

OLD ENGLISH *GE-* AND THE DESCRIPTIVE POWER OF *NERTHUS*¹

JAVIER MARTÍN ARISTA
University of La Rioja

ABSTRACT. *The main purpose of this article is to carry out an extensive examination of the evidence available of the Old English affix ge- in general, and, in particular, of the ge-alternation, which holds between predicates that bear a form-and-function contrast such as hlid 'lid'-gehlid 'roof'. The ge-alternation is examined as a pure and a mixed alternation, co-occurring with gradation, zero derivation and affixation. The conclusion is reached that ge- is the most frequent and the most widely distributed affix in Old English. Moreover, it partakes in inter-categorical and recursive derivation. As a secondary goal, this article aims at assessing the descriptive adequacy of the database of Old English derivational morphology Nerthus both on qualitative and quantitative grounds. In this respect, the conclusion is reached that the amount of evidence of ge- that can be drawn from Nerthus allows for an extensive analysis of the affix. On the other hand, Nerthus, in its present state, requires more accurate and formalised meaning definitions.*

1. INTRODUCTION

The purpose of this article is to bring, by means of an extensive examination of the evidence available for Old English *ge-*, a new way of looking at this affix. Additionally, the evidence of the affix *ge-* drawn from *Nerthus* (Martín Arista, Caballero González, González Torres, Ibáñez Moreno and Torre Alonso fc.) will be used to assess the descriptive power of this lexical database both on qualitative and on quantitative grounds.

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Although this piece research develops along quite a different path, I would not do justice to Lindemann's work (1953; 1970) if I did not acknowledge that their publication represents a milestone in the long tradition of studies in *ge-*. Indeed, this author proved empirically inadequate two ideas central to philological studies, namely that *ge-* is often meaningless (Benson 1701; Adelung 1796; Krapp and Kennedy 1929; Hollmann 1936; Samuels 1949) and that this affix is monosemic, expressing transitivity (Lenz 1886; Lorz 1908), intensification (Bernhardt 1870; Wackernagel 1878; Lorz 1908; Weman 1933), completion (Grimm 1878; Dorfeld 1885; Wustmann 1894; Swaay 1901) or perfective aspect (Martens 1863; Streitberg 1943).²

In spite of his contribution to clearing the traditional underbrush, Lindemann's work is fraught with a fundamental problem: focusing on verbal *ge-*, Lindemann overlooks the transcategorical dimension of derivational morphology. On this question, Lindemann follows the long and crooked path of philological studies published from the 18th century onwards, most of which I have just quoted after Lindemann himself (1953). In this paper I harbour the conviction that the lack of a clear morphological perspective, based on a comprehensive theory of morphology, has weakened the approach to Old English derivation in general and to *ge-* in particular. I can cast two arguments in favour of this view. To begin with, if the distinction between inflectional morphology (always intra-categorical) and derivational morphology (often inter-categorical) had been drawn before in the history of linguistics, the approach to *ge-* would not have been exclusively verbal, as in Samuels (1949) and Niwa (1966), to quote just two authors from the 20th century; and the inflectional or derivational nature of this affix had not been the spine of the discussion. And, in the second place, if derivational morphology had been understood as a phenomenon of its own, independent of inflection, the studies in the derivation of lexical categories, including, for instance, Schön (1905), Schuldt (1905) and Nicolai (1907), would have gone into the heart of the debate, instead of taking issue with the intricacies of inflectional categories in the diachronic perspective.

Given this state of the art, I offer an analysis of *ge-* which touches upon questions of morphological relatedness and contrast and focuses on morphological processes (*Ablaut*, zero derivation and affixation) and all four major lexical categories: Noun, Adjective, Verb and Adverb. With this aim, this journal article is organised as follows. Section 2 raises the methodological question of the interaction between synchrony and diachrony. Section 3 offers a quantitative description of *ge-* affixation, as well as a qualitative approach to categorial distribution and change.

2. All references in this paragraph have been quoted after Lindemann (1953).

Section 4 deals with the pure *ge*-alternation, both intra-categorially and inter-categorially. Section 5 engages in the overlapping of *ge-* with other derivational principles, namely *Ablaut*, zero derivation and affixation. Section 6 offers a summary of the results of the research undertaken in this article.

