly.
- (34) A immediately dominated by S:  
 a. Certain, I pressed my point.  
 b. Certainly, I pressed my point.

Predicting the distinction from grammatical relations, as Miller does, is more promising; the rule in (35) comes very close to covering the facts (though it does not cover examples like (36) and (37)).

- (35) Use AFORM:ADV for modifiers of categories other than N, and AFORM:BSE otherwise.
- (36) Predicative A:  
 a. BSE: How the birds sang was beautiful.  
     It was beautiful how the birds sang.  
 b. ADV: How the birds sang was beautifully.  
     It was beautifully that the birds sang.
- (37) Subject ADV: Beautifully was how the birds sang.

3.2. **Semantic variability.** The semantic difficulty is that AFORM:ADV forms belonging to different subtypes stand in different meaning relationships to the corresponding AFORM:BSE forms. Note the different semantics of the *-ly* words in (38a-e).

- (38) a. The birds moved rapidly.  
 b. They were extremely tall.  
 c. We ate the sushi completely up.  
 d. Frankly, I am disappointed.  
 e. Immediately the birds moved.

3.3. **A constructional account.** Taking a cue from Bybee's suggestion in (6) that adverbial *-ly* might well be viewed in the same way as gerundial *-ing*, let's consider one possible way out of the semantic difficulty: analyzing the AFORM:ADV (*-ly*) form of an A lexeme in English exactly like the VFORM:PRP (*-ing*) form of a V lexeme in English, treated by Pullum & Zwicky (1991) as just a nonfinite form of V that is stipulated as an element in a number of different syntactic constructions and gets its various meanings, as in (39), from the constructions in which it is used.

- (39) a. The bird's moving through the water was a surprise.  
     Nominal Gerund  
 b. The bird was moving through the water.  
     Progressive  
 c. Birds moving through the water are impressive.  
     Postmodifier  
 d. Moving birds are impressive.  
     Premodifier  
 e. Who would have believed it! Birds swimming underwater!  
     Exclamatory  
 f. The birds started moving through the water.  
     V Complement

An analysis of this sort for adverbial *-ly* has the additional advantage of providing a way of accounting for predicative occurrences of AFORM:ADV in the cleft constructions of (36b) and for subject occurrences of it in the inverted WH cleft construction of (37). The WH and *it* cleft constructions stipulate that a variety of constituent types, including APs with the feature AFORM:ADV, can occur as predicatives, and the inverted WH cleft allows as subjects just those constituent types that can occur as predicatives in ordinary WH clefts.

**4. Difficulties II.** This 'constructional' account of *-ly* as an inflection, as the morphological consequence of an inflectional feature AFORM:ADV whose distribution is determined by syntactic rules, is the best I am able to devise, and (except for those ugly details exposed in section 2) it has a lot to recommend it.

There is a very serious problem with it, however: each of the relevant constructions merely allows, rather than requires, suffixed words. There are at least a fair number of unsuffixed adverbial-only words, as in (29), that occur in each of the many positions for adverbials in English.<sup>4</sup>

Moreover, items like those in (29) are not extraordinary adverbials (in the way that, say, the modals are extraordinary verbs or dummy *it* and *there* are extraordinary nouns). They are the central, prototypical, defining members of their (sub)categories. It seems perverse to be treating them as exceptional.

Rather than saying that each construction in (38) requires that an A word in a stipulated position have the feature AFORM:ADV - parallel to saying that each construction in (39) requires that a V word in a stipulated position have the feature VFORM:PRP - we should be saying that each construction in (38) has associated with it a class of A lexemes (literally, a **subcategory** of A) licensed to occur in that position. In each subcategory, some members are suffixed and some are not.

That is, instead of treating the ADV vs. ADJ (= BSE) split as an **overt** grammatical category distinction, realized (at least sometimes) in forms of a lexeme (that is, in inflectional morphology), the way transitivity in Tok Pisin (the verb suffix *-im*) and countability in Swahili are marked, we should be seeing the split as a **covert** grammatical category distinction, involving subsets of the items in some major syntactic category, subsets distinguished by their syntactic potential, the way transitivity and countability work in English.

