

ADVERBS AND ADPOSITIONS: THE CINDERELLA CATEGORIES OF FUNCTIONAL GRAMMAR

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ABSTRACT

The article seeks to determine whether there is a category Adverb in the Functional Grammar (FG) lexicon of English. After a proposal that there are lexical manner adverbs is considered and rejected, all the other classes of adverbs are reviewed. This leads to the conclusion that there is a class of spatial and temporal adverbs in the FG lexicon. Similar conclusions had been reached in earlier work concerning adpositions. Following a brief consideration of temporal prepositions in English, the possibility is explored that the adverbs and adpositions in the lexicon of English could form a single category Ad. It is suggested that Ad can be given a functional definition, just like the three other lexical categories Verb, Noun and Adjective.

KEY WORDS: Functional Grammar, lexical categories, adverbs, adpositions.

RESUMEN

El objetivo de este artículo es determinar si existe una categoría Adverbio en el lexicon de una Gramática Funcional (GF) del inglés. Tras considerar y descartar la existencia de una categoría léxica de adverbios de modo, se analizan todas las demás clases de adverbios. Este análisis lleva a la conclusión de que existe una clase de adverbios espaciales y temporales en el lexicon de la GF. Conclusiones similares se han derivado de trabajos anteriores en relación con las adposiciones. Tras considerar brevemente las preposiciones temporales en inglés, se investiga la posibilidad de que los adverbios y las adposiciones en el lexicon del inglés puedan formar una única categoría Ad, que pudiera ser definida en términos funcionales al igual que las otras tres categorías léxicas —verbo, nombre y adjetivo.

PALABRAS CLAVE: Gramática Funcional, categorías léxicas, adverbios, adposiciones.

1. INTRODUCTION

Dik (1997a: 194) recognizes three categories of predicate in Functional Grammar (henceforth FG): nouns (N), verbs (V), and adjectives (A). These are distinguished with respect to their functional properties, which are operationalized as the respective default positions of each category in the functionally motivated underlying representation:

A Verbal predicate (V) is a predicate which is primarily used in predicative function. A Nominal predicate (N) is a predicate which is primarily used as the head of a term. An Adjectival predicate (A) is a predicate which is primarily used in attributive function.

As ever in programmatic FG proposals, these are etic distinctions. They may be emically different in any specific language. That is, there may be subcategories, for example a subcategory of verbal nouns within the category noun; or one or more of the categories may be absent from a specific language (e.g. in a language without adjectives).

Hengeveld (1992a; 1992b) has argued that etically there are in fact four categories of predicate, adding Adv(erb) to Dik's list. These are presented in a typological hierarchy: Verb > Noun > Adjective > Adverb, such that "a category of predicates is more likely to occur as a separate part of speech the more to the left it is in the hierarchy" (Hengeveld 1992a: 68). English is adduced as a language instantiating all four categories, and Dutch as a language lacking Adverb; no language could have Adverb but not Adjective. Despite Hengeveld's recognition of the category Adverb, it has received less attention in FG than other categories (there is for instance no entry for "adverb" in the index of either Dik 1997a or Dik 1997b).

The first purpose of this article is to invite this Cinderella to the ball. The second purpose is to turn the spotlight on the adposition, claiming that most representatives of this class of formatives are qualified to join the club of lexical categories, apparently adding a fifth category of predicate. The final purpose will be to consider whether adverbs and adpositions in English should be seen as sisters (but not ugly sisters!), to be subsumed under one category.

2. ADVERB IN ENGLISH: THE "MANNER ADVERB"

Let us begin by looking more closely at what is meant by "adverb," homing in on the emic system of English. Hengeveld's view of the adverb explicitly does not encompass the entire category but limits itself to the manner adverb, since it modifies the main predicate (1992a: 55). This immediately engenders a conceptual problem, since "manner adverb" does not identify a subset of forms in English, but rather invokes a particular use of certain adverbs; it is as though one were to recognize in the lexicon a category of "subject nouns" or "third-restrictor adjectives."

Be that as it may, we need to ask the general and ultimately more important question whether, in the lexicon of a language such as English, we should, as Hengeveld has asserted we must, recognize a category "Adverb." Our starting-point will be examples in which the adverb indicates the manner in which a State of Affairs (SoA) is carried out, since these have been taken as exemplary.