2. DRAWING EVIDENCE FROM *NERTHUS*

The lexical database of Old English *Nerthus* can provide extensive empirical evidence on the affix *ge-* because it contains around 30,000 entries (headwords) with a full description of their derivational morphology, along with the inflectional morphology relevant for derivation. *Nerthus* analyses each headword in terms of more than sixty variables, which are grouped in three blocks of information: predicate (including category, form, variants, translation, inflectional morphology, type of predicate and morphological process) derivation and compounding (both including canonical, non-canonical, inflective, and phonologically-modified base and adjunct). The organisation of the database is categorial (distinguishing between nouns, adjectives, verbs, adverbs, adpositions and affixes, which are treated as predicates, or full lexical items). Terminal and non-terminal derivational chains constitute the main descriptive device of *Nerthus* (terminal chains represent non-recursive derivation whereas non-terminal chains represent the pre-final stage of recursive derivation).

As I have already remarked, it is a secondary aim of this research to test the descriptive adequacy of *Nerthus* against *ge-*, one of the most widespread features of the language, and a question that has engendered one of the longest debates in English historical linguistics. For this reason (and for the reasons given in the state of the art), the main thrust of the research that follows is description. Sections 3, 4 and 5 gather a body of evidence that represents the main contribution of this journal article, given its scope and depth. Regarding scope, the evidence furnished is both intra-categorial and inter-categorial; as for depth, the quantification of the affix *ge-* is exhaustive and many aspects of the *ge-* alternation are nearly exhaustive.

Of all the possible aspects relating to the affix *ge-*, the evidence under scrutiny here is the *ge-* alternation. The *ge-* alternation holds between predicates (in the sense of *lexemes*) that bear a form-and-function contrast such as those in (1a), and excludes those predicates that do not bear a functional contrast, like the ones in (1b).³

3. Notice that the examples that follow in the remainder of this paper draw on *Nerthus*, which is mainly based on Clark Hall (1996).

(1)

- a. *blid* 'lid'~*geblid* 'roof', *lang* 'long'~*gelang* 'dependent', *spræ:dan* 'to spread'~*gespræ:dan* 'to stretch forth', *hwæ:r* 'where'~*gehwæ:r* 'everywhere'
- b. *eardung* 'tabernacle'~*geardung* 'tabernacle', *gylden* 'golden'~*gegylden* 'golden', *wærian* 'to pass by'~*gewærian* 'to pass by', *ble:owe* 'in a sheltered manner'~*geble:owe* 'in a sheltered manner'

The analysis that is carried out in this journal article regards *Ablaut*, zero derivation and affixation as formative principles of derivational morphology. These phenomena are illustrated, respectively, by (2a), (2b) and (2c):

(2)

- a. *full* 'full'~*gefyllednes* 'fulfilment', *helm* 'protection'~*gebilmed* 'helmeted', *be:ab* 'high'~*gebe:ban* 'to raise'
- b. *bæc* 'back'~*gebæcu* 'back part', *clibbor* 'clinging'~*geclibs* 'clamour', *gleng* 'ornament'~*geglengan* 'to set in order'
- c. *fre:o* 'freedom'~*gefre:ogend* 'liberator', *glo:f* 'glove'~*geglo:fed* 'gloved', *eftgian* 'to repeat'~*geeftgian* 'to restore'

The concept of the interaction between synchrony and diachrony underlying the alternations in (1a) and (2a)-(2c) is necessarily dynamic, since *Ablaut*, zero derivation and affixation are not simultaneous processes in a strictly synchronic analysis. It is usually the case that in the diachronic axis, phenomena overlap throughout processes often blurred by the lack of evidence or even contradictory data. Diachronically, strong verbs turned out nouns, adjectives and other verbs by means of graded or ungraded zero derivation (Hinderling 1967; Kastovsky 1968), while nouns and adjectives produced weak verbs. Then, fully productive affixation was followed by less productive affixation and more productive compounding (Hiltunen 1983). Categorial extension (as in *riht* 'right'~*riht* 'something right') must have been active throughout the three diachronic stages I have just sketched. Overall, two central distinctions arise: between lexical derivation as stem formation versus word formation on the one hand (Kastovsky 1986, 1990, 1992), and between more productive affixation as opposed to more productive compounding, on the other (de la Cruz 1975; Horgan 1980; Hiltunen 1983).⁴

4. Whereas Horgan (1980) merely describes affix interchangeability, de la Cruz (1975: 77) identifies a process of grammaticalizing equalization, through which interchangeable affixes are replaced by zero, as in *anymed/genimmed/nimað*. See also Martín Arista (2006) on the question of affix interchangeability.

It is my contention that *ge-* can throw more light on the evolution of word formation in Old English than any other affix, for three reasons: firstly, because *ge-* is the most frequent (in the sense of type-frequency) affix in Old English; secondly, because *ge-* is the only universal affix (given that it distributes over all lexical categories); and, thirdly, because *ge-* co-occurs with all major morphological processes throughout the history of Old English word-formation, including, at least, *Ablaut* (gradation), zero derivation and affixation. In the remainder of this paper I describe *ge-* as the most frequent and universal affix in Old English (section 3) and examine contrastive *ge-* as the only formative principle in an alternation (section 4) or as one of the formative principles that motivate a given alternation (section 5).

3. DESCRIPTION OF *GE-*

Recapitulating, the *ge-* alternation links two morphologically related predicates between which there exists a functional contrast (involving meaning and/or category). In identifying an alternation I am not making a claim of productivity in the synchrony, neither am I assuming a unidirectional derivation. I have just remarked that the morphological processes that motivate the alternation have not taken place simultaneously: *Ablaut*, for instance, takes place in Germanic already and clearly predates productive affixation, leave alone productive compounding in Old English.⁵ Regarding unidirectionality, the notion of alternation implies a choice within a derivational paradigm, which can be unidirectional or multidirectional. A unidirectional derivation can be described by means of a single derivational chain, as in (3a) and (3b). A multidirectional derivation cannot be described in terms of a single derivational chain, as in *hand* 'hand' > *gebendnes* 'proximity' / *handlung* 'handling' in (3c) and (3d):

(3)

- a. *co:p* 'vestment' > *geco:p* 'proper' > *geco:plic* 'proper' > *geco:pli:ce* 'in a proper manner'
- b. *ðe:aw* 'custom' > *geðe:awe* 'customary' > *geðe:awian* 'to bring up well' > *geðe:awod* 'well-mannered'
- c. *hand* 'hand' > *gebendan* 'to hold' (*gebende* 'near', *gebende* 'at home', *gebendnes* 'proximity')

5. See Stark (1982: 122) on productivity and recoverability in the synchronic and diachronic analysis, respectively, of Old English derivation.

- d. *band* 'hand' > *bandlung* 'handling' (*bandlinga* 'by hand', *bandle* 'handle', *bandlian* 'to handle', *bandful* 'handful')

Considering (3c) and (3d), it is worth remarking that *Ablaut* and *ge*-affixation represent the formative principles which motivate the two directions of the derivation, *band* > *gebendnes* vs. *band* > *bandlung*. In more general terms, (3c) and (3d), being instances of multidirectional derivations, constitute substantial evidence against any claim of unidirectional derivations in Old English.⁶

It is not surprising that *ge*- has received so much attention in English historical linguistics, given that it is the most generalised affix, both in quantitative and qualitative terms. I focus on the quantitative aspects of the prefix first.

Ge- is prefixed to 1,270 predicates, of which 532 are nouns, 359 adjectives, 84 adverbs, 293 verbs, and 2 belong to minor grammatical categories. No adposition is preceded by *ge*. If we consider the category Noun, 92 predicates are masculine, 193 feminine and 185 neuter; the rest are ambiguous with respect to gender. Within the category Verb, 15 predicates belong to the strong classes, and 278 to the weak classes. An illustration of each predicate category with *ge*- follows in (4):

- (4)
- a. *gebedbigen* 'payment for prayers' (Noun)
 - b. *geblystful* 'attentive' (Adjective)
 - c. *gese:dan* 'to satisfy' (Verb)
 - d. *gemimorli:ce* 'by heart' (Adverb)
 - e. *gebwilc* 'which' (Other)

The number of predicates to which the affix *ge*- can be prefixed, that is, those predicates that are preceded by (+/-) in Clark Hall's (1996) dictionary, is 1,346, out of which 345 are nouns, 109 adjectives, 47 adverbs, 843 verbs, and 2 belong to minor grammatical categories.⁷ No adposition has been found in this group, either. As for the category Noun, 79 are masculine, 169 feminine and 60 neuter. The rest are ambiguous for gender. If we focus on the category Verb, it turns out

6. Put in Kastovsky's (1992: 294) words, the vocabulary of Old English is characterised by large morphologically related word-families. See Palmgren (1904: 25) on *ge*-formations on the present tense form of the strong verb.

7. For headwords like *gebannan*-*a:bannan* 'to summon', see *The Dictionary of Old English*, which distinguishes the headwords *bannan*, *geábannan* and *a:bannan*.

that 3 are irregular verbs, 162 belong to the strong classes and 689 to the weak class. An illustration of each category is given in (5):

- (5)
- a. *stencnes/gestencnes* ‘odour’ (Noun)
 - b. *limpful/gelimpful* ‘fitting’ (Adjective)
 - c. *ru:mli:ce/geru:mli:ce* ‘at large’ (Adverb)
 - d. *de:adian/gede:adian* ‘to die’ (Verb)
 - e. *ilca/geilca* ‘the same’ (Other)

Summarising, *ge-* can be prefixed to 2,616 predicates, including 877 nouns, 468 adjectives, 131 adverbs, 1,136 verbs and 4 predicates of minor grammatical categories. A comparison with the rest of predicates in *Nerthus* is in point here. *Nerthus* contains 29,389 predicates, of which 16,494 are nouns, 5,755 adjectives, 1,600 adverbs, 5,273 verbs, 80 adpositions and 117 belong to minor grammatical categories. These figures are given, along with the corresponding percentages, in Table 1:

	<i>Ge-</i>	Total	<i>Ge-</i>percentage
Nouns	877	16,494	5.3%
Adjectives	468	5,755	8.1%
Adverbs	131	1,600	8.1%
Verbs	1,136	5,273	21.5%
Adpositions	0	80	0%
Other	4	117	3.4%
Total	2,616	29,389	8.9%

Table 1. *Ge-* prefixable items per lexical category (type frequency).

These figures have no rival among Old English affixes: no other affix can be attached to such a high number of predicates (up to 2,616); neither can any affix distribute so freely across categories (all except adpositions). The affix *a-* can be attached to 928 predicates, all of which are verbs (Martín Arista and González Torres 2005), that is, *ge-* outnumbers *a-* in frequency and distribution. These figures also tell us that *ge-* is mainly but not exclusively a verbal prefix: it is

prefixed to 21.5% of verbs, but also to 8.1% of adjectives and adverbs, 5.3% of nouns and 3.4% of the members of minor grammatical categories. Variation also revolves around verbs: 15% of verbs can take the prefix *ge-* without change of meaning. This is probably the reason why *ge-* has been considered inflective. The inflectional character of *ge-* must be ruled out on account of the stability of the affix throughout the derivation and the lack of generality of *ge-*affixation. I deal with these questions in turn.

As an argument in favour of the derivative character of *ge-*, I advance the stability of this affix all the way down the derivation. Consider the derivatives of *geno:g* 'enough' in (6):

(6)

geno:g 'enough': *genebe* 'sufficiently', *genugan* 'to suffice', *geno:g* 'sufficiently', *geno:gian* 'to be abundant', *genybt* 'abundance', *genybtful* 'abundant', *genybtli:ce* 'abundantly', *genybtsum* 'satisfied', *genybtsumian* 'to suffice', *genybtsumnes* 'abundance', *genybtsumung* 'abundance'

It is certainly an argument in favour of the derivative character of *ge-* that it is kept throughout the derivation all the paradigm down. This does not mean that derivative paradigms like the ones in (7) do not exist. The variation of *ge-*, however, is the result of the alternation $\pm ge$ in the basic predicate, namely *bindan/gebindan*, *dre:fan/gedrefan* and *blystan/geblystan*:

(7)

- a. *bindan/gebindan* 'to bind': *binde* 'headband', *bindele* 'binding', *bindere* 'binder', *binding* 'binding', *una:bindendlic* 'indissoluble', *gebind* 'binding'
- b. *dre:fan/gedrefan* 'to trouble', *dre:fre* 'disturber', *dre:fung* 'disturbance', *gedre:fedlic* 'oppressive', *dre:fednes* 'trouble', *gedre:fnes* 'confusion'
- c. *blystan/geblystan* 'to listen': *geblyste* 'adjective', *blystend* 'listener', *blystere* 'listener', *geblystful* 'attentive', *blysting* 'act of listening'

And as an argument against the inflectional character of *ge-*, I raise the fact that the affixation of *ge-* is not a generalised process, even in verbs. *Ge-* is not affixed to every member of the class Verb, neither does it cause the same meaning change, whereas inflectional affixes can combine with all the members of a given category conveying the same meaning (Bybee 1985). Consider example (8). The affix *ge-* changes valency in pairs like (8a)-(8d). However, there follow several instances where the affix does not motivate a change in the verbal valency. In

(8e)-(8h) the two members of the pair take one internal argument, whereas in (8i)-(8l) the two members of the pair take two internal arguments:

(8)

- a. *ri:nan* 'to rain'~*geri:nan* 'to wet with rain'
- b. *sadian* 'to be sated'~*gesadian* 'to satiate'
- c. *stincan* 'to emit a smell'~*gestincan* 'to smell'
- d. *ðearfian* 'to be in need'~*geðearfian* 'to impose necessity'
- e. *ce:lan* 'to cool'~*gece:lan* 'to quench thirst'
- f. *ceorran* 'to creak'~*geceorran* 'to turn'
- g. *cuman* 'to come'~*gecuman* 'to come together'
- h. *brisian* 'shake'~*gebrisian* 'shake together'
- i. *biddan* 'to ask'~*gebiddan* 'to beg'
- j. *fricgan* 'to ask'~*gefricgan* 'to learn'
- k. *gryndan* 'to set'~*gegryndan* 'to found'
- l. *sle:an* 'to strike'~*gesle:an* 'to strike down'

To round off the question of derivation versus inflection in *ge-*, it is probably worth commenting on the fact that it is hard to find instances of gender change that can be attributed to *ge-* like *timbru* 'building' (femimine)~*getimbre* 'building' (neuter). Instances like the ones given under (9), on the other hand, are more frequent:

(9)

- a. *ba:n* 'bone'~*geba:n* 'bones'
- b. *freond* 'friend'~*gefri:end* 'friends'
- c. *mæcg* 'man'~*gemæcca* 'pair'
- d. *mann* 'man'~*gema:na* 'community'
- e. *sco:h* 'shoe'~*gescy* 'pair of shoes'
- f. *swe:or* 'pillar'~*geswe:oru* 'hills'
- g. *sweostor* 'sister'~*gesweostor* 'sisters'
- h. *wæ:pen* 'weapon'~*gewæ:pnu* 'arms'

Although textual work is probably needed in this area, it does not seem completely out of place to consider *ge-* a marker of nominal aspect (in the sense

of Van Valin and LaPolla 1997), thus rendering countable nouns as uncountable or collective. No further evidence of inflectional *ge-* has been found throughout the research reported here.

For the reasons just given, I consider *ge-* a derivational affix and identify *ge-* alternations in pairs such as the ones that follow in (10):⁸

(10)

- a. *be:or* 'beer'~*gebe:or* 'pot-companion'
- b. *byrd* 'burden'~*gebyrd* 'burdened'
- c. *stincan* 'stink'~*gestincan* 'to smell'

As I have already pointed out, *ge-* can be prefixed to all categories except adpositions. It is prefixed to basic predicates in instances like those in (11):

(11)

- a. *blid* 'lid'~*geblid* 'roof'
- b. *biddan* 'to ask'~*gebiddan* 'to beg'
- c. *lang* 'long'~*gelang* 'dependent on'

Ge- can also be prefixed to predicates already derived by transparent derivative means such as the ones in (12):

(12)

- a. *lustful* 'desirous'~*gelustful* 'desirable'
- b. *langian* 'to long for'~*gelangian* 'to send for'
- c. *friðsum* 'peaceful'~*gefriðsum* 'safe, fortified'

Ge- affixation does not involve category change in derivations like the following:

(13)

- a. *fæ:mne* 'maid'~*gefæ:mne* 'woman'
- b. *cy:ðig* 'known'~*gecy:ðig* 'aware of'
- c. *gryndan* 'to set'~*gegryndan* 'to found'

8. But see Sosa Acevedo (forthcoming).

d. *hwæðere* ‘however’~*gehwæðere* ‘nevertheless’

e. *hwilc* ‘which’~*gehwilc* ‘whichever’

When *ge-* affixation changes category, the most frequent pattern of derivation is *-ge* noun > *+ge* adjective:⁹

(14)

a. *de:aw* ‘dew’~*gede:aw* ‘dewy’

b. *molcen* ‘curlded milk’~*gemolcen* ‘milked’

c. *swa:t* ‘sweat’~*geswa:t* ‘sweaty’

Ge- can be contrastive by itself, as in (15a), or in combination with other formative principles, such as *Ablaut*, zero derivation and affixation, as is depicted by (15b), (15c) and (15d), respectively:

(15)

a. *spræ:dan* ‘to spread’~*gespræ:dan* ‘to stretch forth’, *wesan* ‘be’~*gewesan* ‘contend’, *ðingan* ‘to invite’~*geðingan* ‘to thrive’

b. *cle:ofan* ‘to cleave’~*geclyft* ‘cleft’, *helm* ‘protection’~*bilmed* ‘helmeted’

c. *coro:na* ‘crown’~*gecoro:nian* ‘to crown’, *gleng* ‘ornament’~*geglengan* ‘to set in order’

d. *bi:geng* ‘practice’~*gebi:gendlic* ