The Pre-Modification Criterion for French and English and the Category of Adverb

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Résumé

Un inventaire de catégories syntaxiques est justifié s'il permet l'établissement de règles ainsi que de principes précis et économiques rendant compte des combinaisons possibles d'une langue. En prenant appui sur des travaux récents, nous montrons, dans cet article, que la syntaxe française et anglaise est basée sur des projections syntagmatiques fondées sur seulement quatre classes lexicales ouvertes (Nom, Verbe, Adjectif et Préposition), qui se définissent selon le type de classes fermées susceptibles de les pré-modifier. Ce critère permet de catégoriser en Adjectifs les adverbes dérivés d'adjectifs avec les suffixes -ment en français et –ly en anglais. Quant aux autres types d'adverbes, ceux-ci sont classés soit comme Prépositions (p.ex. nearby, inside*), soit comme Spécifieurs d'adjectifs (p. ex. les adverbes de degré) ou de verbes (p. ex. les adverbes temporels). Nous montrons enfin que chaque classe des Spécifieurs comprend 20 à 30 membres.*

Abstract

A syntactic category inventory is justified if it allows accurate and economical rules and principles that express a language's permissible combinations. Using recent work, this essay proposes that French and English syntax are based on phrasal projections of only four open lexical classes (Noun, Verb, Adjective et Preposition) and that the core test of an open class morpheme's category is which closed classes pre-modify it. This criterion justifies assigning adverbials derived from adjectives with French –*ment* and English -*ly* directly to the same category Adjective. The essay then claims that other adverb types are categorially not Adjectives but either Prepositions (*nearby, inside*) or "Specifiers" paired with the phrasal heads, e.g. grading adverbs are Specifier (Adjective), and temporal adverbs are Specifier (Verb). Finally, these closed classes Specifier categories are shown to all be about the same size, with 20-30 members each.

1. The pre-modification criterion

Any theory of grammar must assign the words of a language to various categories in order to be able to state the well-formed combinations of its words. A particular category inventory is justified to the extent that it allows rules and principles that express permissible category combinations accurately and economically.

With this goal in mind, it appears that the most reliable combinations that signal membership in particular open class categories N, V and A are characteristic patterns of grammatical modification, especially types of pre-modification in head-initial languages. In terms of trees, a modifier of an open class category X is defined as an item that occurs inside a phrase XP but not within any phrase YP dominated by XP.

(1)   Pre-Modifiers of open class categories
   a. Nouns N are the category that can be pre-modified by demonstratives, articles, quantifiers, numerals and WH-words. In French : *ce/ cette/ ces, le/ la/ les, un(e), du/ de la/ des, quelque(s), aucun(e), tout(e)(s), chaque, deux/ dix/ quel(le)(s).* For English counterparts, see Jackendoff (1977: Ch. 5) and Emonds (2012b).
   b. Verbs V are the category that can be pre-modified by temporal markers such as French *déjà, encore, toujours, jamais* and English *already, still, yet, always, ever, never*, and by tense, modal and aspectual auxiliaries (French *avoir, être;* English *will, have, be, do*).
   c. Adjectives A are the category that can be pre-modified by grading (or degree) words. In French : *plus, moins, aussi, trop, tellement, très, assez, peu, fort, bien.* In English: *more, less, as, too, so, very, how, quite, somewhat, this, that.*

According to grammatical tradition, adjectives and adverbs are differentiated according to what they modify: Adjectives modify (or sometimes are said to "further specify") nouns, while adverbs modify "verbs and other categories". Despite this difference, in terms of the criterion (1c) adverbs formed with the suffixes *–ment* in French and *–ly* in English are modified exactly like typical (unmarked) gradable adjectives[1].

Keeping these different perspectives in mind, the next sections will move into the issue of the properties of adjectives and adverbs closely related to them. Though traditional grammar differentiates these classes in terms of what they modify, they undeniably also have properties in common (e.g. Bowers 1971,

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1.   On the other hand, many other adverbs, e.g. those made up of single morphemes, have *no properties* of A: French *déjà, encore, puis, guère, ici, demain, hier,* etc.

Grevisse (1980: Ch. VI), and Quirk *et al.* 2004). For other traditionally related pairs of categories, e.g. transitive and intransitive verbs or countable vs. mass nouns, sharing many of the same grammatical pre-modifications is considered a good reason for assigning groups of words to the same "part of speech" (Emonds 1985: Ch. 6). Especially in the generative tradition, there are in depth studies of categories that consider extending this criterion of pre-modification to both Adjective and Adverbs taken together. For English, see Jackendoff (1977: Ch. 6), Emonds (1986), Aronoff (1994: 10), Gieigerich (2012), Fábregas (2014) and Veselovská (2019: Ch. 11), though the first of these eventually does not opt for unifying the two.

In a thorough review of the literature on French adverbials in *–ment,* Dal (2018) argues for the same "single-category claim", that French adverbs in *–ment,* as well as those without any overt affix, are As. Her abstract summarizes as follows : « La conclusion est par conséquent que les adverbes en *–ment* constituent des variantes contextuelles d'adjectifs,... »[2]. For her as well as several others she cites, *–ment* is a suffix on A which does not change A's category, so this French bound morpheme, as well as its English counterpart, is inflectional.

This present study pursues the idea that characteristic sets of grammatical items that pre-modify open class lexical items are the best indicators of which lexical category a word belongs to.

(2)   Pre-Modification Hypothesis
   a. Each lexical category determines a set of Pre-Modifiers. Items with the same Pre-Modifiers are in the same category.
   b. Adverbs formed with the suffixes French *–ment* and English *–ly are sub-cases of the same lexical category* as adjectives, call it A.

(2b) follows from (2a) because the same set of grammatical items productively pre-modifies both adjectives and adverbs derived from them. Here is a list of grammatical pre-modifiers of French lexical open class A.

(3)   *plus, aussi, moins, assez fort, peu, si, tellement, très, trop, bien*

In traditional French grammar (Grevisse 1980: 997), a productive class of adverbs satisfying (2) are those said to be derived from (usually feminine) adjectival roots by addition of the suffix *–ment*: *activement, habilement, lentement, soigneusement.* But according to (2), such adverbs have no

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2.   Of particular interest is Dal's examination of the consequences of assuming a priori that adverbs in *–ment* are an "archetypical example" of derivational (category-changing) morphology (2018: Section 3.3.2). She shows that this assumption, taken seriously, leads to consequences incompatible with the usual properties of derivational morphology.

category distinct from A[3]. Hypothesis (2) thus proposes a method for resolving the uncertainly surrounding the boundaries of the category Adverb, in particular as it manifests itself in research on French (Deulofeu and Valli, 2020).

It is not only in Pre-Modification that Adjectives and such Adverbs derived from them are grammatically similar. With respect to other properties, Adjectives and Adverbs act most often alike; for example, the English grading modifier *enough follows* both subcategories of A rather than precedes them (contrasting with French *assez*). Additionally, some A roots can serve as adverbials without the special adverbial ending (French *vite, fort,* English *fast, hard, long,* etc.).

A more complex phenomenon concerns the grammatical restrictions and possibilities in comparative clauses, i.e. those that follow an A that are graded by e.g. French *plus, moins* or *aussi.* Whether these A are N-modifying adjectives or V-modifying adverbials, the related comparative clauses are uniformly introduced by *que* in French and by *than* or *as* in English. Even though there are many further properties particular to comparative clauses, see Bresnan (1973) for English and Milner (1978) for French, for our purposes here, what is striking is that these properties are the same whether a comparative clause modifies an adjective or an adverb.

The reader should be aware that this article focuses on syntactic commonalties that hold in general for members of lexical categories (e.g. what does the syntax of As have in common), and not on subclasses of adjectives (e.g. of colour, of size, of texture, etc. However interesting this latter question is, the present work focuses only on the syntactic properties generally shared by, and hence characteristic of, all members of a lexical category.

In conclusion, the generative category A subsumes not only adjectives, but also most of the words that traditional grammar calls adverbs, *i.e.* the entire category except for (i) those adverbs which are P (see Section 5 for these), and (ii) a closed subset of grammatical items, e.g. French *maintenant, puis, déjà, encore, donc, jamais. même, aussi,* etc. The primary characteristic of A is its ability to be pre-modified in an AP by the degree words (so-called grading adverbs). It further follows that the grammatical complexities for each of these, especially for the comparatives and superlatives, are also the same for both variants of A. Thus, for AP modifiers of N, we can retain the traditional name and call the *sentence function* of A "adjectival"; otherwise the sentence function but not the category of an A is "adverbial." But the *category* of all of them is A[4].

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3. This conclusion re-opens the question, to be addressed Section 3, of the function of the suffix itself.

4. This article's only linguistic abbreviations are the syntactic category labels, which are the capitalized first letters of the category names: Adjective, Noun, Verb, Preposition, Determiner, Inflection (verbal), Modal, Quantifier, Complementizer. When these are followed by P, they

2. The four lexical categories

This study adopts a generative theoretical framework and for its categories proposes a version of (2) based on the bar notation of Chomsky (1970) worked out in detail in Jackendoff (1977), Milner (1978), and Emonds (1985; 2000). In this framework, there are only four "open" lexical categories with large memberships (i.e. well over 100).

> (4) Properties of Lexical Categories (N, V, A, P): Only these:
> a. can have *referential content*, i.e. are able to refer to properties, events and objects in the empirical world[5],
> b. can be enlarged by coining and neologisms of adult speakers, i.e., they are *open classes,*
> c. can *project as heads of interpretable multi-word phrases* even in the absence of other lexical category phrase[6],
> d. d. can be the heads of English compounds: *bedroom, top heavy, steam clean, upstairs.* Cf. note 13 on heads of P,
> e. can be host stems for morphologically derived N, A, V,
> f. have productive regular inflections, such as plural N, agreeing V and A, and graded A.

For determination of when irregular inflection can supersede a productive pattern, see Section 9 below.

Summarizing, only the four lexical categories can have referential content, are open classes, and can be heads of phrases. These four categories are N (noun), V (verb), A (adjectives and the open subset of adverbs derived from them), and P (ad-positions). It is important to note that once the adverbs formed by the suffixes *–ment* and *–ly* are re-classified as A, the remaining words traditionally classed as adverbs can neither have referential content, nor project to phrases.

There is a long-standing question in the generative literature as to whether syntactic categories should be replaced by (possibly unstructured) sets of grammatical features. As we will see below, categories should be replaced rather by *structured (ordered) sets of features.* Under this view, the syntactic categories of words and phrases should be considered their *primary* (or initially ordered) *syntactic feature.* Thus,

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stand for phrases, as in AP = Adjective Phrase. A handful of widely used abbreviated feature labels also appear: F for Feature, FEM, PLUR, NUM, and WH. A few abbreviations proper to this article are defined in the text at their first use.

5. Thus, the grammatical words that modify As (such as *very, too, more, as*) and Modals that modify English Vs (such as *may, should, will, shall*) refer to no real world properties. The converse does not hold: not all items in lexical categories need have real world content; for example the adjectives *probable, usual,* and *opposite* lack it.

6. The following underlined phrases projected from non-lexical Determiners and Modals are well-formed only by virtue of ellipsis of structurally present lexical category phrases:
   – *Mary prefers [those three [$_{NP}$ Ø]] to my friends in London;*
   – *Mary complains about the rent more than [John ever would [$_{VP}$ Ø]].*

the category N in lexical entries should be replaced by a *linearly ordered* sequence of features N, F2, … The next section is devoted to motivating this new notation.

3. Distinctions between Adjectives and derived Adverbs

Analysts of particular languages have certainly found ways in which traditionally classified adjectives and (productively derived) adverbs grammatically differ. I now evaluate these differences between these two word classes, in particular with respect to French and English. (Space limits preclude a wider cross-linguistic study.) In fact, the differences are quite restricted. They include:

3.1. Differences in Agreement

Traditional grammar calls a word an adjective only if it modifies or in some similar way "further specifies the content" of an overt or understood Noun. Modifying adjectives within NPs are said to be in the grammatical relation of "Attribute" with this head N, and in French such adjectives, called "épithètes", agree with this N in Gender and Number:

> (5)   *Une <u>maison</u> très <u>belle</u> est souvent difficile à trouver.*
>   *Je voudrais engager des <u>collaborateurs</u> assez <u>scrupuleux</u>*

However, Adjectives that agree with an N can also appear outside the bracketed phrases NP headed by this N; these are all underlined in (6):

> (6)   a. *Le comité a jugé [<u>la patronne</u>] (comme) <u>assez généreuse</u>[7].*
>   *Ils vont considérer [<u>vos suggestions</u>] (comme) <u>très sérieuses</u>.*
>   b. *[<u>Ce vieillard</u>] est devenu <u>plus lent</u>.*
>   *Pour ce projet, [<u>mes collaborateurs</u>] se sont révélés <u>trop scrupuleux</u>.*

In French such adjectives are called "attributs". The traditional term in English for the grammatical relation or sentence function of such adjectives varies. Here I will call them "Adjectival Complements" of the lexical head which selects them, in the examples (6), the verbs *juger, considérer, devenir, révéler*.

Now in accord with the Pre-Modification Hypothesis (2), we should assign these Adjective Complements to have *the same category* as the underlined Adverbials in (7), even though their sentence function and hence interpretation is entirely different. For discussion of these different interpretations, see Section 3.2 below.

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7.   We know that the Adjective Phrase can be outside the direct object because the latter can be passivized and focused in cleft sentences without moving the AP:
      La patronne a été jugée (comme) assez généreuse.
      C'était la patronne que le comité a jugé (comme) assez généreuse.

(7)   a.   *Le comité a jugé <u>assez généreusement</u> la patronne.*
          Ils vont considérer <u>très sérieusement</u> vos suggestions.
      b.   *Ce vieillard est revenu <u>plus lentement</u>.*
          Pour ce projet, mes collaborateurs ont travaillé <u>trop scrupuleusement</u>.

These underlined "Adverbs" allow exactly the same pre-modifiers as do the Adjective Complements in (6): *assez, très, plus, trop,* etc.

Nevertheless, in French, the essential aspect of the traditional division between adverbs and adjectives is agreement. In some idioms, there are forms of A that *neither* appear with *-ment* nor agree when the A (underlined) semantically specify the action of the Verb:

(8)   *Ces deux filles chantent toujours <u>très faux</u>.*
      Une table faite de ce bois pèse <u>tellement lourd.</u>
      Juste avant midi, les clochers de l'église sonnaient <u>très fort</u>.
      Pendant tout le débat, notre représentante a tenu <u>assez bon</u>.

As traditional treatments would be the first to note, these APs do not agree with anything in their clauses. But to express this, we do not need to resort to assigning them to a different (non-Adjectival) part of speech[8]. Indeed, an alternative solution can be proposed by using different syntactic relations for a single part of speech (Abeillé & Godard 2005).

3.2. Differences in Grammatical Relations (= Sentence Functions)

In other grammatical contexts not involving APs, when some phrasal type such as DPs appears in different sentence functions/grammatical relations, how is this formally represented? For example, how are subject DPs, direct object DPs, and indirect object DPs represented differently so that their contrasting morphologies (in many languages) can be formally distinguished?

When DPs have distinct morphology in different sentence functions, no one says that they are then in different parts of speech in each function. Rather, almost all approaches to grammar say that they have "distinct case features", such as nominative in the subject function, accusative in the direct object function, oblique in the indirect object function, etc.[9]. Now these case names, as used in

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8.   In these idioms with common verbs, the adverbial ending *–ment/ -ly* is not overt. Some further French examples are provided in Abeillé and Godard (2004), who consider these complements as adjectives with an adverbial function, which I agree is correct.

9.   These are the cases that *directly* reflect various grammatical relations. Of course, the most interesting and non-trivial aspects of case theory are those that concern mismatches between morphological cases and grammatical relations: accusative/ dative subjects (many Indo-European languages), nominative direct objects (e.g. Finnish), accusative indirect objects (e.g. Classical Arabic), etc.

both traditional and much generative grammar, are themselves just ad hoc labels attached to different empirical paradigms, and as such the names themselves do little to explain how it is that the same type of phrases (DPs) serve in different sentence functions.

For this reason, generative grammar seems to be approaching a conception whereby traditional case names are replaced by the feature names of the head categories that assign them case (Emonds 1985: Ch. 5; 2000: Ch.4; Pesetsky and Torrego 2007). Thus, a Latin Noun for 'slave' in the accusative case has the following features: *servum,* N, V, and the oblique case form is assigned by P in PPs: *servō,* N, P. The category that assigns nominative case is the "finite-ness" category I (Chomsky 1986), which is a functional head whose sister is the following VP. This category is multiply justified in English (Emonds, 1978, 2019) as the constituent which inverts with the subject n questions, precedes the negation *n't* (which in turn precedes the VP), appears in tag questions, and signals VP ellipsis. Thus, the Latin nominative of 'slave' has the case feature I: *servus,* N, I[10].

The independently motivated case features on N are formally defined as follows:

(9)   **Case Features.** A case feature is a primary feature (= syntactic category) F of a phrasal head *copied as a secondary feature* on the head of a DP sister of F.

Universally, there seems to be a strictly limited number of case features: V, P, I, D and possibly N or A[11].

Let us turn now to a possible parallel to DP/NP case among APs (Adjective Phrases and Adverbial Phrases derived from them). The agreeing but not attributive AP Complements in (6) do not seem to further semantically specify the V that selects them, but rather the underlined Nouns that they agree with in the same clause. In fact, in Slavic languages and Latin, these AP Complements also agree in case with these same Nouns.

Thus, in a language with morphological case on Nouns, the N-A pairs in (6a) would be accusative (marked with V-case) and in (6b) would be nominative (marked with I-case). What then are the features of these adjectival A? For *généreuse* and *sérieuses* in (6a), the marked features should be the primary category feature A, with a secondary selected feature N (which makes the A into

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10.   The functional head sister I of VP is also empirically motivated in French as the position of its finite verbs. Many short French adverbs, in particular the negative adverbs *pas, point, guère* and *jamais*, precede the VP (as in English), but must follow finite verbs, since the latter move to their left into the I position (see Emonds 1978 for details).

11.   In some of the more complicated case systems, e.g. Finno-Ugric languages, copied case features can consist of primary features combined with one or two of their sub-categories, such as GOAL, SOURCE and SURFACE. For a detailed analysis of this type, see Den Dikken and Dekany (2019).

a predicate adjective whose subject is the main verb's direct object). A nominal category that is a sister of a V thus receives an additional secondary case feature V, which in combination with N indicates accusative case[12]:

(10)　In (6a), the ordered set of marked features for *généreuse* and *sérieuses* is A, N, V, FEM, (PLUR)

(11)　In (6b) for *lent* and *scrupuleux* the set is A, N, I, (PLUR).

Similarly in (6b), *lent* and *scrupuleux* are Nominative (more precisely, the Latin and Slavic counterparts would be nominative) with the secondary case feature N, which shows that they further specify a Noun and not a Verb.

In contrast to the adjectives in (6), the manner adverbs in (7), *généreusement, sérieusement, lentement* and *scrupuleusement,* directly modify the Verb. In this sense, they are formally like direct object DPs. So like (potentially) accusative DPs, their first secondary feature should be V. But since the head here is an A, this V is not a case feature in the traditional sense. Nonetheless, the verb-modifying (or "adverbial") secondary feature V on an A is akin to a case feature on N or D; on this point see also Dal (2018)[13]. This can be parsimoniously expressed by formally generalizing Case Features (8):

(12)　**Extended Case Features.** An *extended case feature* is a primary feature (category) F of a phrasal head copied as a *secondary* feature on the head of a phrasal sister XP of F.

Thus, the As in (7) have an "extended" case feature V, while in (6), the extended case features on *généreuse* and *scrupuleux* are N, V and N, I respectively (Extended case features subsume case features).

This section has been discussing the possible secondary features on APs. The APs traditionally classified as verb-modifying manner adverbs have a secondary feature V. If an adverbial AP is rather a "sentence adverbial" (one that modifies not the verb but rather a whole clause, e.g. *actually, probably, typically*) they have a secondary feature I, but their primary category is equally well A.

In short, when an AP is selected by V but is interpreted rather as an Adjectival Complement that further specifies a subject or direct object DP, then

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12.　The implication, in accord with much traditional grammar, is that Object Complement APs are simultaneously in a grammatical relation with the matrix verb and with its direct object.

13.　There is thus a parallel between APs and nominal phrases: they either receive a case from the head that selects them (typically V or P) or from the head that agrees with them (typically I). In the same way, an adverbial AP receives a case from a head that selects them, while an adjectival AP receives case from the D or N that agrees with it. Such a system is reminiscent of the analysis of Caha and Medová (2009), whereby Czech (non-agreeing) adverbs are case-marked (differently) by a selecting V or P.

its secondary features include N[14]. The characteristic features of any predicate adjective in any position is thus a primary feature/ category A and a secondary feature N. In a language with overt adjectival agreement, this N is the basis for agreement with its DP subject.

In this way, it is unnecessary and redundant to have recourse to a special head category "Adverb" for APs that modify Verbs. The productive class of adverbs formed with French *–ment* and English *–ly,* are heads of APs like any other A, i.e. they conform to the Pre-Modification Hypothesis (2). Though without doubt the *Sentence Functions* of traditionally classified adjectives and adverbs differ, these different functions of AP are akin to *different functions* of e.g. NP/DP subjects and objects, which no grammatical theory claims justify assigning subject and object nouns to different parts of speech. By the same reasoning, the difference in Sentence Functions of Adjectives and Adverbs is no reason to assign them to different categories[15].

