

THE FORMATION OF OLD ENGLISH ADVERBS: STRUCTURAL DESCRIPTION AND FUNCTIONAL EXPLANATION*

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1. Introduction

Although derivational morphology is central to the lexicon of Old English (Kastovsky 1992), the analysis of adverb formation at this diachronic stage of the English language has not received much attention. Apart from the brief discussions found in descriptive grammars, such as Mitchell (1985), Campbell (1987) or Lass (1994), the only work focusing on the formation of adverbs is Nicolai (1907). Nicolai classifies the non-basic adverbs of Old English on the grounds of the category of the base on which they are formed and the morphological process from which the derivative results. Within the sub-class of deadjectival adverbs, which constitutes the most heterogeneous group in adverb formation, Nicolai distinguishes the following patterns:

- (1) (based on Nicolai 1907)
 - a. adverbs derived from adjectives by means of *-e*: *bealde* ‘boldly’
 - b. adverbs derived from adjectives by means of *-lice*: *cwiculi:ce* ‘vigorously’
 - c. adverbs derived from previously derived adjectives: (adjective in *-sum*) *wilsumli:ce* ‘desirably’, (adjective in *-bæ:re*) *lustbæ:rli:ce* ‘pleasantly’, (adjective in *-fæst*) *stadolfæstli:ce* ‘steadfastly’, (adjective in *-wende*) *ha:lwendeli:ce* ‘salutary’, (adjective in *-we:ard*) *andweardli:ce* ‘presently’, (adjective in *-cund*) *innancundlice* ‘inwardly’ and (adjective in *-fe:ald*) *manigfealdli:ce* ‘in various ways’ (adjective in *-fe:ald*)

- d. adverbs ending in *-a*: *tela* ‘well’
- e. adverbs that coincide in form with the adjective from which they derive: *heah* ‘high’
- f. adverbs from the genitive singular of the adjective: *ealles* ‘all’
- g. adverbs from the dative plural of the adjective: *middum* ‘in the middle’
- h. adverbs from the neuter accusative of the adjective: *mæ:st* ‘most’
- i. adverbs from adposition plus inflected noun: *togedere* ‘together’
- j. adverbs from the comparative of the adjective: *æ:ro* ‘earlier’
- k. adverbs from the superlative of the adjective: *oftost* ‘most often’

In spite of Nicolai’s valuable contribution to the tradition of philological studies, his work does not incorporate basic methodological distinctions on which there is consensus in contemporary linguistic theory, such as the ones between synchronic and diachronic processes and the differences between inflectional morphology and derivational morphology. An important consequence of this is that there are instances in which the adverb cannot be formed by productive means in Old English, which is tantamount to saying that no affixes can be distinguished from the perspective of contemporary morphological analysis. Another shortcoming of Nicolai’s study is the lack of a clear-cut distinction between compounding and derivation. This author does not draw a dividing line between words and phrases, either. And, finally, his analysis is not exhaustive. As a general assessment, Nicolai’s analysis on the formation of adverbs in Old English calls for a thorough revision based on up-to-date linguistic theory. Moreover, an exhaustive analysis of adverb formation is also needed, since Nicolai’s inventories are not complete, as is clear from a comparison with any dictionary of Old English.

Given this state of the art, the aim of this article is to offer an exhaustive description of adverb formation in Old English as well as an explanation of the derivational processes that turn out adverbs in Old English, namely zero derivation, conversion, affixation and compounding. While affixation and compounding are used as in standard terminology, it must be borne in mind that zero derivation is used with the meaning of affixless derivation or derivation without inflectional affixes and that conversion represents a special case of zero derivation in which the target category is morphologically invariable. Throughout the discussion the position is held that conversion requires a Complex Word structure because inflection takes place at the immediate level of the word. Section 2 deals with descriptive questions, while section 3 engages in explanatory matters. Section 4 concludes by summarizing the main contributions of this research.

2. The description of adverb formation in Old English

The lexical database of Old English *Nerthus* (www.nerthusproject.com) contains a total of ca. 30,000 entries, or headwords, taken primarily from Clark Hall's *A Concise Anglo-Saxon Dictionary* (1996), and secondarily from Bosworth and Toller's *An Anglo-Saxon Dictionary* (1973) and Sweet's *The Student's Dictionary of Anglo-Saxon* (1976). I have followed the formalism adopted by *Nerthus* in two respects that deserve some comment. To begin with, I have opted for the colon to represent vowel length. And, secondly, I have kept the numbered headwords filed by *Nerthus* to maximize morphologically relevant contrast among predicates. As Martín Arista (2010a) explains, numbered entries have been used to account for different category, different morphological class or different alternative spellings, for predicates otherwise equal. For instance, *a:bu:tan* 1 'on, about, around, on the outside, round about' is an adposition and *a:bu:tan* 2 'about, nearly', an adverb. Similarly, *andfenge* 1 'acceptable, agreeable, approved, fit, suitable' is an adjective, whereas *andfenge* 2 'undertaker, helper, receptacle' is a noun. As for morphological class, *bese:on* 1 'to see, look, look round', for example, is a Class V strong verb, whereas *bese:on* 2 'to suffuse' qualifies as a Class I strong verb. In a similar vein, *byrdre* 1 'bearer, supporter' is a masculine noun whereas *byrdre* 2 'child-bearer, mother' is feminine. Regarding alternative spellings, two or more predicates receive a different number if they have different spelling variants, as is the case with *fo:dder* 1 'fodder, food; darnel, tares' with variants *fo:ddor* 1, *fo:ddur* 1, *fo:ter*, and *fo:dor*; *fo:dder* 2 'case, sheath' with variants *fo:ddor* 2 and *fo:ddur* 2; and *fo:dder* 3 'hatchet', with variants *fo:ddor* 3 and *fo:ddur* 3.

Nerthus yields a total of 1,654 adverbs (for the whole inventory, see the Appendix). The figure is comparatively low: adverbs represent around five percent of the lexicon, as opposed to nouns, which constitute, approximately, fifty percent of the lexicon, and adjectives and verbs, which count for twenty percent each. Focusing on the adverb, 138 adverbs have been found that cannot be derived by productive morphological means from any other word (or stem). The low figure of basic adverbs (138 out of 1,654) points out that the adverb constitutes a derived category. As an illustration of basic adverbs consider:

(2) *a:* 1 'always', *fægre* 'fairly', *hand* 2 'exactly', *na:nwilt* 2 'not at all', *si:de* 1 'amply'.

Turning to non-basic adverbs, 122 have undergone conversion processes. Conversion involves category extension (which brings about semantic modification) without formal change. On the other hand, zero-derivation takes place when there is a categorial extension that triggers a formal contrast between the source category and the target category. This formal contrast affects all forms

of the inflectional paradigm of the target category. The typology of zero-derivation phenomena in Old English includes (Martín Arista, fc-a): (i) zero derivation with explicit inflectional morphemes and without explicit derivational morphemes, as in *ri:dan* ‘to ride’ > *ri:da* ‘rider’; (ii) zero derivation without explicit or implicit morphemes, whether inflectional or derivational, as in *bi:dan* ‘to delay’ > *bi:d* ‘delay’; (iii) zero derivation without inflectional or derivational morphemes and with ablaut, as in *dri:fan* ‘to drive’ > *dra:f* ‘action of driving’; and (iv) zero derivation with ablaut and unproductive formatives such as *-m* in *fle:on* ‘to fly’ > *fle:am* ‘flight’.

Converted adverbs, according to the definitions just provided, are illustrated by (3). The target category is given between brackets:

- (3) *after* 2 ‘after’ (*after* 3, adjective), *e:aðe* 2 ‘easily’ (*e:aðe* 1, adjective), *forð* 1 ‘forth’ (*forð* 3, adjective), *onriht* 2 ‘aright’ (*onriht* 1, adjective), *wider* 3 ‘against’ (*wider* 1, adjective).

Conversion raises the problem of determining the direction of the process: either from the adverb or towards the adverb. The solution that I propose is based on the existence of inflection: whereas nouns and adjectives are highly inflected in Old English, adverbs are practically invariable with the exception of the expression of comparative or superlative grade, which is infrequent. I assume that conversion takes place from the more inflected to the less inflective class, that is, from nouns and adjectives to adverbs. This proposal is consistent with the well-attested diachronic evolution (Givón 2009:57) whereby inflectional morphology turns into derivational morphology. The adverb itself provides evidence for this view, given that some derivational suffixes are former inflectional morphemes, such as *-e* in *bealde* ‘boldly’ or *-es* in *ealles* ‘all’. Another argument in favor of this view can be found in verbal *Ablaut*, which produces preterit and past participle stems that, ultimately, are available as bases of derivation.