It follows that the relationship between the bare and the suffixed items is a relationship between different lexemes, that is, a derivational relationship; the phonology of the matter is that from bare A lexemes various rules derive A lexemes with the *-ly* suffix. Each derivational rule, both here and in general, also describes the semantics of the derivative as a function of the semantics of the source, and stipulates the syntactic subcategories to which the derivative belongs.

**5. The derivational analysis.** I now sketch how a derivational analysis treats the facts in section 2. This is only a sketch; some of the crucial details are developed further in Zwicky (1989).

- As for nonpredicating modifiers (section 2.1), they are just members of the subcategory ADJ of A (as in the inflectional analysis I developed above).

- As for double-duty items (section 2.2), there are two derivational rules, in (40), predicting ADV lexemes from ADJ sources, and most ADJ lexemes are eligible for both.

(40) D1: ADV is derived from ADJ by suffixing *-ly*.  
(*Fast* etc. are -RuleD1.)

D2: ADV is derived from ADJ without alteration.

(The derivative is often subject to stylistic or registral restrictions.)

- As for the interaction with grade inflection (section 2.3), the products of D1 are (like the products of some other derivational rules) not eligible for inflectional comparison, though the products of D2 are.

- As for the post-V restriction (section 2.4), the products of D2, and of course their comparative forms, belong to only one of the ADV subcategories (it is commonplace for derivative items to be restricted to certain subcategories).

- As for adverbial-only items like *soon* (section 2.5), they are (underived) lexemes in the various ADV subcategories. Recall the 'simplex equivalent' criterion, in (2), for derivation rather than inflection.

The semantic differences in (38) suggest that rather than just one D1 there are several rules deriving ADV from ADJ via *-ly* (degree ADV *extremely*, extent ADV *completely*, speech-act ADV *frankly*, etc.). Note that there are other *-ly* derivational rules already - taking N to frequency ADJ (*monthly*, *yearly*, etc.) and N to descriptive ADJ (*motherly*, *chairmanly*, etc.), in particular.

**6. Concluding remarks.** In addition to the lessons that you really have to work out the details of an analysis and that this process might implicate just about anything in the grammar of a language (note that the inverted WH cleft construction became relevant to my discussion), what this small case study shows is that the criterion of 'syntactic relevance' for distinguishing inflection from derivation (S&L (295): the '*-ly* affixation rule is an inflectional rule because it is sensitive to the syntactic position of the adverb') cannot be applied without reference to some reasonably elaborated framework for syntactic theory, for otherwise it cannot distinguish the specification of a syntactic subcategory of lexemes (a covert grammatical category) from the distribution of a morphosyntactic property (an overt grammatical category) on expressions, ultimately on certain individual words within those expressions. Both sorts of requirements are relevant for the syntax, but in different ways. Should there be any morphology associated with the former it is derivational, because it relates two classes of lexemes. Should the latter receive morphological expression (rather than expression entirely via 'grammatical words'), this will differentiate two forms of the same lexeme, and consequently will be inflectional.

The larger lesson is that criteria like 'syntactic relevance', 'simplex equivalent', and their kin are not definitional, but merely symptomatic. The actual defining characteristics are not directly observable and are inescapably bound up with theoretical assumptions

#### Notes

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1. S&L's analysis thus inverts early transformational treatments - most notably Lees (1960) - in which agentives like *beautiful dancer* are derived by *-ly* deletion, from something like *someone dances beautifully*.

2. I would also deny that *quick thinker* and other ADJ V-er combinations are to be analyzed as **compounds**, compounds like the combinations involving nonpredicating adjectives with nominal interpretations *American history*, *civil engineer*, *legal document* - treated by, inter alia, Levi (1978), Zwicky (1986), and Bates (1988: ch. 3). Contra Roeper & Siegel (1978), who treat *beautiful dancer* 'one who dances beautifully' as an ADJ+N **phrase** whose existence blocks the otherwise predicted \**beautifully dancer*, S&L treat them as compounds.

3. There are still other ways in which two derivational affixes can exclude one another; see the summary in Spencer (1991: 181f) of Fabb's (1988) inventory of affix restrictions in English.

4. There are at least nine positions: the seven Quirk et al. (1985: sec. 8.14) list for adverbials within a clause, plus one for modifiers of A and one for modifiers of P.

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