4. An English-based argument that *–ly* is an inflection

In accounts where Adjectives and Adverbs are considered to be different parts of speech, it follows that French *–ment* and English *-ly* are derivational, that is, "category-changing" suffixes, while in the framework advocated here, *-ment* and *-ly must be inflectional* (like case features), because they reflect only different grammatical relations (= sentence functions) on the same category A.

These contrasting analyses correspond to different predictions about possible combinations of suffixes, since derivational and inflectional suffixes have somewhat different combinatorial properties. In particular, we will see that English (but not French) conforms to a certain rarely recognized language-particular restriction on inflectional suffixes.

In general, inflections can be added to derivational suffixes rather freely, including in English to the incontestably derivational suffixes *–y* and *–li-/ ly,* which turn some nouns into gradable adjectives, yielding derivational + inflectional combinations:

(13)   *dust-i-er, hill-i-er, friend-li-er, dead-li-er, live-li-er*
       luck-i-est, hand-i-est, low-li-est, cost-li-est, man-li-est

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14.   Further research is needed to determine whether and when D rather than N might be the secondary feature on an Adjectival Complement. See also the discussion of sentence adverbials in Dal (2018: Section 3.3.2.2).

15.   Even the morphological differences between Adjectives and Adverbs, when analysed in detail, sometimes independently support the Pre-Modification Hypothesis. Such analyses (Emonds 2012a; Cerná 2016) show that the language-particular morphology in Section 3.1 is a superficial phenomenon with no impact on general semantic principles or the interpretation of particular constructions (in generative terms, it has no impact on "Logical Form").

On the other hand, English has a particular restriction on inflectional suffixes not shared with French. The latter, like many languages, allows some sequences of more than one productive inflection (14). English however excludes such sequences (15), as shown by the data in (16).

(14)   *Nous <u>parl-er-i-ons</u> de ce sujet* (Irrealis + Past + 1st Plur.)
       Les <u>petit-e-s</u> histoires de mon oncle (Fem. + Plur.)

(15)   **English Inflections.** English words can include at most one overt productive inflection.

(16)   a. *overt plural + overt progressive:
           *The cost of the locks → the locks' cost, but *the locks's cost. Cf. the box's cost, so the restriction is not due to phonology.*
           *Owners of the two ships → the two ships' owners, but *the two ships's owners. But acceptable: the eclipse's duration, again showing the restriction is not phonological in nature.*
       b. *3rd person sing. –s + productive past tense:
           *That guy tried (*s) a new way. That guy tries (*d) a new way.*
           *two overt productive contractions in a row:
           *He hasn't eaten yet. He's not eaten yet. *He'sn't eaten yet.*

Principle (15) provides a precise way to test whether the English adverbial ending *–ly* is derivational (the traditional view, where adverbs are a separate part of speech) or inflectional (as in this essay, where the ending indicates a sentence function, not a category change). If *–ly* is derivational, parallel to (13) productive inflection should be able to follow it, but if *–ly* is inflectional, a second (grading) inflection should be excluded by (15).

This leads to a clear result. The productive adverbial suffix *–ly* is *never* followed by a comparative or superlative grading inflection, no matter how common and short the root is; analytic grading is always required with an adverbial *–ly*[16]:

(17)   *bravlier, *widelier,*slowlier
       *slowliest, *evenliest, *warmliest
       more bravely/ widely/ slowly; most slowly/ evenly/ warmly

The facts thus decide which approach is right. They show that adverbial *-ly* is an inflection. Unlike derivational suffixes, *adding -ly to A doesn't change the*

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16.   Dal (2018) endorses an early version of this argument based on complementary distribution: « [Selon Hockett (1958)] les formes adverbiales en *–ly* relèvent du même paradigme que les formes adjectivales en *–er* et en *–est*, donc que, comme *–er* et *–est*, *–ly* est flexionnel. » Along the same lines, see Giegerich (2012).

grammatical category of A. Since it is an inflection, by (15) it cannot co-occur with the other productive A-inflections *–er* and *–est,* as seen in (17)[17].

The conclusion that the adverbial ending *-ly* is an inflection on A plausibly holds for French adverbial *-ment* as well, since in both languages, the two endings have similar behaviour, including pre-modification. And once it is understood that adverbs derived from adjectives are inflected forms of the latter, another puzzling shared property of French and English adverbials is predicted, namely the "derivational impasse" observed in Apothéloz (2002). As he shows, no derivational morphological pattern can be based on French adverbs in *-ment* (the same goes for English adverbs with *-ly*). Now in general, these languages permit sequences of derivational morphemes, such as *organisationel/ organizational*, but *never allow* derivation to follow inflection (**organesisationel/ *organsizational*). This explains why, as Apothéloz claims, "based on an Adverb, one cannot lexically construct anything further".

5. Modifiers that are not adverbs but adverbial PPs

Up to this point, this study has argued that the productive class of French "adverbs" ending in *–ment* and their English counterparts in *–ly* do not belong to a part of speech Adverb, but rather to the category/ part of speech A(djective). But it may still seem like there is a fifth open class category Adverb containing many dozens, and in English probably over a hundred items. Such modifiers traditionally classed as adverbs are underlined in the following examples.

(18)   *The air attack <u>afterwards/ yesterday</u> caused more damage.*
       The meetings <u>outside/ upstairs</u> disturb the neighbours.
       Those roads <u>inland/ uphill</u> look very dangerous.
       Some food sellers <u>nearby/ alongside</u> were complaining a lot.

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17.   In general, English As in *–ly* have the secondary feature V and aren't in a grammatical relation with N. But a semi-grammatical style, perhaps journalese or legalese, can produce the following ?examples, to my ear infelicitous variants of the normal pre-nominal adjectives.
       1.   *We didn't see the educational purpose of this sport.*
            ?We didn't see the purpose educationally of this sport.
       2.   *A secondary aim of this grant is to involve immigrants.*
            ?An aim secondarily of this grant is to involve immigrants.
       3.   *The unique global role of the .. Association… is described.*
            ?The unique role globally of the .. Association… is described.
       4.   *The NHS and other international health organisations need methodologies.*
            ?The NHS and other health organisations internationally need methodologies.
       Payne *et al.* (2010) present the internet examples c-d with ? as evidence that adverbs in *–ly* have a category different than A. But it seems to me that if anything, the *synonymy* of these pairs suggests the contrary. Thus, the obvious category changes of *clean* in *They really have*

Observe, however, that these modifiers are noun-phrase internal, as illustrated by the bracketed cleft-focus phrases in (19). The focus position in English cleft sentences allows only a single phrase, which is moreover a DP or a PP.

(19)   *It was [the attack afterwards/ yesterday] that caused more damage.*
It's [the meetings outside/ upstairs] that disturb the neighbours.
It's [those roads inland/ uphill] that look so dangerous.
It was [some food sellers nearby/ alongside] who complained a lot.

Moreover, these "adverbs" allow the same pre-modifiers in (19) as do items that are clearly Prepositional heads of PPs in (20)-(21).

(20)   *The air attack right afterwards caused more damage.*
The meetings right outside/ right upstairs disturb them
Those roads straight inland/ straight uphill look so dangerous.
Some food sellers right nearby/ right alongside complained a lot.

(21)   *The air attack right at dawn caused more damage.*
The meetings right near their house disturb them.
That road straight down the slope looks dangerous.
Some food sellers right by the station complained a lot.