Hengeveld's example of such an adverb (which we will provisionally continue to call "manner adverb") is *well*, as in (1):

- (1) *The nice president sings well.* (Hengeveld 1992a: 56)



Manner adverbs, like many other kinds of adverb, are typically formed from adjectives by the addition of *-ly*. *Well* is generally recognized as one of the very few exceptions to this, and the only one that is a suppletive form, equivalent to *good* + *-ly*. Hengeveld's example is thus in this regard atypical. The evident regularity in English suggests that the formation of words such as *beautifully* should be treated as a matter of rule (with an appropriate exception for the suppletive form *well* and for those adjectives such as *fast* which convert to an adverb without suffixation):

(2) *beautiful* [A] > *beautiful* [A] + *-ly*

The question arises where this rule should be located. If we regard it as a predicate-forming rule, it provides no support for taking Adv as a lexical category of English—it would at best be a category of the Fund (Dik 1997a: 58). But if we see it as an expression rule, sensitive to the predicate-modifying position of the Adjective, there are again no repercussions for the lexicon.

The semantics of manner adverbs is property-assigning: They assign a property to a State of Affairs (for a refinement of this statement, see Mackenzie 1998). This is fully compatible with analysis as an adjective. Thus in (3):

(3) *Annette dances beautifully.*

the property 'beautiful', denoted in English by the adjective *beautiful*, is assigned to the dancing. This is clear from the truth-conditional equivalence of (3) to (4), as has been recognized since Annette was a *débutante* at Reichenbach's ball (1947: 306):

(4) *Annette's dancing is beautiful.*

This suggests, at least, that the underlying representation of (3) should show *beautiful* as an adjective.

Adjectives are defined as occurring prototypically as heads of restrictors. Various proposals, commencing with Vet (1986), exist in the FG literature to analyse adverbs as restrictors. Vet (1986) would analyse the predication in (3) as, in outline, (5):¹

(5) Pres e_i: [f_i: dance [V] (Annette)_{Ag}]_j: f_j: beautifully [Adv]

i.e. as "Annette dances such that the event of her dancing is beautifully." As I have already proposed, an adjectival predicate is sufficient for property-assignment, and will therefore immediately reformulate (5) as (5')

¹ In keeping with Dik (1997a: 63), all representations, also those quoted from other scholars, will be simplified in the sense that variables will not return as explicit arguments of the predicate in their scope.

(5) Pres e_i: [f_i: dance [V] (Annette)_{Ag}]: f_j: beautiful [A]

i.e. “Annette dances such that the event of her dancing is beautiful.”

Hengeveld (1992b: 40) has developed Vet’s stance, allowing adverbs to appear as restrictors on various phenomena in underlying representation, verb, adjective, adverb, predication, proposition, illocution and clause (cf. also Hengeveld 1997):

- | | |
|---|--|
| (6) Adverb ¹ (e.g. Manner, Degree) | |
| (f ₁ : verb: f ₂ : adverb ^{1V}) | ‘The tall boy played <i>clumsily</i> ’ |
| (f ₁ : adjective: f ₂ : adverb ^{1A}) | ‘The <i>extremely</i> tall boy played remarkably clumsily’ |
| (f ₁ : adverb: f ₂ : adverb ^{1Adv}) | ‘The tall boy played <i>remarkably</i> clumsily’ |
| Adverb ² (e.g. Time) | |
| (e _i : predication: f ₁ : adverb ²) | ‘The extremely tall boy played remarkably clumsily <i>yesterday</i> ’ |
| Adverb ³ (e.g. Attitude) | |
| (X ₁ : proposition: f ₁ : adverb ³) | ‘The extremely tall boy <i>certainly</i> played remarkably clumsily yesterday’ |
| Adverb ² (Illocutionary) | |
| (F ₁ : ILL: f ₁ : adverb ⁴) | ‘ <i>Honestly</i> , the extremely tall boy certainly played remarkably clumsily yesterday’ |
| Adverb ² (Textual) | |
| (E ₁ : clause: f ₁ : adverb ⁵) | ‘ <i>Finally</i> , the extremely tall boy honestly certainly played remarkably clumsily yesterday’ |

This proposal has two formally attractive aspects. Firstly, it permits a high degree of parallelism between the structure of terms and the structure of various layers in underlying representation, since the schema for terms, with stacked restrictors, is taken as the mould for all the layers:

(7) (variable: head: variable: 2nd restrictor)

Secondly, Hengeveld’s proposal renders the notion of satellite superfluous, thereby simplifying underlying representations in FG: All traditional satellites are re-analysed as restrictors.

The question must be posed, however, whether this reform yields adequate representations. It is to my mind doubtful whether the relationship between modified and modifier can always be characterized as one of restriction.² After giving

² Hengeveld (p.c.) has indicated to me that he now shares these doubts.



close consideration to this matter, Dik et al. (1990: 63) concluded that all layer-1 and some layer-2 satellites are restrictive, while some layer-2 and all layer-3 and layer-4 satellites are non-restrictive. They refer in this connection to earlier work by Hannay and Vester (1987), but do not indicate the representational consequences of their bipartition of satellites. In any case, Hengeveld's proposals would appear to be less than adequate for higher-layer modifiers, since these are additions to rather than restrictions upon what they modify.

What, then, of the lower-layer, restrictive modifiers such as manner adverbs? Dik (1997a) still regards these as manner satellites. Must we then conclude that representation as satellite and as restrictor are notationally equivalent where the modification is restrictive? Perhaps so, but representing the manner adverb as a restrictor has at least a definite disadvantage: It is not clear how the distinction, argued for at length by Dik (1997a: 226-228) between implied and non-implied satellites, could be made if all satellites were re-analysed as restrictors.

Manner satellites modify non-States (i.e. Actions, Positions and Processes; Mackenzie 1998). They are said to be implied because every non-State is carried out in some manner. This is revealed by the impossibility of asserting, denying or querying this fact (see (8)) and by the possibility of treating the manner as a discourse referent, as is shown by the definite, anaphoric term in (9):

- (8) a. **Annette danced in a manner.*
 b. **Annette danced, but not in a manner.*
 c. **Did Annette dance in a manner?*
 (9) *Annette danced. The way she did it was beautiful.*

Dik (1997a: 226-228) shows that the properties revealed in (8) and (9) do not apply to non-implied satellites, i.e. those with another semantic function such as Beneficiary:

- (10) a. *Annette danced for somebody.*
 b. *Annette didn't dance for anybody.*
 c. *Did Annette dance for anybody?*
 (11) ?*Annette danced. The person she danced for was delighted.*

The sequence in (11) does not involve anaphora in the same way as in (9): the interpreter must add the "inferential bridge" (Haviland and Clark 1974: 514) that Annette was dancing for somebody.

The special status of implied satellites is represented in FG by including them in the predicate frame of non-State predicates, but without the requirement that is normally placed on argument positions, namely that they should always be occupied by a term. It is their presence in the underlying representation, with appropriately indexed variables, that makes anaphoric reference possible. Non-implied satellites differ in being absent from the predicate frame; they are added, if required, by satellite insertion rules. It is not clear to me that there is any independent evidence for 'implied restrictors': Restrictors are in principle

always non-implied, i.e. added as and when communicative exigencies call for them.

The conclusion thus far must be that the English “manner adverb” is to be represented as an implied satellite, the head of which is an adjective (see also Samuelsdorff 1998: 275 for a similar conclusion). The predication in (3) would therefore be analysed in outline as:

(12) Pres e_1 : [f_1 : dance [V] ($d1x_1$: Annette [N])_{Ag} (f_1 : beautiful [A])_{Man}]

where the term ($d1x_1$: Annette [N])_{Ag} is an argument and (f_1 : beautiful [A]) a satellite. (12) is, however, still not a satisfactory representation. It has been argued by Mackenzie (1992), Olbertz (1998) and Mackenzie (1998) respectively that we require, alongside the various variables already recognized in FG for reference to various orders of entity, further variables for reference to “non-entities:” p for reference to places, t for reference to times, and m for reference to manners, respectively. Manners are in this view referents rather than semantic roles, as is borne out by the fact that the language possesses special forms for eliciting manners (*How?*) and for referring to them anaphorically and exophorically (*thus; like this/that*) and, perhaps most tellingly, the fact that they occur in equative predications such as (13):

(13) *The way Annette likes to dance is slowly.*

Manner-referring terms can appear as adverbs (e.g. *slowly*), but also as prepositional phrases (*in a beautiful way/manner/fashion*), where *way*, *manner* and *fashion* may be seen as alternative expressions of the underlying variable m . Note that the manner term is introduced by the preposition *in*, suggesting that its semantic function as a modifier of a SoA is Locative (used “metaphorically”); but, as in (13), the semantic function may also be Zero. Thus the predicational structure of (3) would be as in (14) —for full justification of this structure, see Mackenzie (1998):

(14) Pres e_1 : [[[f_1 : dance [V] ($i1m_1$: (f_2 : beautiful [A]))_{Loc}) ($d1x_1$: (f_3 : Annette [N]))_{Ag}]]

The preceding discussion leads me to conclude that if there is a category Adverb in English, then there is no subcategory “manner adverb.” It is therefore inappropriate to take “manner adverbs” as exemplary for adverbs in English, and Hengeveld’s (1992a; 1992b) identification of English as a language with manner adverbs must be rejected.

3. WILL THE TRUE ADVERBS PLEASE STAND UP?

It cannot yet be concluded that there is no category Adverb in the English lexicon. It will first be necessary to consider alternative candidates. Let us therefore examine, in turn, the major classes of adverbs recognized in the literature: degree

adverbs, conjunctive adverbs, attitudinal adverbs and spatio-temporal adverbs. In determining whether each of these classes of adverbs occur in the lexicon, we will be employing the following ordered criteria:

- (a) there is evidence that the words in the class share an identifiable function;
- (b) there is evidence that the words in the class have their own predicate frames;
- (c) there is evidence that the words in the class (unlike the putative manner adverbs) are not regularly derived from an existing part of speech, e.g. adjective.

If only criterion (a) is satisfied, the word class cannot appear in the Fund—the words in question are introduced by expression rules; satisfaction of criterion (b) will situate the class in the Fund; to enter that subset of the Fund identified as the lexicon, the word class must also satisfy criterion (c).

3.1. DEGREE ADVERBS

Degree adverbs are of three kinds (Downing and Locke 1992: 552): Those that express comparison, those expressing intensification and attenuation, and those expressing approximation. Let us consider each of these in turn.

I assume that adverbs of comparison (*more, most, less, least*) are introduced through a valency-changing predicate formation rule which can have, in the positive degree, either a synthetic or an analytic output: *pretty > prettier* or *more pretty than...* and in the negative degree, only an analytic output: *pretty > less pretty than...* I conclude that adverbs of comparison are non-lexical, arising through a predicate formation rule, and introduced by expression rules.

Adverbs of intensification and attenuation operate along a one-dimensional scale and are quantificational in nature, expressing the extent to which a property applies. Most of them can be roughly equated with percentages:

(15) <i>fully competent</i>	100%
<i>quite competent</i>	75%
<i>somewhat competent</i>	50%
<i>hardly competent</i>	25%

and thus are in effect mensural classifiers. I propose that, just like the mensural classifiers discussed by Dik (1997a: 166-168), they should be regarded as expressing operators:

- (16) (25% f: ... [A]) > *hardly, barely, scarcely, ...*, etc.

Other adverbs of intensification such as *very* and *extremely* and adverbs of attenuation such as *insufficiently* express a judgment that the property is present to a degree greater or less than some communicatively assumed norm. This, too, can be treated as an operator (which in certain languages can have morphological con-

sequences, cf. Spanish *muy guapa, guapísima*), just as non-numerical quantifiers like *many, some, few*, etc. are treated by Dik (1997a: 172-173) as operators:

- (17) *very competent* (+f_i: competent)
extremely competent (++)f_i: competent)
insufficiently competent (-f_i: competent)

Given the fact that these degree adverbs operate on a one-dimensional scale, they lack the richness of meaning to satisfy criterion (b); they will be represented as operators and introduced by expression rules.

Degree adverbs of approximation (*about, roughly, more or less, ...*), finally, are similarly quantificational in function, indicating an operation on an operator. I propose the following representation:

- (18) (i ± 20x; f_i: man [N]) *roughly twenty men*

These thus satisfy only criterion (a).

All in all, degree adverbs are thus unlikely candidates for lexical status, with a grammatical rather than a lexical role to play.

3.2. CONJUNCTIVE ADVERBS

Conjunctive adverbs (*likewise, furthermore, otherwise, however, ...*) fulfil a textual role, indicating a limited number of cohesive relations of various kinds (additive, adversative, resultative, etc.) between clauses or sentences (Halliday & Hasan 1976). They thus fulfil the first criterion, but since they lack denotation (*therefore* cannot for example be said to denote 'result') they cannot have their own predicate frame and thus are poor candidates for inclusion in a lexical class of adverbs. It would seem more sensible to regard them as marking relationships identifiable in the discourse context and thus as falling outside the FG of the clause. (See Kroon 1995 for an exemplary treatment of conjunctive adverbs in Latin.)

3.3. ATTITUDINAL ADVERBS

Attitudinal adverbs such as *certainly, allegedly, frankly*, etc. have been recognized as attaching, as satellites to layers 3 and 4 of the standard 4-layer representation of the clause (Dik 1997a: 297-299; 304-307). In parallel to the arguments adduced in 2 above for regarding manner adverbs as underlyingly adjectival, so we must conclude, in contrast to Hengeveld (1992b; cf. (7) above) that attitudinal adverbs express the assignment of an adjectivally denoted property to a proposition or a speech act respectively, as is indeed suggested by Dik's (1997a: 306) representation of his (52). Thus (19) will be represented as in (20):

(19) *John was allegedly guilty.*

(20) Decl E_i: [X_i : [Past e_i: f_i: guilty [A] (d1x_i: John (x_i))_{Zero}] (f_i: alleged [A])_{Report}]

These adverbs give no support to a lexical class of adverbs, since they appear as adjectives in the underlying representation. Those few attitudinal (or modal) adverbs that are not derived (e.g. *perhaps*, *maybe*) do not provide a strong basis for claiming a lexical class of adverbs, for they appear to be strongly grammaticalized for the expression of the modality “possibility” (cf. Nuyts 1992).

Attitudinal adverbs thus satisfy criteria (a) and (b), but fall down on criterion (c): They are to be found in the Fund, but not in the lexicon.

3.4. SPATIO-TEMPORAL ADVERBS

We are left with spatio-temporal adverbs like *back*, *outside*, *upstairs*, *down*, *aloft*, *far* and *soon*, *often*, *long*, *always*, *yet*. Not only do they share the function implicit in the appellation ‘spatio-temporal’, but these words clearly do have denotation (they denote places and times respectively) and can thus be given their own predicate frames. Indeed, as we will see in section 5, the issue of the valency of these predicates is of some importance. Finally, they satisfy criterion (c) in not being synchronically derivable from any other part of speech, although many are of course diachronically linked to nouns (*back*), noun phrases (*always*) or prepositional phrases (*aloft*).

Satisfying all three criteria, these are the words of English which best qualify as adverbs and which therefore justify regarding English after all as a language possessing four lexical word classes. These adverbs moreover have their own privilege of occurrence: They can appear either as a predicate, as in *Elvis is back* or *The meeting was yesterday*, or as a satellite to a State of Affairs (Layer 2), as in *Elvis has come back* or *We met yesterday*. On this basis we can reformulate the fourth of the four definitions given for the categories of predicate by Hengeveld (1992a: 37) as follows (cf. Dik’s 1997a definitions as given in section 1 above):

A Verbal predicate is a predicate which, without further measures being taken, has a predicative use *only*.

A Nominal predicate is a predicate which, without further measures being taken, can be used as the head of a term.

An Adjectival predicate is a predicate which, without further measures being taken, can be used as a modifier of a nominal head.

An Adverbial predicate is a predicate which, without further measures being taken, either has a predicative use or can be used as the head of a Layer-2 satellite.

3.5. ENGLISH DOES HAVE ADVERBS

There is thus every reason to assume a part of speech “adverb” in English (and *a priori* in other languages with a comparable set of predicates). This category is a fairly extensive but closed class; nevertheless, this fact does not argue against its

having the status of a category of lexical items, but it may well reflect the typologically marked or disfavoured status of the category “adverb.” Interestingly, the conclusion reached for English runs remarkably similar to that of Reesink (1990: 226) for adverbs in Papuan languages: “temporal and spatial satellites are clear and well-defined and ... each language has a number of specific adverbs to express these predicate satellites.” Other “adverbial notions,” including “manner,” are expressed differently in those languages.