98 adverbs can be analyzed as having been converted from adjectives (e.g. *a:nli:pe* 2 ‘alone’, *wider* 3 ‘against’), whereas 4 adverbs only have been converted from nouns (e.g. *hinderling* 2 ‘backwards’, *sci:re* 1 ‘brightly’). Along with these, 19 adverbs have been found for which there is a nominal and an adjectival candidate for base of conversion (e.g. *si:d* 2 ‘late’, *twigilde* 2 ‘with a double payment’). When more than one category can be the base of conversion (typically, the adjective and the noun) the adjective is chosen for two reasons: firstly, because categorial polysemy is far more frequent between the adverb and the adjective (98 instances out of 122) and, secondly, because the adverb and the adjective are modifiers, the former at clause level and the latter at phrase level.

Affixation involves the addition of an affix to a base of derivation, with or without change of the lexical category of the input. Affixation is the most productive derivational process engaged in adverb formation (865 out of 1,654), that is to say, more than fifty percent of adverbs are formed by means of affixation, suffixation qualifying as far more productive than prefixation. To take prefixation first, there were 199 prefixal adverbs. An illustration follows in (4) in which the relevant prefixes are given between brackets:

- (4) *a:bu:fan* ‘above’ (*a:-*), *afterso:na* ‘soon, afterwards’ (*after-*), *a:ghwæ:r* ‘everywhere’ (*a:g-*), *a:tforan* 2 ‘beforehand’ (*a:t-*), *ande:ages* ‘eye to eye’ (*and-*), *bea:ftan* 1 ‘after’ (*be-*), *binnan* 2 ‘inside’ (*bi-*), *eal:feala* ‘very much’ (*eal-*), *eallrihte* ‘just’ (*eall-*), *emtwa:* ‘into two equal parts’ (*em-*), *forberendli:ce* ‘tolerably’ (*for-*), *foregle:awli:ce* ‘providently’ (*fore-*), *forðmid* ‘at the same time’ (*forð-*), *fre:aofstli:ce* ‘very quickly’ (*fre:a-*), *fulgeare* ‘quite well’ (*ful-*), *fullgeorne* ‘very eagerly’ (*full-*), *gehwæ:r* ‘everywhere’ (*ge-*), *incu:ðli:ce* ‘grievously’ (*in-*), *ofdu:ne* 1 ‘down’ (*of-*), *ofercall* ‘anywhere’ (*ofer-*), *onæ:r* ‘formely’ (*on-*), *sa:mha:l* ‘unwell’ (*sa:m*), *samli:ce* ‘together’ (*sam-*), *to:cyrca:werd* ‘towards church’ (*to:-*), *ðurhlonge* ‘continuously’ (*ðurb-*), *una:blinnendli:ce* ‘unceasingly’ (*un-*), *underbec* ‘backwards’ (*under-*), *u:pweard* ‘upwards’ (*u:p-*), *wida:ftan* 1 ‘from behind’ (*wid-*), *widerræhtes* ‘opposite’ (*wider-*), *ymbu:tan* 2 ‘around’ (*ymb-*).

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The most frequent prefixal pattern involves the negative affix *un-* (46 instances), followed by the affix *for-* (25 instances), *on-* (20 instances) and *a:-* (14 instances). Turning to suffixation, 666 adverbs are derived by means of this process. The figure is high not only in comparison with prefixed adverbs, but also with respect to the total number of adverbs: around forty percent of adverbs are suffixal. Instances of adverb suffixation include:

- (5) *elcora* ‘else’ (*-a*), *a:ftan* ‘from behind’ (*-an*), *a:fterwearde* ‘behind’ (*-e*), *ierraenga* ‘angrily’ (*-enga*), *andlanges* 1 ‘along’ (*-es*), *dy:flig* ‘brambly’ (*-ig*), *forbtige* ‘humbly’ (*-ige*), *bra:dlinga* ‘flatly’ (*-linga*), *a:fenli:ce* ‘in the evening’ (*-li:ce*), *be:cling* ‘backwards’ (*-ling*), *callmæ:st* ‘nearly all’ (*mæ:st*), *a:ftum* ‘after’ (*-um*), *a:nunga* ‘at once’ (*-unga*).

The commonest pattern of adverb suffixation makes use of the suffix *-li:ce* (401 instances), followed by the suffix *-e* (124 instances). It is worth mentioning that whereas prefixation produces fewer derivatives by means of more prefixes, suffixation turns out more derivatives with fewer suffixes (there are 666 suffixed adverbs derived by 13 different suffixes and only 199 prefixed adverbs derived by means of 31 different prefixes), which stresses the productive character of the

suffixes that derive adverbs in Old English. The suffixes illustrated at (5) include those corresponding to the nominative of weak adjectives *-an* (18 instances), the genitive singular of nouns *-es* (46 instances), the genitive plural of nouns *-a* (8 instances) and the dative of adjectives and nouns *-um* (40 instances). Although Campbell (1987) and Lass (1994) consider the adverbs displaying these suffixes a product of inflection, these authors also remark that their nominal and adjectival bases have taken on a new adverbial meaning. I turn to suffixation by means of *-an*, *-es*, *-a* and *-um* in Section 3.

64 compound adverbs have been found throughout the analysis, illustrated by the following instances, for which the base is provided between brackets:

- (6) (*ge*)*welhwæ:r* ‘nearly everywhere’ (*hwæ:r* 1), *hu:hwega* ‘somewhere about’ (*hwega*), *e:astlang* ‘to the east’ (*lang*), *æcermæ:lum* ‘by acres’ (*mæ:lum*), *e:astribte* ‘due east’ (*ribte*), *a:du:nweard* ‘downwards’ (*weard* 3), *bringwi:san* ‘ringwise’ (*wi:se* 2).

Approximately four percent of adverbs are formed through compounding. The patterns of adverb formation, by frequency, can be broken down as follows: noun+noun (31 instances), adverb+adverb (24 instances), noun+adverb (4 occurrences), adverb+adjective (3 instances) and noun+adjective (1 instance). There is one single case of three elements, *westnordlang* ‘extending north-westwards’, formed by adverb+adverb+adjective. Unexpectedly, the commonest pattern is the one formed by noun+noun (adverbs with base *mæ:lum*), followed by the more predictable pattern adverb+adverb.

The morphological analysis reported in this section has shown that the formation of Old English adverbs reflects the associative character of the lexicon of the language pointed out by Kastovsky (1992:294):

The OE [Old English-GMV] vocabulary thus is ‘associative’, the present-day English vocabulary is ‘dissociated’, because very often besides a Germanic lexical item there are semantically related non-Germanic derivatives, as in *mouth:oral*, *father:parental*, *sun:solar*.

Indeed, lexical creation relies on native resources to produce new lexical items, which brings about families of morphologically related words. The most productive pattern found in the analysis is the formation of adverbs by means of suffixation, particularly of the type *-lic* adjective > *-lice* adverb, which constitutes nearly twenty-five percent of adverbs.

Another lesson that can be learned from the morphological analysis that I have carried out is that the formation of adverbs is often gradual, that is, word-formation processes take place in a steplike manner and can, therefore, be

described by means of steplike derivational chains stating clearly input and output predicates (Torre Alonso *et al.* 2008). This is true of around eighty-five percent of derivations, while the other fifteen percent require hypothetical predicates between two attested forms so as to satisfy the aim of gradualness. Hypothetical predicates perform the function of path predicate, which links a source predicate to a target predicate. All the hypothetical predicates that have been defined are path predicates in the derivational chain of *-lice* adverbs, such as *a:blinnendli:c* in *a:blinnan* > *a:blinnend* > *a:blinnendli:c* > *a:blinnendli:ce* ‘indefatigably’. Other adverbs whose gradual analysis of derivation requires a hypothetical predicate include:

- (7) *æ:frelī:ce* ‘in perpetuity’, *borlī:ce* ‘very, extremely’, *cyrtenlī:ce* ‘elegantly’,
rihtgele:afli:ce ‘in an orthodox manner’, *unrihtba:d* ‘in an improper manner’.

When dealing with the degree of transparency displayed by adverb formation, it is worth commenting that 56 adverbs constitute bracketing paradoxes, given that it is not possible to determine the relative order of the morphological processes that the base has undergone throughout derivation. Examples in point are:

- (8) *forcu:ðe* ‘infamously’, *fullfremedli:ce* ‘fully’, *swa:ðe:abhwædre* ‘however’,
ungefe:rlī:ce ‘in civil war’, *u:pweardes* ‘up, upwards’.

In example (8), *forcu:ðe* ‘infamously’, can be analyzed in two different ways: as the suffixation [[forcu:ð][e]] or as the prefixation [[for][cu:ðe]]. The same option arises in the gradual analysis of *fullfremedli:ce* ‘fully’, which can be analysed as the suffixation [[fullfremed][li:ce]] or as the prefixation [[full][fremedli:ce]].

3. Old English adverb formation and the Layered Structure of the Word

After the morphological description provided by Section 2, Section 3 goes on to explain matters relating to adverb formation. The theoretical model of derivational morphology I have chosen is the Layered Structure of the Word, henceforth LSW. LSW (Martín Arista 2008, 2009, fc-a, b) is a contribution to the morphological theory of Role and Reference Grammar (Foley and Van Valin 1984; Van Valin and LaPolla 1997; Van Valin 2005) that shares with Word Syntax (Baker 2003; Lieber 1992, 2004) and other functional grammars (Dik 1997a, b) the generalization of syntactic rules and principles to morphology. Thus, morphology borrows from syntax a layered structure consisting of a Nucleus to which Arguments are added within a

Core, with which a Periphery can be associated. Each layer has its own operators and operator scope over the outer layers implies scope over the inner layers. Along with the identification of these semantic domains, in LSW the interaction between syntax and morphology is accounted for in terms of projections and constructions: morphological features are projected and, if necessary, percolate in morphological constructions that specify functions in the Simplex Word and the Complex Word. A simplex Word can be broken down into a Nucleus with its derivational and inflectional operators, whereas a Complex Word consists of a Nucleus with its lexical constituents and its derivational and inflectional operators. In other words, the Complex Word is syntactically and semantically motivated, whereas the Simplex Word is semantically motivated only. Categorial features are primitives of description and explanation in the sense that they are not derived and, moreover, some lexical features are derived from them. For example, the affix that performs the function of Periphery of the Complex Word *disbeliever* shows up in the Prefield while the one that functions as Argument takes up the Postfield:

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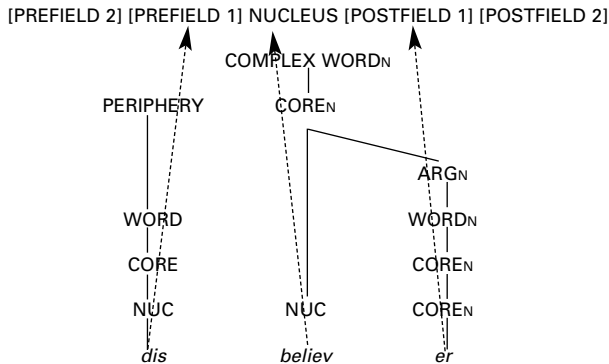


FIGURE 1: Linking meaning-form in the Complex Word

Notice that the arrows in Figure 1 represent the linking meaning-form, from the exocentric morphological construction in which the relevant features are projected from the Argument and percolate to the Core (thus the categorial feature N) to the language-specific morphological template consisting of pre-nuclear and post-nuclear slots that are available for lexical arguments. In a nutshell, the LSW represents elements which can be linked to syntax as lexical constituents in the constituent projection, and elements that cannot be linked to syntax as lexical operators in the operator projection. Grammatical operators at Word level are responsible for inflection.

Whereas tree diagrams constitute monostratal representations of the kind adopted by functional theories of language, derivational chains like the ones shown in (9) are governed by the principle of steplike morphological representation. The major Old English word-formation processes of zero-derivation, conversion, prefixation, suffixation and compounding are illustrated. Square brackets represent derivation (affixation and compounding), round brackets indicate zero-derivation or conversion, and curly brackets are used to account for inflection:

(9) (from Martín Arista 2010 a:8)

- a. [(acan)_V (ece)_N]_N
zero-derivation, *ece* ‘pain’
- b. [(su:ðerne 1)_{Adj} (su:ðerne 2)_{Adv}]_{Adv}
conversion, *su:ðerne 2* ‘southerly’
- c. [[æfter]_{Aff} [(gengan)_V (genga)_N]_N]_N
prefixation, *æftergenga* ‘follower’
- d. [[[a:]]_{Aff} [belgan]_V]_V {a:bolgen}_{Adj}]_{Adj}]_{Adj} [nes]_{Aff}]_N
suffixation, *a:bolgennes* ‘irritation’
- e. [[[sweord]_N [(wyrcean)_V (wyrhta)_N]_N]_N
compounding, *sweordwyrhta* ‘sword-maker’

In the remainder of this section I apply the framework of LSW to the formation of Old English adverbs in order to explain the phenomenon under scrutiny as well as to contribute to the development of this theoretical model of derivational morphology. Beginning with conversion, inflection takes place in the Word layer and consequently, conversion affects the Nucleus and the Core of the Word, in such a way that the categorial feature of the Nucleus (source category) is replaced by that of the Core (target category). A case in point is rendered by Figure 2:

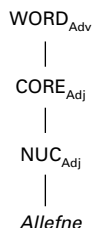


FIGURE 2: Conversion as Simplex Word

Conversion does produce complex words in LSW. As I have remarked above, complex words result from the insertion of lexical arguments (syntactic and semantic motivation), not from the insertion of lexical operators (semantic motivation of derivation) or grammatical operators (inflection). This view poses the problem of the motivation of the categorial label in Figure 2, which changes from Adj (adjective) to Adv (adverb) without any formal or functional justification, apart from the category of the derived word. I propose, instead, to explain conversion as the insertion of a word structure into another word structure, which may be counted as a structural and functional reason why the categorial label changes. This requires a modification of the definition of Complex Word in the LSW: a Complex Word is syntactically and semantically motivated, either by the insertion of lexical arguments into argumental slots or of a Simplex Word into the Nucleus. The representation of conversion as giving rise to a Complex Word is given in Figure 3:

COMPLEX WORDAdv

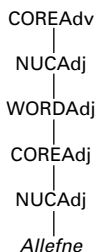


FIGURE 3: Conversion as Complex Word

This representation has two advantages. Firstly, it is parallel to those of affixation and compounding, where the node Complex Word dominates the node Word, which, in turn, directly dominates the element that triggers the morphological process. In Figure 3, similarly, Word causes category change and is dominated by a Complex Word displaying the label of the target category. In the terminology of LSW conversion is an endocentric morphological construction, given that the categorial feature is projected from the Nucleus and cannot percolate from lexical arguments showing up in Argument or Periphery position. And, secondly, the representation of conversion as a Complex Word has the additional advantage of allowing for a unified representation of adverbs formed by inflectional means, referred to in Section 2, where they have been discussed under the label of suffixation. In seeking an explanation of this phenomenon, however, the fact cannot be ignored that, whereas these affixes may constitute derivational means in synchronic analysis, they remain inflectional in a more diachronically oriented

approach. In line with this, Campbell (1987) and Lass (1994) consider a product of inflection the adverbs ending with the nominative of weak adjectives *-an*, the genitive singular of nouns *-es*, the genitive plural of nouns *-a*, and the dative of adjectives and nouns *-um*, but these authors also remark that their nominal and adjectival bases have taken on a new adverbial meaning. The analysis of conversion as a Complex Word guarantees that no relevant aspect is overlooked while merging synchronic (productive) and diachronic (recoverable) information. Indeed, the constituent projection of the LSW displays the synchronic process of class conversion, whereas the operator projection presents the diachronic process of inflection. This is represented by Figure 4.

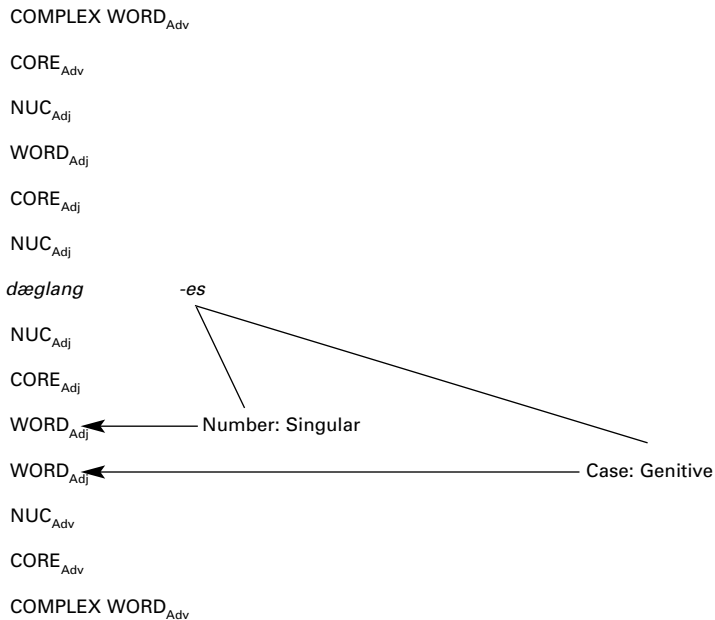


FIGURE 4: Inflection and conversion in Complex Word

We are now in a position to refine the new definition of the Complex Word in the LSW. As I have remarked above, inflection is dealt with at Word level in the LSW. Assuming that all Word nodes are inflected, a Complex Word can also be morphologically motivated by the insertion of an inflected Simplex Word into a structural position. This provides a more principled motivation of conversion than stating that conversion is the insertion of a word structure into another word structure.

Turning to affixation, this process is always endocentric because it does not involve lexical argument insertion. From the point of view of structural complexity, affixation in adverb formation requires Complex Word tree diagrams for morphological and semantic reasons. With regard to morphology, I have just proposed that conversion is suitably represented by means of a Complex Word, which applies to the conversion from words with both overt and covert inflection. It would be inconsistent, therefore, to analyze affixation, which adds an explicit derivational morpheme, in the Simplex Word as well as to deal with conversion, which lacks derivational marking, in the Complex Word. In semantics, it is often the case that adverbs are derived from adjectives in such a way that the change of meaning is predictable and regular, as in *a:metendlic* ‘limited’> *a:metendlice* ‘in a limited way’. In this way, an operator with scope over the Complex Word may be responsible for meaning change.

Whereas the conversion and affixation of adverbs project endocentric constructions, compound adverbs occur in endocentric and exocentric constructions. In endocentric constructions the morphological feature of category is projected from the adverbial Nucleus while the category of the Complex Word is assigned by Nucleus of the Word. This entails that there is projection of the features up the layered structure of constituents but there is no percolation. Endocentric constructions are mainly of the type adverb+adverb (24 instances) and, less frequently, of the type noun+adverb (4 instances). Figure 5 represents an endocentric compound:

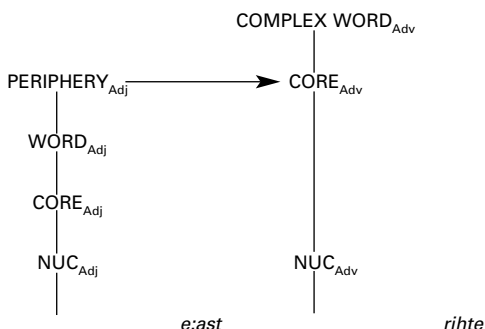


FIGURE 5: Endocentric adverbial compound

On the other hand, in the exocentric construction the category of the Complex Word node is assigned by the Adjunct of the compound, which is realized by a non-nuclear element. In this type of construction there is, consequently, percolation of the categorial feature from a non-nuclear element to the nuclear element.

Exocentric constructions are not very frequent and fall into the type adverb+adjective (4 instances). An instance of an exocentric construction in adverbial compounding is shown by Figure 6:

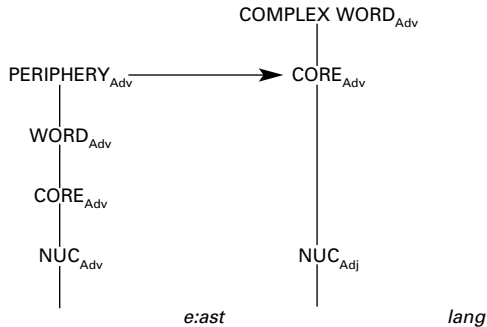


FIGURE 6: Exocentric construction in compounding

As has been pointed out at the beginning of the section, the distinction between endocentric and exocentric morphological constructions (Martín Arista 2009) is based on constituency, or, more specifically, on the notions of hierarchy (there are heads and non-heads in morphological constructions) and dependence (there are dependents and non-dependents in morphological constructions). The problem arises, however, of how to cope with compound adverbs whose category cannot be projected from any categorial label, or from the Base of the Adjunct. Throughout the analysis, I have come across one instance of adverbial compound with nominal Adjunct and adjectival Base (*ge:arlanges* ‘from a year’) and 31 instances of adverbial compound with nominal Adjunct and Base (e.g. *æcermæ:lum* ‘by acres’, *ge:armæ:lum* ‘year by year’, *ðre:gma:lum* ‘at times’). The LSW in its present state does not make provision for these instances because the categorial label of the top node of the tree diagram for the compound cannot be projected or percolated. The solution that I propose in this respect is to assign category at Complex Word label (see Figure 7), but a distinction has to be made between syntactic endocentricity and morphological endocentricity. The former turns up when there is feature percolation. The latter is the case when a morphological feature has to be inserted in the Complex Word layer, as in Figure 7. The operator projection only is given. Notice that, as I have remarked above, categorial features constitute primitives of description and explanation, in such a way that other morphological and lexical features derive from them:

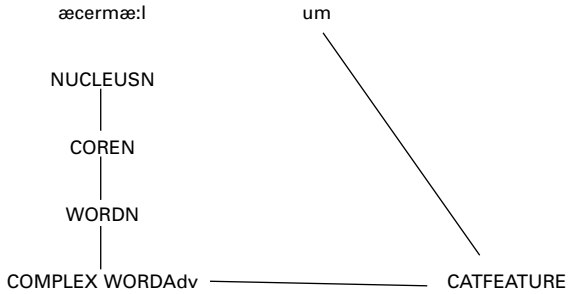


FIGURE 7: Morphological exocentricity in the operator projection

4. Concluding remarks

To sum up, an exhaustive morphological analysis of the Old English adverb has shown that this lexical class is mainly derived and that the direction of derivation is more often from adjective to adverb. An exhaustive analysis on the grounds of unit and process is offered in the Appendix. In the explanatory section of this journal article I have applied the LSW to the formation of adverbs in Old English and reached the conclusion that, whereas this morphological model provides a suitable framework for integrating synchronic and diachronic analysis as well as for allowing the interaction of morphology and syntax by means of generalizations based on lexical argument insertion, it does not deal accurately with conversion. Indeed, it has been shown that an analysis of conversion as giving rise to a Complex Word has advantages not only for conversion itself but also for a principled explanation of derivation by inflectional means. It has also been stressed that the notion of exocentricity held by the LSW is syntactic because it is concerned with the properties of hierarchy and dependence in the insertion of lexical arguments into Word structure. The existence of compounds whose morphological features cannot be projected from either their Base or their Adjunct requires a distinction between syntactic exocentricity (resulting from the percolation of morphological features) and morphological exocentricity (which takes place when a morphological feature has to be inserted at Complex Word level).

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Notes

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Works cited

- BAKER, M. 2003. *Lexical Categories: Verbs, Nouns and Adjectives*. Cambridge: Cambridge University Press.
- BOSWORTH, J. and T. N. TOLLER. 1973 (1898). *An Anglo-Saxon Dictionary*. Oxford: Oxford University Press.
- CAMPBELL, A. 1987 (1959). *Old English Grammar*. Oxford: Oxford University Press.
- CLARK HALL, J. R. 1996 (1896). *A Concise Anglo-Saxon Dictionary*. Toronto: University of Toronto Press.
- DIK, S. 1997a. *The Theory of Functional Grammar 1*. Berlin: Mouton de Gruyter. Edited by Kees Hengeveld.
- . 1997b. *The Theory of Functional Grammar 2*. Berlin: Mouton de Gruyter. Edited by Kees Hengeveld.
- FOLEY, W. and R. VAN VALIN. 1984. *Functional Syntax and Universal Grammar*. Cambridge: Cambridge University Press.
- GIVÓN, T. 2009. *The Genesis of Syntactic Complexity*. Amsterdam: John Benjamins.
- KASTOVSKY, D. 1992. "Semantics and vocabulary". In Hogg, R. (ed.) *The Cambridge History of the English Language I: The Beginnings to 1066*. Cambridge: Cambridge University Press: 290-408.
- LASS, R. 1994. *Old English. A historical linguistic companion*. Cambridge: Cambridge University Press.
- LIEBER, R. 1992. *Deconstructing Morphology*. Chicago: University of Chicago Press.
- . 2004. *Morphology and Lexical Semantics*. Cambridge: Cambridge University Press.
- MARTÍN ARISTA, J. 2008. "Unification and separation in a functional theory of morphology". In Van Valin, R. (ed.) *Investigations of the Syntax-Semantics-Pragmatics Interface*. Amsterdam: John Benjamins: 119-145
- MARTÍN ARISTA, J. 2009. "A Typology of Morphological Constructions". In Butler, C. and J. Martín Arista (eds.) *Deconstructing Constructions*. Amsterdam: John Benjamins: 85-115.
- . 2010a. "Building a lexical database of Old English: issues and landmarks. In Considine, J. (ed.) *Current projects in historical lexicography*. Newcastle: Cambridge Scholars Publishing: 1-33.
- . 2010b "Lexical negation in Old English". *NOWELE-North-Western European Language Evolution*, 60/61: 89-108.
- . "Morphological relatedness and zero alternation in Old English". In Butler, C. and P. Guerrero (eds.) *Morphosyntactic Alternations in English*. London: Equinox. (Forthcoming-a)
- . Adjective formation and lexical layers in Old English. *English Studies*. (Forthcoming-b)
- MITCHELL, B. 1985. *Old English Syntax* (2 vols.). Oxford: Oxford University Press.
- NICOLAI, O. 1907. *Die Bildung des Adverbs im Altenglischen*. Kiel: H. Fiencke.
- SWEET, H. 1976 (1896). *The Student's Dictionary of Anglo-Saxon*. Cambridge: Cambridge University Press.
- TORRE ALONSO, R., J. MARTÍN ARISTA, A. IBÁÑEZ MORENO, E. GONZÁLEZ TORRES, and L. CABALLERO GONZÁLEZ. 2008. "Fundamentos empíricos y metodológicos de una base de datos léxica de la morfología derivativa del inglés antiguo". *Revista de lingüística y lenguas aplicadas*, 3:129-144.
- VAN VALIN, R. 2005. *Exploring the Syntax-Semantics Interface*. Cambridge: Cambridge University Press.
- VAN VALIN, R. and LAPOLLA, R. 1997. *Syntax: Structure, meaning and function*. Cambridge: Cambridge University Press.

Appendix: Basic And Derived Adverbs In Old English

Basic adverbs (137)

a: 1, *æ:dre* 2, *æ:fre*, *æ:ghwæder* 1, *æ:ror* 1, *æt* 2, *a:hwæder* 2, *a:rweorde* 1, *betwe:onan* 2, *betwux* 2, *binne* 2, *blyde* 1, *bufan* 2, *bu:tan* 2, *e:ac* 1, *ealneg*, *e:astweard*, *efne* 1, *eft* 1, *elcor*, *ellor*, *fegre*, *feorran* 1, *feorde*, *for* 2, *forne* 1, *forweard* 2, *ge:a*, *geador*, *gearwe* 1, *(ge)fyrn*, *ge:o*, *geond* 2, *geostrā*, *ge:se*, *gi:et*, *hadre*, *ha:dre*, *hand* 2, *beonon*, *be:r* 1, *bider*, *bindan*, *blu:tre*, *hu:*, *bu:ru*, *hwæ:r* 1, *hwanon*, *hwarne*, *hwega*, *hwe:ne*, *hwergen*, *hwider*, *hwidre*, *hwonne*, *hwy:* 1, *ilce*, *inder*, *inn* 2, *ionna*, *la:* 1, *læ:s* 3, *late*, *lofte*, *lofton*, *lungre*, *ly:thwo:n*, *mid* 2, *na:*, *næ:fre*, *næ:nig*, *næs* 1, *na:nwibt* 2, *na:wa*, *na:we:rn*, *ne* 1, *nealles*, *nearwe*, *neodan*, *nese*, *nic*, *nu:* 1, *nu:na*, *of* 2, *ofer* 2, *oft*, *on* 2, *rihte*, *same*, *samen*, *samod* 1, *scearpe* 1, *si:de* 1, *simbel* 1, *simble*, *sne:ome*, *sti:de* 1, *sundor*, *swa:* 1, *tela*, *tinge*, *to:* 2, *to:hwega*, *tulge*, *tuwa*, *twa:*, *twibo:te* 1, *ða:* 1, *ðær* 1, *ðæs*, *ðæt* 1, *ðanon*, *ðe:ah* 1, *ðe:ana*, *ðenden* 1, *ðicce* 2, *ðider*, *ðon* 1, *ðriwa*, *ðurh* 2, *ðurhu:t* 2, *ðus*, *ðy:*, *ufor*, *under* 2, *unweorð* 2, *unwierde* 1, *u:p* 1, *weard* 3, *we:as*, *wel* 1, *west*, *wi:deferhð* 2, *wiht* 2, *wi:se* 2, *wiðufan*, *ymbe* 3

Converted adverbs (123)

æfter 2, *a:nig* 3, *ær* 1, *ætrihste* 2, *allefne* 2, *a:n* 2, *a:ngilde* 3, *a:nli:epig* 2, *a:nli:pe* 2, *a:nwille* 2, *a:wibt* 2, *bli:ð* 2, *bre:me* 2, *ce:ne* 2, *clæ:ne* 2, *de:ore* 2, *e:ast* 2, *e:ade* 2, *eall* 2, *earfode* 3, *e:ce* 2, *edni:we* 2, *efen* 2, *efene:ce* 2, *endemest* 1, *enge* 2, *eornoste* 2, *fæ:cne* 2, *fæ:le* 2, *fæ:a* 3, *fela* 2, *feorr* 2, *forane* 2, *fore* 2, *foreweard* 4, *forð* 1, *fordweard* 3, *fram* 2, *fre:cne* 3, *fre:olslic* 2, *Fresisc* 2, *full* 2, *fulne:ah* 2, *(ge)bli:de* 2, *gede:fe* 2, *gebende* 2, *(ge)lo:me* 2, *ge:n* 1, *geno:g* 2, *gesi:ene* 2, *(ge)tyng* 2, *gewealden* 2, *ha:m* 2, *he:ah* 2, *biderweard* 2, *binder* 2, *binderling* 2, *hnesce* 3, *hrade* 2, *hwæt* 1, *hwathwugu* 3, *hwæder* 2, *hwo:n* 3, *inne* 1, *inweard* 2, *let* 3, *li:de* 2, *lustbære* 2, *ly:t* 1, *ly:tel* 2, *ly:ðre* 2, *mæ:te* 2, *micel* 2, *middeweard* 1, *milde* 2, *mildelic* 2, *mirce* 2, *myrge* 2, *na:ht* 3, *ne:adwi:s* 2, *ne:ah* 2, *ni:we* 2, *nibterne* 2, *nider* 1, *norð* 2, *norde:ast* 2, *norðweard* 2, *onriht* 2, *ormæ:te* 2, *sci:re* 1, *se:l* 2, *si:ð* 2, *sli:de* 2, *smylte* 2, *so:fte* 2, *stille* 2, *sum* 3, *su:ð* 2, *su:ðerne* 2, *su:ðwest* 2, *swegle* 2, *swilce* 1, *to:heald* 2, *to:weard* 3, *twigilde* 2, *ðrigylde* 2, *ðri:st* 2, *ufan* 1, *unde:ore* 2, *undierne* 2, *unc:ade* 2, *ungefe:re* 2, *ungemæ:te* 2, *ungemetete* 2, *ungesce:ad* 3, *unbi:ere* 2, *unne:ah* 2, *unsy:fre* 2, *u:t* 1, *weorce* 2, *westweard* 1, *wilde* 2, *wiðer* 3

Prefixed adverbs (199)

a:- (14) *a:bu:fan*, *a:bu:tan* 2, *a:du:n* 1, *a:du:ne*, *a:flote*, *a:hwenne*, *a:hwæ:r*, *a:hwergen*, *a:hwider*, *a:hwanan*, *a:ni:hst*, *a:riht*, *a:weg*, *a:wo:h*

æfter- (1) *æterso:na*

æ:g- (6) *æ:ghwæ:r*, *æ:ghwes*, *æ:ghwanan*, *æ:ghwanone*, *æ:ghwanum*, *æ:ghwider*