An additional argument confirming the PP status of these post-nominal modifiers is the fact that they satisfy the obligatory sub-categorization frame +___PP of English verbs such as *put, place, glance, dash, locate,* etc. (Chomsky 1965: Ch. 2). *(x) means x cannot be omitted.

(22)   *Let's put your announcements *(afterwards).*
*Glance *(outside) and you'll see what I mean!*
*They will place the new furniture *(upstairs).*
*The kids dashed *(uphill/ alongside) to get a good look.*
*The city will locate a new highway *(inland/ nearby).*

On the basis of these arguments, I conclude that the underlined "adverbial" space and time modifiers in (18), and many dozens like them (*aboard, abroad, downstream, onwards, overhead, upwards,* etc.) are "intransitive P", whose categorial status has been extensively argued for in Emonds (1985: Chapter 6)[18].

As brought to my attention by J. Deulofeu, this same analysis is adopted by Abeillé and Godard (2005) for numerous French morphemes traditionally

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   cleaned, they really are cleaners, they really are clean force clear changes in meaning, whereas the above pairs exhibit no such changes.

     José Deulofeu suggests the adverbials such as *educationally* and *globally* in the above example may be oddly placed sentence adverbials which should be set off by commas.

18.   The English examples used in this section (*afterwards, alongside, downstream, nearby, inland, onwards, outside, overland, uphill, upstairs)* show that like other lexical categories, Ps can be compounds. They are special in English in having left-hand heads.

classified as adverbs such as: *après, en haut, ici, là, demain,* etc. They provide an additional word order argument: like PPs but unlike short adverbs of time and frequency, these adverbs cannot appear without phonetic break between an Auxiliary and a Main Verb:

(23)   *L'auteur a (après/ ici/ en haut) rédigé son livre.*

Thus, the two subclasses of traditionally termed adverbs that might be considered as productive and open classes, namely those derived from As and the intransitive Ps of place and time in this section, have now been removed from the category of Adverbs. What remains under this rubric is a very heterogeneous closed class of mono-morphemic and uninflected modifiers.

The issue now has become, should this class remain in a grammatical category of "adverbs", or should this term be removed from this category inventory (of parts of speech) and reserved instead for use in discussing particular *sentence functions* (= grammatical relations), akin to terms like "subject" and "direct object"?

6. The failure of negative characterizations of "adverbs"

In traditional grammar, most parts of speech have *a definition in terms of observable and somewhat systematic properties*. The glaring exception is the category adverb, which is *not defined in terms of observable properties*. It is rather a sort of "elsewhere category," that includes any words that can enter syntax but are not in some other positively defined category. As a last resort for some defining criterion for "adverb", there has been a tendency to try to define them formally in negative terms. But these attempts, if they have any empirical content, all fail. Here are some dead-end proposals along these lines.

(24)   False claim #1: At least as a one-way implication, "An adverb is always a modifier."

But adverbs can be the highest lexical categories in a clause and not modify anything:

(25)   a. French : *Vraiment ! Encore ! Tout à fait. Jamais. Tout de suite. Davantage. Quand même. Doucement. Très bien. Pas si vite. Heureusement (que...)*
       b. English: *Quickly now to the river! Up, up, and away! There, there! Now, now! Faster! Once again! Never again! Forward!*

Another claim implicit in some definitions of parts of speech is that Adverbs can modify *any* category except Nouns or Pronouns:

(26) False claim #2: "Modifiers of Nouns (and Pronouns) must be APs and PPs but cannot be adverbs."

This statement is easily counter-exemplified in both French and English:

(27) a. Underlined Adverbs modifying French nouns:
    Presque la moitié de la classe a réussi l'examen.
    C'est _seulement_ le prix d'un journal que ça coûte.
    Même les plages sont souvent désagréables.
    On peut y participer avec _juste_ le billet d'entrée.
  b. Underlined Adverbs modifying English nouns:
    The customers _outside/ aboard_ need to register now.
    Only/ Even/ Just children will receive free gifts.
    Our neighbours _too_ keep coming back_._
    No candidate _here/ yesterday_ was qualified.

(28) a. Adverbs modifying French pronouns:
    Même eux/ Eux _aussi_ sont souvent désagréables.
    Celui _là-bas_ n'a pas le droit d'y être.
    Seulement lui a voulu parler avec nous _autres_.
  b. Adverbs modifying English pronouns:
    It was he _alone/ also/ too_ that visited that castle.
    Almost/ Just about anyone can find their way there.
    Those _nearby/ here/ ashore/ alone_ may want to visit a park.

In classical grammar, _adverbs are simply what are left over after other categories have been defined_ in terms of their own inflections (N, V, A, Pronoun) or the inflections they bring about (Prepositions on their object). So might "adverbs" be defined as the category that is _not inflected_?

(29) False claim #3: Adverbs can't be inflected.

In English, many adverbs can be graded with inflections:

(30) _The water at the beach got cold {sooner than last week/ faster today/ earlier than yesterday/ oftener than we like}._

Given the falsity of these three claims, it turns out that as a category or "part of speech", Adverbs have no definition at all, neither in terms of some characterizing property, nor even in terms of where they cannot appear; the term Adverb simply provides a name for a word that is _not in other grammatically defined classes_. This default status gives the appearance of a "complete system" to the set of traditional parts of speech. In reality, the term just masks the fact that the traditional parts of speech, as generally defined and still widely used, is no system at all. In particular, there is _no relation between "adverbs" and verbs_. Every traditional part of speech has some so-called adverbs that can modify it, but the statements that describe these modifications are not similar to each other, nor predictive or formalizable.

7. Closed class Adverbs: some are A though most are not

After adverbials derived from Adjectives and those that have the categorial properties of P are taken out of the category Adverb, those that remain, it turns out, *have no common distributional properties*, so that as a category name or "part of speech", the term Adverb is without content and useless.

Nonetheless, the resulting individual modifiers called adverbs play important roles throughout English and French syntax. Here follows in (31) a list of subclasses of mono-morphemic adverbs, organized according to some descriptive labels possibly useful for situating them in a systematic inventory of grammatical categories, such as the one that terminates this essay. As seen in the list, to the extent these items can be associated with larger phrases, they seem with few exceptions to be Pre-Modifiers of the head categories.

(31)   Closed grammatical classes of French/ English adverbs.
   a. Temporal or manner adverbs which are A, as justified by the Pre-Modification Hypothesis (2): French *tard, tôt, souvent, bien;* English *often, seldom, soon, well.*
   b. Grading pre-modifiers for the category A: see (1c).
   c. Intensifying pre-modifiers for the category P: French *droit, tout, bien;* English *right, straight,* and non-standard *clear.*
   d. Temporal particles that are not A: French: *déjà, encore, toujours, jamais;* English*: already, still, yet, always, ever, never, once, twice, thrice.*
   e. Focus particles F; see Auyagi (1998): *seule(ment)/ only, même/ even, aussi/ also, too.* The comparative study of Lafontaine (2018) suggests that non-adjectival French *juste* and English *just* should also be in this class.
   f. Deictic particles of time/ space: French *maintenant, puis, ici, là, aujourd'hui, demain, hier, avant-hier;* English *now, then, here, there, today, tomorrow, yesterday.*
   g. Discourse connectives: French *ainsi, donc, en plus, néanmoins, or, quand même;* English *furthermore, however, indeed, moreover, nonetheless, therefore, (even) so.*

It is essential to realize that these small classes do *not share any common* distributional *property*. Rather, each of them has its own syntax. Because of this, there is no justification for grouping them together into a putative category Adverb. Once they are given an appropriate label in a larger system of grammatical categories, the term "Adverb" becomes totally superfluous.

For a few words called adverbs such as French *souvent* or *tôt* in (31a)*,* if they can be pre-modified by one grading word, they can be modified by any of them, just as can gradable adjectives. Similarly, the English "adverbs" *well, often, seldom,* and *soon,* are just regular As with a full range of pre-modifying specifiers: *very well, how often, as soon as you want, too seldom,* etc. In light of the Pre-Modification Hypothesis (2), there is a rather minor restriction: a few specially marked A cannot receive a Secondary Feature of case, *i.e.,* they cannot modify or further specify Nouns. Otherwise, the items in (31a) are unexceptional As.

8. Remaining closed class modifiers: "Specifiers"

Current research in formalized grammar, and in particular in specifying its inventory of categories, is thus left with finding appropriate categories and analyses for the invariant modifying "ex-adverbs" in (31b-g). In the early decades of generative grammar, much fruitful research was made on analysing the Pre-Modifiers of Ns, V, and As. On Pre-modifiers of English A (31b), see for example Bresnan (1973) and Jackendoff (1977), whose analyses in part contrast and are in competition.

All these works refer to a formally descriptive concept related to the bar notation (i.e. the system of phrases constructed around the lexical and functional heads N, A, V, P, D, and I), namely the idea of Pre-Modifying "Specifiers" (often notated Spec) that are different for each of these six categories.

As examples we can start with the Specifiers of A in (31b), abbreviated here as SP(A). These are the morphemes listed in (1c): English *more, less, as, so, rather, how, too, very,* etc. A parallel but somewhat smaller class of SP(P) includes *right, straight, clear, deep (in the forest), far (beyond),* and some P used secondarily as SP(P): *down at the river, far beyond the river, off on a trip, out on a raft,* etc. as in (31c). For French SP(P) we find pre-modifiers such as *bien, tout* and *loin* in (32):

(32)   *Tu le trouveras <u>tout</u> à côté de la poste.*
       On va le situer <u>tout</u> contre le mur.
       Ce café se trouve <u>bien</u> en face de la cathédrale.
       Il a tiré <u>en plein</u> dans la cible.
       L'expédition a voulu pénétrer <u>loin</u> dans la jungle.

Most of the pre-modifying items for V in (1b), which were considered Specifiers in early work on the bar notation, have since Chomsky (1986) been taken to be rather pre-modifying *functional head* Is. If such auxiliaries are not Specifiers, the obvious and most plausible candidates for SP(V) are the aspectual and temporal particles given in (31d), English*: already, still, ever* and French: *déjà, encore, jamais,* etc.[19].

One established argument for these and also the focus particles (notated F) in (31e) being in SP(V), or at least under VP, is that under conditions of VP ellipsis in English (i.e. VP is unpronounced, following a pronounced finiteness constituent I), both types of particles are ungrammatical:

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19.   If these adverbs are the standard lexical items in the French SP(V), as suggested by their initial position in the French VP, there is also a second position immediately after them that hosts short constituents from a range of categories (Abeillé & Godard 2005) such as *beaucoup, peu, bien, rien* and *tout*: *Henri a maintenant tout rang*é *dans la chambre.*

(33)   *He won't help us, but Mary still must / must [*$_{VP}$* (*still) Ø].*
       Ann visits them frequently, though her mother never did/ didn't [$_{VP}$* (*ever) Ø].*
       She hates playing bridge; she only will / will [$_{VP}$* (*only) Ø] for money.*
       Bill has always wanted to gamble in Monaco, and this year he even might / might [$_{VP}$*
       (*even) Ø].*

If the temporal and focus particles were outside VP, they should be compatible
with empty VPs. But since they are inside it, the ellipsis of VP in (33) entails
their obligatory absence.

However, the focus particles (31e) seem not to be in the Specifier position,
but to its left, since across categories, they co-occur with SP(X): <u>*even right*</u> *by
the river,* <u>*only as*</u> *old as this house,* <u>*also already*</u> *left,* etc.

The categorical nature of the "adverbial" deictic particles is is not difficult
to discern. The synonymy of the English pairs in (34) seems obvious, with the
one word versions favoured by a principle of Economy. The English deictic
particles, we will see in the next section, are arguably in SP(D) rather than
D itself[20].

(34)   *now= this time; then= that time*
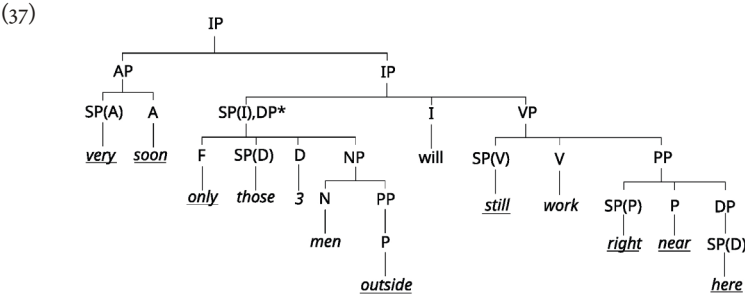   *here= this place; there= that place*

These particles furthermore allow and sometimes require empty or unmarked
Ps to precede them, as seen in (35).

(35)   *Let's have the meeting [*$_{PP}$* right [*$_{P}$* Ø] [*$_{DP}$* [*$_{SP(D)}$*) now]]].*
       Place it [$_{PP}$* [*$_{P}$* in/ Ø] [*$_{DP}$* [*$_{SP(D)}$* here]]].*

As a concrete illustration of the structures and categories proposed
here for closed class items, (37) is a tree for an English sentence with eight
underlined instances of traditionally termed "adverbs". These adverbs have
pair-wise nothing in common, in particular not their categories, and tradi-
tional grammar, using "adverb", fails to make any distributional predictions
about their unique and obviously constrained behaviours (Note that no two
of them can be interchanged).

(36)   *Very soon, only those 3 men outside will still work right near here.*

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20.   A decision about this positioning is not crucial for the overall discussion here.

(37)

```
                        IP
           ┌────────────┴─────────────┐
          AP                          IP
       ┌───┴───┐         ┌────────────┼──────────┐
     SP(A)    A      SP(I),DP*        I          VP
      │       │    ┌────┬────┬──┐     │      ┌────┼─────┐
     very    soon  F  SP(D)  D  NP   will  SP(V)  V     PP
                   │    │    │  ┌─┴─┐  │     │    ┌──┴──┐
                  only those 3  N  PP      still work SP(P) P  DP
                               men  │            │    right near SP(D)
                                    P                              │
                                    │                             here
                                 outside
```

Tree for an English sentence with eight underlined instances
of traditionnaly termed "adverbs".[21]

This discussion still leaves open what might be the members of SP(I) and SP(N),
as well as the general nature of syntactic features found in all the Specifier
categories. To situate and clarify these issues, I next extract and slightly revise
some results of Emonds (2019: Sections 3-4).

9. The nature of pre-modification sets

This essay has systematically compared the properties (4) of open lexical cate-
gories (Sections 2, 3, 5) with those of the grammatical, pre-modifying categories
(Sections 7-8). It is obvious that the memberships of these latter (closed) cate-
gories are much smaller, but the questions remain, how much smaller, and
why? What is the nature of the features in the two category types that leads to
this striking difference of category membership?

The nature of the two category types has I think been clarified in Emonds
(2000), to the effect that *only members of the four lexical categories* can (not
must) be endowed with *purely semantic features,* those with no role in syntax.
In fact, this idea was already proposed in Chomsky (1965).

(38) **Feature Types (Definitions).** A *Syntactic Feature* is one that appears in the syntactic
rules for a language (Chomsky 1965: 88, 143, 150-151). A *purely Semantic Feature* is one
that does not.

(39) **Syntactic Rule (Definition).** A *Syntactic Rule* is a formal statement that contributes to
characterizing the well-formed sequences of morphemes of a language.

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21.   The next section will show that the pre-modifiers of N must be divided into a functional category
head D and its Specifiers SP(D), following the results of Jackendoff (1977: Ch. 5) and Abney
(1987), so as to yield sequences such as *which three, those many, a few,* etc.

This difference between syntactic and purely semantic features provides a way to distinguish the two types of grammatical categories. We can suppose that there are many, many purely semantic and cognitive features (not used in specifying grammatical well-formedness), enough to differentiate what is now often estimated to be between 20,000-30,000 active open class lexical items for individual speakers. In contrast there are relatively few syntactic features as defined in (38). With these definitions, we can start to understand why the closed class functional categories have so few members.

(40)   **Closed Class Hypothesis.** Only members of the lexical head categories N, V, A, P can (not must) have purely Semantic Features (Emonds 2000: Ch. 3)[22].

It then follows from definitions (38) and (39) that any two distinct members of closed class categories differ by at least one syntactic feature *used in grammar*; because of this, no two closed class items should have identical syntax. With respect to at least one Syntactic Rule (39), they must act differently. Thus, among syntactic categories, *the four lexical categories are special* because, unlike closed class or "grammatical" items, they allow large memberships distinguished only by *purely semantic features*. This leads to what I think is a very central, but very little appreciated, theorem that can guide grammatical research[23].

(41)   **Theorem of Unique Syntactic Behaviour ("USB").** As a consequence of Hypothesis (40), any two members in functional categories, e.g. D, I, SP(X), have distinct syntactic behaviours**.**

To the extent that the prediction of USB is empirically borne out, it confirms the explanatory potential of Chomsky's definition (38) of Syntactic Feature and the Closed Class Hypothesis (40).

One rather transparent example of USB is the full suppletion of roots seen in irregular inflections such as French *bon/bien/meilleur, mal/pire, allons/vont* and English *good/better, go/went.* Such non-alliterative or "full" suppletion is allowed in these languages only in individual Closed Class lexical items.

Emonds (2000) coins the term "Synacticon" for the Closed Class Lexicon. Another widely used term is the Grammatical Lexicon of Ouhalla (1991). These

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22.   A related difference between phrases and functional categories, suggested to me in this context by José Deulofeu, is that phrases can enter into a range of different grammatical relations, whereas functional categories, both heads and specifiers, seem able to fulfil a single function, pre-modification.

23.   A-theoretical researchers often observe that closed class grammatical items behave differently, and then bemoan (or celebrate) what they take as their irregularity: "English is so irregular; every modal and auxiliary behaves differently." But this reaction is like a modern chemist regretting that every chemical element has unique chemical behaviour, due to each having a unique set of chemical features (of valence, number of neutrons, number of orbits, etc.) The fact is, given a scientific inventory of categories, unique behavior is what we expect.

terminological choices all underscore the main contrast with the Open Class Lexicon, Dictionary, or Encyclopedia.

10. The size of pre-modification sets

A number of such predictions are explored in Emonds (2019). One of the most interesting, since it is confirmed by decades of work by many researchers (cited in that paper) is that the pre-verbal functional head modifiers of English V, listed in (42), are all *grammatically unique*.

> (42)   The class of English auxiliaries in I: 20 members
> *is, are, am, was, were, ain't, do, have, will, would, can, could, may, might, shall, should, must, ought, need, dare*

Irregular open class items in the English Dictionary (*buy/ bought; goose/ geese*) can have 2 or 3 *alliterating* allomorphs. This restriction tolerates no exceptions, so it is not surprising that the finite copulas neither alliterate (*is* vs. *was*) nor appear in the syntactic V positions (while non-finite *be/ being/ been* do alliterate and are always in V positions). The finite copulas are thus Is, as in (42) but not Vs. In contrast, *do* and *have* are always Vs, as their inflections show, though unlike other English Vs, certain of their uses locate them in I.

In this section, I don't examine the methodology and many results of USB (41), referring instead to Emonds (2000 and 2019). I rather emphasize here a different correlate of combining USB with the Pre-Modification Hypothesis (2). It appears that the various closed class categories in distinct pre-modifying positions (as Specifiers or Functional Heads) is always roughly of similar size.

> (43)   Size of the Closed Class Lexicon, aka the Syntacticon
> In English at least, the membership in the Closed Class Categories seems to be between 20 and 30.

Restricting this section to English, the functional head category I that pre-modifies English Vs clearly conforms to this restriction, and it is not difficult to demonstrate the more general applicability of (43). A second good example is the class of traditionally termed "grading adverbs." This category has been used here to show that adjectives, adverbs formed from them (*slowly*, *cleverly*, *strangely*, etc.), and a few other traditionally named adverbs (*soon*, *well*, *often*, *early*, *fast*, etc.) are all in one lexical category A. In accord with the bar notation, the grading adverbs are here rechristened Specifiers of A, and their availability as pre-modifiers is the defining characteristic of what counts as an A[24].

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24.   In the lists following, the focus particles F are not included, as they pre-modify across categories in similar fashion.

(44)   **English grading adverbs in SP(A)**: 22-27 members
    a.   *very, so, too, enough, more, most, less, least, as, rather, quite, somewhat, this, that, how,*
         otherwise, real, pretty, damn, darn, awful, mighty, right (slang)*, hella* (slang).
    b.   Alternatively realized bound morphemes on A: *-er, -est*
    c.   *Still* is not a grading adverb but can precede AP.

Perhaps not strictly in conformity with USB (41), certain more general SP(A),
e.g. *very, real, pretty, damn, darn, awful* and *mighty,* may share the same syntax
(L. Veselovská, pers. comm.). However, I claim that if so, these items do not
differ in purely semantic features either, i.e. they are stylistic *free variants* and
otherwise synonymous. Outside of such variants, it is evident that each grading
adverb in (44) has its own syntax, e.g. taking *than-* or *as*-clauses, infinitives
containing gaps (*the chair is too heavy to lift)*, result clauses with *so, of*-phrases
with superlatives, etc.
       This study has also referred to Pre-Modifiers of P. Specifying which Ps a
given SP(P) can modify requires more research, especially as there are some
allowable combinations. But even so the number of pre-modifiers of P seems
somewhat less than that for other categories.

(45)   **English intensifiers in SP(P)**: 10+ members
       right, straight, almost, deep, far, up, down, off, back, away

The smaller membership of SP(P) is perhaps due to the limited number of
referential concepts expressible by open class Ps; in particular they are related to
locations on a spec-time grid, which are considerably less than possible references
in the open classes of V and A. For a kind of Kantian discussion of this factor
distinguishing P from N, V and A, see the concluding section of Emonds (1986).
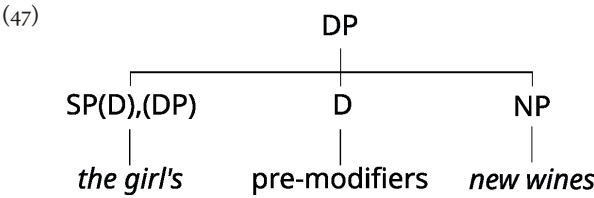   Syntactically, the least studied closed class "adverbial" pre-modifiers are
those that can precede V. In general, it is unsure how they should be grouped
into subclasses and what the possible combinations are.

(46)   **English pre-modifying adverbs in SP(V):** 20+ members
       already, still, yet, again, now, then, not, ever, never, always, soon, well, often, better, best,
       sooner, rather, almost, (not) quite

Rather than broad and vague questions about "adverbs", the issues that should be
formulated and solved about these modifiers concern item-particular properties
in syntactic rules using the tool of USB (41).
       The final closed category items to list are the Pre-Modifiers of Nouns.
Neither traditional nor generative grammar considers these to be adverbs,
but like Specifiers and Functional Heads they are subject to USB. As for their
categories, generative research now generally accepts the "DP Hypothesis" of
Abney (1987), to the effect that Noun Phrases as traditionally conceived should
be decomposed into a functional head D and its NP sister, whose head is the
open class lexical category N. Abney's arguments in his first three chapters

establish that the SP(D) position in many languages, including English but not French, can host *an overt subject* or "possessive" phrase, which is a sister of the functional head D and its NP complement.

(47)

```
                          DP
        ┌──────────────────┼──────────────────┐
   SP(D),(DP)              D                  NP
        │                  │                   │
    the girl's       pre-modifiers        new wines
```

Traditional Noun Phrases recast under the DP Hypothesis

Soon after Abney's structure (47) gained acceptance, questions arose concerning the two quite distinct and linearly ordered classes of Pre-Modifiers of Nouns discovered in Jackendoff (1977 : Ch. 5), which we can call Determiners and (Existential) Quantifiers. With paradigms from English and other languages, several authors (Ritter 1991, Giusti (1997), Veselovská 2001) argued, that the class Q, including the Numerals, has properties of heads rather than of Specifiers. In light of these arguments, I conclude that this class of Q/NUM in (48) below is generated under the head D in (47).

But essentially without argument, Abney's last chapter (1987: Ch. 4) and many others just assumed that the Determiners in (48) should rather occupy the D position, ignoring a strong argument stemming from Jackendoff's work, who had shown that these Determiners are in strict complementary distribution in English with possessive phrases, i.e. they compete for the same position. I think we are obliged to follow the empirical signposts, and so I conclude that the Determiners in (48) are in SP(D), while the Numerals and Existential Quantifiers in (49) are in D**:**

(48)   **English Determiners in SP(D),**: 26 members
the, this, that, these, those, every, all, both, each, any, no(ne), some, who(m), which, what, I, me, we, us, you, he, him, she, her, they, them.

(49)   **Numerals and similar Quantifiers in D**: 25 members
   a.   Free: *zero, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, dozen, hundred, thousand.* Bound: *thir-, twen-, -teen, -ty*
   b.   The quantifiers *many, few, several, much, little* have the syntax of numerals and not D (Jackendoff 1977: Ch. 5).
   c.   Grammatically, *thousand, million, billion, trillion, etc. zillion* are nouns in free variation, and *not* Ds.

For both these closed classes, their cardinality falls again into the range of 20-30 members, as indicated in (43)[25].

The English numerals 3 through 9 appear to have identical syntax, which might violate USB. These numerals nonetheless lack any purely semantic features as defined in (38), since the differences among them are due to arithmetic, which presumably has a separate mental status and mode of acquisition and are not part of syntax.

This section has now completed a survey of closed class syntactic categories in English, those that are not lexical categories[26]. Three of these classes, the Pre-Modifiers in SP(A), SP(P) and SP(V), are made up of what traditional grammar (and versions of formal grammar which uncritically accepts it) calls "adverbs". The material of this section, even though somewhat schematic, strongly suggests that the category adverb itself needs to be discarded and replaced by a more fine-grained system, say including the types of Specifiers. We should not refer to modifiers like *still* and *very* as "adverbs" any more than we refer to nouns like *child* and *courage* simply as "subjects" or "objects." These terms are relational and make sense only when such words are subjects of objects *of something*, in a given structure. Likewise, *still* and *very* are not just "adverbs"; rather they have the more restricted properties of their respective pre-modifier categories SP(V) and SP(A); That is, we are not saying anything unless we specify their *particular categories and sentence functions* as modifiers of V or A.

To conclude, I provide a Table that incorporates most of this essay's conclusions about categorial membership. The Table also uses results of some other research (Emonds 1985, 2000, 2019), to the effect that the open class lexical categories *each include* closed subsets that have distinct and unique syntactic behaviours[27].

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25. I don't list separately the compound pronouns such as *somewhere, anyone,* or *nothing,* and I take possessive pronouns to be irregular variants of the regular possessive suffix added to personal pronouns: *hers = her + z; whose = who + z; us + z = our,* etc.

26. A few categories have been left to the side (conjunctions, pronouns, emotive interjections), especially if they don't seem relevant for understanding items that have been called adverbs.

27. In the table, rows for Functional Category Heads are shaded while those for open class lexical heads are not; D is paired with N, and I with V. As argued in Emonds (1985: Ch. 7), the C of Chomsky (1985) is a positional variant of Ps lacking purely semantic features.

Head Category	Lexical Items lacking purely semantic features	Specifier Pre-Modifiers and their informal labels
D, perhaps better relabelled as Q	The Numerals and Quantifiers in complementary distribution. *zero, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, dozen, hundred, thousand, thir-, twen-, -teen, -ty -score, many, few, several, much, little*	SP(D) or Determiners: *the, this, that, these, those, every, all, both, each, any, no(ne), some, who, which, what, me, we, us, you, he, him, she, her, they, them.*
N (the closed subclass)	*one(s), other(s), people, thing, stuff, fact, …*(no purely semantic features)	SP(N): membership not clear at this time.
A (the closed subclass)	This closed subset of As lacks purely semantic features: *so, such, good, better, best, far, further, furthest, long, well, soon, often, …, the* full membership is not clear at this time.	SP(A)= Grading Adverbs *very, so, too, enough, more, most, less, least, as, rather, quite, somewhat, this, that, how, otherwise, real, pretty, damn, darn, awful, mighty*
P, (the closed subclass), + __DP	*to, from, for, with, of, by, at, in, out, on, off, up, down, until, since*	SP(P) or "Intensifiers": *right, clear, straight, far, almost, deep, up, down, off, back, away*
P, +__Ø	*in, out, on, off, up, down, back, away, together, -wise*	
P, +__IP	*that, if, whether, unless, lest, until, since, because*	Spec reserved for WH phrases (Chomsky 1986)
V (the closed subclass)	This closed subset of Vs lacks purely semantic features: *be, do, have, get, come, go, let, make, say put, need, dare, give, take, want, bring*	SP(V) or temporal particles: *already, still, yet, again, now, then, not, ever, never, always, rather, almost*
I	*is, are, am, was, were, ain't, do, have, will, would, can, could, may, might, shall, should, must, ought, need, dare*	Spec(IP) reserved for subject DPs (Chomsky 1986)

(50)   Tentative Closed Class Lexicon of English

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