4. ADPOSITIONS: A FIFTH CATEGORY?

Now that we have concluded that there is justification for a category of adverbs in English, the question arises whether we must recognize a fifth category, that of adpositions. Mackenzie (1992a, 1992b) argues for such an addition to the theory of FG (for discussion, both supportive and critical, see Connolly 1994, 1995; François 1996; Meijer 1998; Samuelsdorff 1998). My claim is that the spatial prepositions of English divide into two major classes: a small class of basically 5 grammatical prepositions, each of which realizes a semantic function (e.g. *Loc* > *at*), and a larger class of lexical adpositions; each of these has the status of a predicate, which takes the prepositional complement as its argument. The lexical prepositions and the attendant semantic function are co-realized as such prepositions as *aboard*. Thus (21) is represented as (22), where the operator “p” represents reference to a place (cf. Mackenzie 1992a: 269):

(21) *aboard the ship*

(22) $(d1p_i; f_i; \text{aboard [P]} (d1x_j; f_j; \text{ship [N]})_{\text{Ref}^p \text{Loc}})$

The proposal distinguishes 5 semantic functions, one of which (*Loc*[ative]) denotes stasis, the other four denoting aspects of kinesis (*So*[urce], *Path*, *All*[ative] and *Approach*). In (23), for example:

(23) *John walked from his flat via the park to the station.*

the terms *from his flat*, *via the park* and *to the station* reflect the semantic functions *Source*, *Path* and *Allative* respectively. Notice that this proposal relates to English. As Slobin (1996) has shown convincingly in a comparison of English and Spanish, not all languages can construct examples like (23) as naturally as English. I believe that a similar analysis is possible for temporal prepositions (which were not treated in Mackenzie 1992a, 1992b), with the difference that the semantic function *Approach* appears not to apply.³ In (24):

³ This is reflected in the ill-formedness of *towards Monday* in the sense of ‘approaching, but not necessarily reaching Monday’. If this expression is encountered, it will be understood as equivalent to *around Monday*.

(24) *The war lasted from Monday for six days until Saturday.*

there is a sequence of temporal expressions that directly parallel the sequence of spatial expressions in (23). This parallelism lies at the foundation of the localist hypothesis, which analyses many temporal expressions as resulting from an intricate and consistent metaphorical extension from space to time (Lyons 1977: 718-719). Thus, under this hypothesis, *from Monday* is a source term, *for six days* a Path term and *until Saturday* an Allative term. This metaphor is reflected linguistically in the fact that the semantic functions will often receive the very same expression with both spatial and temporal terms, as is true of *from* in examples (23) and (24). *Until/till* is of course closely linked in its history to the basic spatial-Allative preposition *to* and has exactly the same telic properties. In FG, the contrast between spatial and temporal terms, which does not reside in the semantic functions applied, will be represented by different variables: whereas, as shown in (22) above a spatial term refers to a place and therefore contains the variable “p,” a temporal term refers to a time and contains the variable “t” (Olbertz 1998: 122; *passim*). The parallelism emerges neatly from (25):

- (25) a. (d1p_i: f_i: London)_{so} *from London*
 b. (d1t_i: f_i: Monday)_{so} *from Monday*

The grammatical temporal prepositions are thus:

Loc	<i>at</i>
So	<i>from</i>
Path	<i>for</i>
All	<i>until/till; to</i>

All the other temporal prepositions of English appear to result, just like the corresponding spatial prepositions, from co-expression of one of the 4 semantic functions above and a lexical predicate. Thus, *after the meeting* in (26):

(26) *I need to talk to you after the meeting*

will be represented as (27a) or (27b):

- (27a) (i1t_i: f_i: after [P] (d1e_i: f_i: meeting [N])_{Ref_{Loc}})
 (27b) (i1t_i: f_i: after [P] (d1t_j: d1e_i: meeting [N])_{Ref_{Loc}})

to be read as “at a time such that (the time is) after the event ‘meeting’” and “at a time such that (the time is) after the time of the event ‘meeting’” respectively. I would propose that we need these two frames to account for the two possibilities manifest in (28a) and (28b), where *that* and *then* are both anaphoric:

- (28a) *I need to talk to you after that.*
 (28b) *I need to talk to you after then.*

After that and *after then* will be represented as (29a) and (29b) respectively:

(29a) $(i1t_i: f_i: \text{after [P]} (A \text{ dem } e_i)_{\text{Ref}})_{\text{Loc}}$

(29b) $(i1t_i: f_i: \text{after [P]} (A \text{ dem } t_j)_{\text{Ref}})_{\text{Loc}}$

During is a lexical preposition found in terms with the semantic function Path. Its argument is necessarily an event (e), not a time. Thus (30) will be represented only as (31):

(30) *during the meeting*

(31) $(d1t_i: f_i: \text{during [P]} (d1e_i: f_j: \text{meeting [N]})_{\text{Ref}})_{\text{Path}}$

because of the impossibility of **during then*; *during that* is fine. The distinction between *after* and *during* argues for each having its own predicate frame(s).

I believe there are various advantages to the analysis of English temporal prepositions presented here. Firstly, by employing the same semantic functions as have already shown their worth for spatial prepositions, we economize on the total list of semantic functions required: thus such semantic functions as Duration (Dik 1977a: 109) prove to be unnecessary. Secondly, the formalism offers a framework for analysing such complex prepositional phrases as *from after lunch* (Dik 1997a: 243, ex. 79b), namely as in (32), which runs parallel to Mackenzie's (1992b: 11) analysis of *from under the table*:

(32) $(d1t_i: f_i: \text{after [P]} (e_i: f_j: \text{lunch [N]})_{\text{Ref}})_{\text{So}}$

Thirdly, it becomes possible to organize the temporal prepositions of English into four sets, according as they are associated with the semantic functions Loc, So, Path and All. There are many fewer temporal prepositions than spatial ones, presumably because they relate to a one-dimensional time line, whereas the spatial prepositions have to deal with three dimensions. The choice of temporal preposition is furthermore often idiomatically determined by the nature of its complement: *at two o'clock*, but *on Monday* and *in January*. The major temporal prepositions, classified by semantic function, appear to be as follows:

Loc:	at, on, in; before, by; after
So:	from; since
Path:	for, through; during, over
All:	until, till; up to

This section has shown that there is good reason to assume a lexical category of adpositions. These monovalent predicates take a Reference argument and occur in terms with the variable "p" or "t," according as the reference is to a place or a time. They are expressed in English, together with the semantic function that applies to the term as a whole, as a preposition or prepositional group (*up to, from above, on top of, ...*).



5. ADVERBS AND ADPOSITIONS: SISTERS?

If it is established that there are indeed two categories of predicate to be added to Dik's (1997a) list, and that both adverbs and adpositions are fundamentally concerned with spatio-temporal reference, it becomes attractive to consider the possibility that there is such a close relationship between the two categories that it might be wise to conflate the two into one supercategory (for a preliminary discussion, see Mackenzie 1992b: 13). In effect, this is what was proposed in transformational-generative work by Jackendoff (1973, 1977) and Emonds (1976); and see Aarts (1997: 164 ff.) for the position that this represents an appropriate application of Occam's razor.

There are indeed several good reasons for doing so, at least for English. Firstly, there is a remarkably high degree of overlap between the two categories: Not only do they share the formal property of invariability and the semantic property of fundamentally denoting spatio-temporal notions, but there are many form-meaning correspondences that it would be almost perverse to ignore. Thus, while the adverb *below* means 'at some lower place', the prepositional phrase *below X* means 'at some place lower than X', and so on for many (but not all) prepositions. And just as many spatial prepositions can be preceded by *from* to yield a Source-meaning (*from outside the house*), so many (but not all) spatial adverbs allow the same (*from outside*). Finally, as is detailed for English by Downing and Locke (1992: 565-567; 585-586), the pre-modification of adverbs and adpositions is overwhelmingly identical: Both categories accept grading, attenuating, quantifying, descriptive/attitudinal and focusing/reinforcing modifiers (cf. *far back* and *far behind the others*; *straight ahead* and *straight ahead of us*, etc.). The exceptions notwithstanding, it seems appropriate to conflate the two Cinderella categories in a FG of English: the sole difference would then be that the Adverb is fundamentally avalent, while the Adposition is monovalent. Adopting the neutral abbreviation [Ad] for the new category, we will encounter lexical entries as follows:

back [Ad]
 before [Ad] (p_i)_{Ref}
 since [Ad] (t_i)_{Ref}

The difference between traditional adverbs and adpositions would be no greater than that between intransitive and transitive Verbs (which are taken in FG to represent one category) or between non-relational and relational Nouns (also taken to represent one category).

The avalence of the adverbs in question has been challenged by Meijer (1998), who adduces such examples as (33):

(33) *I've seen him before.*

She points out that a representation such as (34):

(34) Decl E_i : [X_i : [Pres Perf e_i : (f_i : see [V] ($d1x_i$: [+S,-A])_{Zero} ($d1x_j$: [-S,-A,+M])_{Ref})
 ($i1t_i$: f_i : before [Ad])_{Loc}]]

fails to bring out that *before* is understood as having a complement, i.e. “now.” This cannot be denied, of course, but the issue brings up the old FG question of how much to put into the representation and how much to leave to interpretation. The reference point for *before* is in this example given grammatically, by the Present tense of *have*—this becomes clear from the interpretation of the imagined complement of *before* in (35), i.e. “then:”

(35) *I'd seen him before.*

The tense of the verb gives the interpreter sufficient clues as to the reference point intended by the speaker; the latter is then free to use the avalent form, as in (33). Similar remarks apply to the spatial example (36):

(36) *Several instances are given below.*

where the textual location of the sentence indicates the reference point. Unsurprisingly, the avalent form can yield specific interpretations. This applies especially to the predicative use of the adverb (as in (37)), but generally not to its use as a satellite, as in (38):

(37) *Is your father in?* (“in the house, at home”)

(38) **He works in.*

These phenomena are entirely to be expected if adverb and adposition are indeed to be conflated into one lexical category. After all, certain verbs receive specific interpretations in their intransitive form that are absent in their transitive form (well-known cases are *drink*, *smoke*, *drive*). And just as there are monovalent Ads that lack an avalent congener, so there are transitive verbs that have no intransitive use: A familiar pair are *eat* (transitive and intransitive) and *devour* (only transitive).

A final remark concerns the definition of Adverb(ial predicate)s proposed in 3.4 above, and repeated here for convenience:

An Adverbial predicate is a predicate which, without further measures being taken, either has a predicative use or can be used as the head of a Layer-2 satellite.

If there is a category Ad, we would expect that this definition would also apply to monovalent Ads (i.e. adpositions). It is clear that the second member of the disjunction applies. After all, prepositional phrases, with a monovalent Ad as head, regularly occur as Layer-2 satellites, as in (39):

(39) *The beggar slept outside the house.*

In the FG-traditional analysis of prepositional phrases, term-predicate formation has to apply for them to have a predicative use. This would be an example of a “further measure being taken,” and would therefore fall foul of the proposed definition of Adverbial predicates. One solution would be to abandon the first

member of the disjunction and to require of Ads merely that they can be used as the head of a Layer-2 satellite. It is interesting to consider, however, that the addition of Ads to the lexicon opens up the possibility of their being used directly as predicates, i.e. suggesting a new analysis of, for instance, (40):

(40) *The beggar is outside the house.*

Rather than the standard analysis (41), cf. Dik (1997a: 207), we may now entertain the notationally simpler (42):

(41) Decl $E_i: [X_i: [\text{Pres } e_i: \{(d1p_i: f_i: \text{outside [Ad]} (d1x_i: f_j: \text{house [N]})_{\text{Ref}})\} (d1x_j: f_k: \text{beggar [N]})_{\text{Zero}}]]]$

(42) Decl $E_i: [X_i: [\text{Pres } e_i: (f_i: \text{outside [Ad]} (d1x_i: f_j: \text{house [N]})_{\text{Ref}}) (d1x_j: f_k: \text{beggar [N]})_{\text{Zero}}]]]$

If (42) were to be adopted, all Ads would then satisfy the proposed definition of Adverbial predicates.

6. CONCLUSIONS

All in all, the following conclusions seem justified:

- (a) English has four lexical categories, the three proposed by Dik (1997a) and a fourth, Ad, a conflation of the provisionally accepted categories Adverb and Adposition;
- (b) The basic meaning of the category Ad is spatial, with extensions to the temporal domain and beyond;
- (c) Predicates of the category Ad occur preferentially in terms characterized by the variables “p” and “t,” and these terms display considerable representational parallelism;
- (d) The suggestion is made that Ad may also occur as the major predicate of a predication;
- (e) Since English lacks a lexical category of manner adverbs, these should not be taken as exemplary of the category of adverbs;
- (f) Although certain satellites can be represented as restrictors, this representation has drawbacks and should be abandoned.

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