æt- (7) *ætforan* 2, *ætgedere*, *æthwa:re*, *æthwega*, *æthwo:n*, *ætrihstes*, *ætsamne*

and- (1) *ande:ages*

be- (12) *beaftan* 1, *bee:astan*, *bee:astannordan*, *beforan* 2, *befullan* 1, *begeondan* 2, *beheonan* 2, *behindan* 2, *behwon*, *benordan*, *besu:ðan*, *bewestan* 2

bi- (1) *binnan* 2

cal- (1) *calfela*

- call-** (4) *callrihte, callswa:, callswilc, calltela*
- em-** (1) *emtwa:*
- for-** (25) *forberendli:ce, fore:ade, fore:aðeli:ce, forgeare, forgeorne, forbrædli:ce, forbræde, forbwega, forbwon, forbwy:, forinli:ce, forinweardli:ce, forlong, forlonge, forlostli:ce, forne:ah, fornytli:ce, foroft, forso:ð, forsweotole, forðearle, forðearli:ce, forðon 1, foru:tan 1, forwel*
- fore-** (3) *foregle:awli:ce, foremanig, foremihhtigli:ce*
- forð-** (2) *forðmid, forðrihte*
- fre:a-** (1) *fre:aofestli:ce*
- ful-** (2) *fulgeare, fulba:l*
- full-** (5) *fullgeorne, fullmedomli:ce, fulloft, fullrade, fullricene*
- ge-** (7) *gehwe:r, gehwanon, gehwider, geli:ce 2, gelo:me, genebe, gedra:f*
- in-** (3) *incu:ðli:ce, instede, instepe 1*
- of** (2) *ofidu:ne 1, ofstede*
- ofer-** (9) *ofercall, oferhe:afod, oferhygdigli:ce, oferi:dylli:ce, oferli:ce, ofermo:digli:ce, oferra:dli:ce, oferswi:ðe, ofersufa*
- on-** (20) *ona:r, onbæc, onbæcling, onbu:tan 1, ondu:ne, onemn 2, onforan 2, ongeador, onbindan, onbinder, onbinderling, oninman 2, onli:ce, onrihtli:ce, onsundran, onsundrum, onufan 2, onuppan 2, onu:tan, onweg 1*
- sa:m-** (2) *sa:mha:l, sa:mwi:sli:ce*
- sam-** (1) *samli:ce*
- to:-** (8) *to:cyrca:werd, to:dæg, to:e:acan 2, to:gedre, to:ge:are, to:gi:fe, to:hwon, to:morgen*
- ðurh-** (1) *ðurhlonge*
- un-** (46) *una:blinnendli:ce, unæ:wfestli:ce, unbeorhte, undearnunga, unde:ogolli:ce, undo:mli:ce, unearfoðli:ce, unendebyrdli:ce, unfeaderli:ce, unfeagre, unfestli:ce, unfeor, unforcu:ðli:ce, unforhtli:ce, unforse:awodli:ce, unfracodli:ce, unfre:ondli:ce, unfro:forli:ce, unfyrn, unge:ara, ungebeorhtli:ce, ungedæftli:ce, ungedwimorli:ce, ungefe:ali:ce, ungefyrn, ungeorne, ungesom, ungewealdes, ungewyrhtum, unhe:anli:ce, unni:edig, unsce:adeli:ce, unscandli:ce, unseldan, unsideli:ce, unso:fte, unsynnum, untela, untra:gli:ce, unde:awfestli:ce, unwearnum, unwi:se, unwillan, unwilles 1, unwillum*
- under-** (2) *underbæc, underneodan*
- u:p-** (1) *u:pweard*
- wið-** (9) *wiðæftan 1, wiðe:astan, wiðforan 2, wiðbindan, wiðinnan 1, wiðneodan, wiðuppon, wiðu:tan 2, wiðwestan*
- wiðer-** (1) *wiðerræhtes*
- ymb-** (1) *ymbu:tan 2*

Suffixed adverbs (666)

- a** (8) *elcora, fora, ge:ara, midlunga, sammunga, singala, siðða, so:na*
- an** (18) *æftan, e:astan, edni:wæn, foran 2, geostran, giestran, innan 2, ne:an, ni:wæn, norðan 1, seldan, si:dan, siððan 1, su:ðan, ufēnan 1, u:tan, westan, wi:dan*
- e** (124) *æfterwearde, æ:ne, angsume, bæclinge, bealde, bearhtme, beorhte, bitre, bla:te, ble:ate, bra:de, ca:fe, cealde, ceorlisce, cu:ðe, de:ope, deorce, dro:fe, du:ne, dyrnelegere, e:astane, calle,*

earge, earm, elde:odige, endlyfte, feste, feorrane, fi:fte, foreward, forbte, fracode, fremsume, frumli:ce, fu:le, ge:ocre, ge:omere, (ge)hle:owe, gebwædere, (ge)li:ce, georne, (ge)ru:me, gese:lige, geswæ:se, geswipore, getange, gewe:ne, giestranæ:fene, gle:awe, grame, gri:mme, grorne, he:ste, ha:te, he:age, he:ane, hearde, hefige, heonone, hidere, hi:wcu:ðli:ce, blu:de, holde, hwædere 1, hwi:le, hwo:nli:ce, lange, la:de, le:ase, le:obte, li:xende, manigfealde, ne:ode 1, neodane, ni:ede, nigode, niðere, nytende, ofere, re:ade, recene, sa:re, scaefrihte, seofode, sieste, smale, sme:adancole, smicere, smu:de, so:de, strange, swæ:re 1, swarte, sweotole, swi:de, swo:te, syndrige, te:ode, torbte, torne, tra:ge, twelfte, dearfle:ase, dearle, donne 1, drymme, unefne, unforbte, ungefo:ge, ungyld 1, unswæ:se, unswi:de, u:tane, u:te, wa:ce, wearne, westane, wi:de, wibte, wlitige, wræ:ste, wra:de, wuldorfeste, yfle

-enga (3) *ierrenga, ni:edenga, styrennga*

-es (46) *andlanges 1, æ:nes, a:nstrecas, dages, daglanges, e:agsy:nes, ealles, e:astribtes, e:astwardes, efnes, elles, endebyrdes, forðwardes, framwardes, geribtes, (ge)wealdes, ha:mwardes, instæpes, ni:edes, nihtes, nihtlanges, niðerwardes, norðwardes, ofðu:neweardes, onge:anwardes, orðances, selfwilles, simbles, singales, sinnihtes, so:des, stre:amrynes, su:ðwardes, synderli:pes, to:gi:fes, dances, dwe:ores, ungewilles, ungewisses, undances, undearfes, unwæres, u:twearde, willes, wordes*

-ig (1) *dy:flig*

-ige (1) *forbtige*

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-inga (8) *bra:dlinga, eclinga, edni:winga, fe:ringa, grundlinga, handlinga, ho:linga, ni:wlinga*

-lice (401) *æ:feli:ce, æ:li:ce, æ:nli:ce, æ:rli:ce, æ:wfastli:ce, æ:wli:ce, ælmesli:ce, ædelli:ce, a:fandodli:ce, a:metendli:ce, andgiætfulli:ce, andgiæti:ce, andweardli:ce, a:nfealdli:ce, angrisenli:ce, angsuimli:ce, a:nræ:dli:ce, a:rfastli:ce, a:rli:ce 1, arodli:ce, a:rweorðli:ce, atolli:ce, a:worpenli:ce, berli:ce, benli:ce, beorhtli:ce, bismærlu:ce, biterli:ce, bli:deli:ce, clæ:nli:ce, ca:fli:ce, ceorlli:ce, cneordli:ce, cræftli:ce, cu:ðli:ce, cwicli:ce, cy:mli:ce, cyneli:ce, cynli:ce, degbwa:mli:ce, de:adli:ce, de:ofolli:ce, de:opli:ce, de:orli:ce, de:orwyrðli:ce, dollu:ce, do:mli:ce, dryhtenli:ce, dryhtli:ce, dugudli:ce, dwe:sli:ce, dyrnli:ce, dysigli:ce, dysli:ce, e:adigli:ce, ealdorli:ce, earfodli:ce, eargli:ce, earmli:ce, e:adeli:ce, e:admo:dli:ce, e:awisli:ce, Ebre:isli:ce, e:celi:ce, edlesendli:ce, egesfulli:ce, egesli:ce, e:steli:ce, ellenli:ce, elde:odigli:ce, ende:asli:ce, eorðli:ce, fa:cenfulli:ce, fa:cenli:ce, fæderli:ce, fæ:rli:ce, fastli:ce, fastra:dli:ce, fe:ondli:ce, frenli:ce, fle:scli:ce, foredancli:ce, forbogodli:ce, forbtli:ce, forligerli:ce, forsewenli:ce, forðli:ce, fracodli:ce, framli:ce, fre:cendli:ce, fremfulli:ce, fremsumli:ce, fre:ondli:ce, fro:forli:ce, frymðli:ce, fu:lli:ce, fu:sli:ce, ga:lli:ce, gamenli:ce, ga:stli:ce, ge:apli:ce, ge:arli:ce 1, gearoli:ce, (ge)be:otli:ce, gebyrðli:ce, gecopli:ce, gecorenli:ce, (ge)cwe:mli:ce, (ge)cymdeli:ce, gedafenli:ce, gede:feli:ce, gedeorsterli:ce, gedwimorli:ce, (ge)dwolli:ce, (ge)efenli:ce, (ge)endebyrðli:ce, gefæddli:ce, gefastli:ce, gefe:ali:ce, gefe:rli:ce, (ge)fre:oli:ce, (ge)herigendli:ce, (ge)hybtli:ce, (ge)hy:deli:ce, gele:afli:ce, geli:ccli:ce, geli:efedli:ce, (ge)limpli:ce, gelo:mli:ce, (ge)lustfulli:ce, (ge)ma:neli:ce, gema:hli:ce, gemengedli:ce, gemetli:ce, (ge)metfastli:ce, gemyndigli:ce, ge:omorli:ce, geornfulli:ce, geornli:ce, gera:dli:ce, gerecli:ce, geri:senli:ce, (ge)ru:mli:ce, (ge)ry:neli:ce, gese:ligli:ce, (ge)sce:adwi:sli:ce, gesce:apli:ce, gesewenli:ce, gesi:eneli:ce, (ge)singalli:ce, gesundfulli:ce, gesundigli:ce, geswæ:sli:ce, geta:cnigendli:ce, gete:sli:ce, (ge)tyngeli:ce, gedwæ:rli:ce, (ge)ðyldeli:ce, gewemmedli:ce, gewemmodli:ce, gewinfulli:ce, gewitodli:ce, gewuneli:ce, (ge)wynsumli:ce, gewy:scendli:ce, gewyrðli:ce, gi:emele:asli:ce,*

gielpli:ce, glædli:ce, gle:awli:ce, godcundli:ce, gramli:ce, grimli:ce, gristli:ce, gyltli:ce, hæ:lwendli:ce, he:ali:ce, healsigendli:ce, he:anli:ce, heardli:ce, hefigli:ce, he:ofendli:ce, heofonli:ce, heteli:ce, hierwendli:ce, hnescli:ce, holdli:ce, horscli:ce, hrædli:ce, hre:owli:ce, bundte:ontigfealdli:ce, bu:scli:ce, hwearfli:ce, hwi:hwendli:ce, hygele:asli:ce, hybtli:ce, i:delli:ce, i:edeli:ce, inweardli:ce, labli:ce, langsumli:ce, la:ðli:ce, leahorli:ce, le:asli:ce, le:ofli:ce, le:ohfli:ce, li:chamli:ce, li:ciendli:ce, li:ftli:ce, li:ðeli:ce, lofli:ce, lufli:ce, lufsumli:ce, lufwendli:ce, lustbæ:ri:ce, lustsumli:ce, lytigli:ce, ly:ðerli:ce, mæ:ri:ce, mæ:ðli:ce, ma:nfulli:ce, manigfealdli:ce, ma:nli:ce, mearuli:ce, medemli:ce, menniscli:ce, micelli:ce, mihteli:ce, mildbeortli:ce, misli:ce, missenli:ce, mo:digli:ce, mo:dorli:ce, munucli:ce, mynsterli:ce, na:hili:ce, ne:ali:ce, nearoli:ce, ni:eddearfli:ce, ni:etenli:ce, ni:wli:ce, nytli:ce, nytwierðli:ce, oferflo:wendli:ce, ofermo:dli:ce, ondrysenli:ce, onge:anweardli:ce, openli:ce, orgelli:ce, orma:tli:ce, orsogli:ce, pi:sli:ce, prutli:ce, ræ:dli:ce, reggoli:ce, re:ðli:ce, ri:cli:ce, ribtli:ce, ribtwi:sl:ce, ru:mmo:dli:ce, sa:ri:ce, scamle:asli:ce, scamli:ce, scandli:ce, searpli:ce, scortli:ce, searoli:ce, seldli:ce, semnendli:ce, sibli:ce, sideli:ce, si:ðli:ce, sleactli:ce, sme:agendli:ce, sme:ali:ce, sme:adancli:ce, sme:adancoll:ce 1, snelli:ce, snotorli:ce, sorgli:ce, so:ðfestli:ce, so:ðli:ce, spēri:ce, stadolfestli:ce, sti:ðli:ce, sto:wli:ce, stræcli:ce, strangli:ce, strengli:ce, stuntli:ce, styrnli:ce, sundorli:ce, swæ:ri:ce, sweotolli:ce, swicoll:ce, swi:ðli:ce, swo:tli:ce, sy:ferli:ce, symbelli:ce, synderli:ce, syndrigli:ce, synli:ce, tæ:lli:ce, tæ:hwierðli:ce, teartli:ce, te:onli:ce, ti:dli:ce, tilli:ce, to:de:lendli:ce, to:hli:ce, torbtli:ce, to:ðundenli:ce, to:weardli:ce, tre:owli:ce, trumli:ce, twe:ogendli:ce, twe:oli:ce, twe:onigendli:ce, twi:fealdli:ce, ðasli:ce, ðancweorðli:ce, ðearfendli:ce, ðearfli:ce, ðearli:ce, ðearlwi:sl:ce, ðe:awli:ce, ðegnli:ce, ðri:stigli:ce, ðri:stli:ce, ðri:fealdli:ce, ðrymli:ce, ðry:ðli:ce, ðurhwunigendli:ce, ðwe:orli:ce, una:berendli:ce, unæðeli:ce, una:fyllendli:ce, una:fyllendli:ce, una:ly:fedli:ce, una:ræfnedli:ce 1, una:ræfnendli:ce, una:ri:medli:ce, una:ri:mendli:ce, una:secgendli:ce, una:te:origendli:ce, una:wendendli:ce, unbrosnodli:ce, unforbu:gendli:ce, unforwandodli:ce, ungecopli:ce, ungecyndli:ce, ungefo:gli:ce, ungefræ:geli:ce, ungelæ:redli:ce, ungele:affuli:ce, ungel:fedli:ce, ungeræ:dli:ce, ungeræcli:ce, ungerisenli:ce, ungerý:deli:ce, ungesce:adwi:sl:ce, ungete:origendli:ce, ungewi:tendli:ce, unhi:erli:ce, unle:dli:ce, unonwendendli:ce, unple:oli:ce, unscyldigli:ce, unwidmetenli:ce, wa:cli:ce, walbre:owli:ce, werli:ce, wæ:wærðli:ce, weargli:ce, we:nli:ce, we:pendli:ce, weorðfulli:ce, weorðli:ce, werli:ce, wi:ftli:ce, wi:gli:ce, wi:sl:ce, wilddæ:orli:ce, wilsumli:ce, widerweardli:ce, wlancli:ce, wo:dli:ce, wo:hli:ce, wo:pli:ce, woruldli:ce, wræcli:ce, wra:tli:ce, wra:ðli:ce, wrixlendli:ce, wuldorli:ce, wundorli:ce, wuniendli:ce, wynli:ce, yfeli:ce, ymbby:digli:ce 1, ymbby:digli:ce 2

-ling (3)

bæcling, carsling, underbæcling

-mæ:st (1)

eallmæ:st

-um (40)

æftum, a:ncumnum, a:nli:pum, a:num, bitrum, e:adme:dum, c:stum, firenum, furðum, gedýhtedum, gegnum, gedýldum, gæ:dum, gumcystum, he:apum, hwi:lum, le:ofwendum, listum, lustum, ly:tum, miclum, misli:cum, ordancum, searwum, seldum, smalum, snyttrum, stundum, sundrum, ti:dum, ðingum, ðrymnum, ufanweardum, ungemetum, unsnyttrum, u:tewardum, weorcum, wissum, wundrum, wynnum

-unga (12) *a:nunga, dearnunga, eallunga, e:awunga, fullunga, gegnunga, ne:adunga, healfunga, ni:wunga, simblunga, unce:apunga, we:nunga*

Compound adverbs (64)

hwæ:r 1 (4) *(ge)welhwæ:r, na:hwæ:r, na:thwæ:r, welgehwe:r*

hwega (5) *hu:hwega, hwe:rhwega, hwanonhwegu, hwiderhwega, hwi:lhwega*

lang (5) *e:astlang, ge:arlanges, nordlang, westlang, westnordlang*

mæ:lum (31) *æcermæ:lum, bitmæ:lum, brytmæ:lum, byrðenmæ:lum, ci:stmæ:lum, cnotmæ:lum, dæ:lma:lum, dropmæ:lum, floccmæ:lum, fo:tmæ:lum, ge:armæ:lum, (ge)flitmæ:lum, gefre:dmæ:lum, be:apmæ:lum, bi:dmæ:lum, limmæ:lum, nammæ:lum, pricmæ:lum, sce:afmæ:lum, scy:rmæ:lum, sne:dmæ:lum, stæpmæ:lum, stefnmæ:lum, stundmæ:lum, styccemæ:lum, sundermæ:lum, dre:gme:lum, dre:atmæ:lum, ðu:sendmæ:lum, wearnmæ:lum, wræ:dmæ:lum*

rihte (5) *e:astrihte, be:rrihte, su:ðrihte, ðe:rrihte, westrihtes*

weard 3 (11) *a:dunweard, ha:mweard, bindanweard, nordanweard, ofðu:neweard, su:ðweard, to:gædereweard, ðanonweard, ðiderweard, ðiderweardes, westanweard*

wise 2 (3) *bringwi:san, bysewi:se, scipwi:san*

Hypothetical predicates (233)

a:blinnendli:ce, æ:freli:ce, æ:terfylgendli:ce, ælta:weli:ce, a:gendli:ce, a:htli:ce, a:li:efedli:ce, a:nmo:dli:ce, a:nwilli:ce, a:rfulli:ce, a:rle:asli:ce, bealdli:ce, bebogodli:ce, behy:deli:ce, behy:digli:ce, behy:deli:ce, berendli:ce, bilewitli:ce, blindli:ce, borli:ce, bru:cendli:ce, carfulli:ce, carli:ce, ce:nli:ce, codli:ce, crefstigli:ce, cwildbæ:rli:ce, cyrtenli:ce, cystigli:ce, de:opðancenli:ce, de:opðancollli:ce, deorcli:ce, dre:origli:ce, e:adme:dli:ce, e:csø:dli:ce, edwi:tfulli:ce, efestli:ce, egefulli:ce, egele:asli:ce, eornostli:ce, esnli:ce, fegerli:ce, fe:owerfealdli:ce, foresce:awodli:ce, forþefendli:ce, forwiernedli:ce, fræfelli:ce, frecli:ce, fremedli:ce, fyrwitgeornli:ce, ga:lfulli:ce, ge:aroli:ce 1, (ge)brægedenli:ce, gebyrðeli:ce, gede:ledli:ce, gedefreli:ce, (ge)di:egolli:ce, gedre:ogli:ce, (ge)dyrstigli:ce, gefstli:ce, geglengendli:ce, (ge)hæ:theortli:ce, gebeortli:ce, gebi:wodli:ce, (ge)le:affuli:ce, gelystfulli:ce, gemetodli:ce, gemimorli:ce, geneabheli:ce, genyhtli:ce, (ge)nyhtsumli:ce, geræ:deli:ce, gesce:adenli:ce, gesce:adli:ce, gescierpiendli:ce, (ge)scere:peli:ce, (ge)sibsumli:ce, gesinli:ce, gespe:digli:ce, geswe:gsumli:ce, geswiporli:ce, (ge)swi:ðfromli:ce, getangli:ce, (ge)tre:owfulli:ce, getyngeli:ce, gedunnenli:ce, (ge)ðwæ:reli:ce, (ge)ðyldigli:ce, gewæaldendli:ce, gewi:sfulli:ce, (ge)wisli:ce, gewisli:ce, (ge)wittigli:ce, gi:ferli:ce, gmedeli:ce, græ:digli:ce, hæ:stli:ce, hæ:deli:ce, hæ:ligli:ce, hæ:tli:ce, hi:gendli:ce, hi:wiscli:ce, hli:sfuli:ce, hlutortli:ce, hne:awli:ce, bohfulli:ce, bohli:ce, hwæ:li:ce, hlygdigli:ce, incundli:ce, letli:ce, langli:ce, langmo:dli:ce, li:cwyrdli:ce, listeli:ce, lustli:ce, mægenle:asli:ce, mæ:gwlitli:ce, manli:ce, meagolli:ce, mihtigli:ce, mi:nli:ce, myrigli:ce, namcu:ðli:ce, ne:odli:ce, ni:ðfulli:ce, ni:ðli:ce, ny:dwræ:cli:ce, oferflo:wedli:ce, oferþigendli:ce, ofostli:ce, oftræ:dli:ce, onwealgli:ce, orenli:ce, orpedli:ce, rancli:ce, re:cele:asli:ce, recenli:ce, rihtgele:asli:ce, ro:tli:ce, ru:mga:li:ce, ru:mbeortli:ce, ryneli:ce, samodli:ce, scearpðancli:ce, scynðendli:ce, selfwillendli:ce, seofonfealdli:ce, sicorli:ce, sidæfulli:ce, sla:wli:ce, smiðli:ce, smoltli:ce, so:ðsecgendli:ce, spe:dli:ce, spo:wendli:ce, sprindli:ce, stæ:rli:ce, stæ:ðbly:pli:ce, stearccli:ce, stilli:ce, stru:dgendli:ce, stulorli:ce, sundorcraftigli:ce, swe:tli:ce, swiftli:ce, swi:giendli:ce, swi:gli:ce, tæ:lle:asli:ce, ti:mli:ce, to:dæ:ledli:ce, treastli:ce, trwæ:mendli:ce, twi:endli:ce, ðancfulli:ce, ðe:awfestli:ce, ðicli:ce, ðurhu:tli:ce, una:ðrotenli:ce, unbescce:awodli:ce, ungehealdsumli:ce, ungelifendli:ce 1, ungesce:ligli:ce, ungestæddigli:ce, ungesundli:ce, ungeswi:cendli:ce, ungetæ:sli:ce, ungedyldeli:ce, ungewi:ttigli:ce, ungle:awli:ce, ungný:ðeli:ce, unhi:ersumli:ce, unle:asli:ce, unmedomli:ce, unmarnli:ce, unmytwardli:ce, unræ:dfestli:ce, unrihtba:d, unrihtwi:sli:ce, unscæðfulli:ce, unscæðdigli:ce, unsla:wli:ce, unslaecli:ce, unsnotorli:ce, unso:ftli:ce,

untæ:hwierðli:ce, untre:owli:ce, undancwyrðli:ce, unwederli:ce, unwilsimli:ce, unwræ:stli:ce, u:pa:hafenli:ce, wacollī:ce, wacorli:ce, wæccendli:ce, wælgimli:ce, wæ:rli:ce, welwillendli:ce, werodli:ce, wesendli:ce, wilfulli:ce, willendli:ce, willī:ce, willodli:ce, wistfulli:ce, wi:tele:asli:ce, wliteli:ce, wlitigli:ce, woruldcundli:ce, wuldorfæstli:ce, wuldorfulli:ce, wundorfulli:ce, ymb-sce:awiendli:ce

Bracketing paradoxes (56)

e:astsu:ðlang, forcu:ðe, forcu:ðli:ce, forswi:ðe, forwundorli:ce, fullfremmedli:ce, fulli:ce, inli:ce, oferblu:de, onforewardan, onforewardum, ongeli:ce, orwearde, swa:ðe:abhwædre, to:dæge, to:so:ðan, twisceatte, ðe:ru:te, una:rli:ce, unclæ:nli:ce, uncu:ðli:ce, unde:adli:ce, une:adeli:ce, ungeapli:ce, ungedafenli:ce, ungefe:rli:ce, ungeli:ce, ungeli:cli:ce, ungelimli:ce, ungemetli:ce, ungesce:adli:ce, ungesewenli:ce, ungedwæ:rli:ce, ungewemmedli:ce, ungewuneli:ce, unme:ðli:ce, unnytli:ce, unnræ:dli:ce, unrihte, unrihtli:ce, unro:tli:ce, unscamli:ce, untæ:lī:ce, unti:dli:ce, unto:de:ledli:ce, untwe:ogenli:ce, untwe:oli:ce, undæ:slī:ce, unwæ:rli:ce, unwa:cli:ce, unwe:nli:ce, unwe:nunga, unweorðli:ce, unwi:slī:ce, u:prihte, u:pwearde

Ambiguous (64)

ætne:hstan, anforngæan, a:teshwo:n, beiundane, betwe:onan 2, betwe:onum 1, cwiferli:ce, dægh-wa:m, earwunga, efenmo:dli:ce, e:stfulli:ce, forðe:m 1, forðy: 1, furðorlucor, ge:arhwamli:ce, gegadere, heardwendli:ce, bedendli:ce, hwæthwugununges, hwi:lon, i:dæges, i:sides, ly:telne, ly:tesna:, ly:testne, onge:an 2, ongemang 2, orce:ape, orce:apes, orce:apunga, orce:apungum, orsceattinga, samtinges, selfwealdli:ce, sunderli:pes, sunganges, toge:anes 2, tolcendli:ce, tomid-des 2, ðanchygende, una:gæ:ledli:ce, una:pi:nedli:ce, una:solcenli:ce, una:swundenli:ce, unbedo:hte, unbehelendli:ce, unblinnendli:ce, unbry:de, unflitme 1, unforwandigendli:ce, ungede:fli:ce, ungedrehtli:ce, ungefre:deli:ce, ungedeahtendli:ce, ungewi:tnigendli:ce, ungræ:digli:ce, unbli:tme, unblitme, unmyndlinga, unoflinnedli:ce, unscelli:ce, u:pa:hæfedli:ce, unto:læ:tendli:ce, unwi:tnigendli:ce, widersy:nes

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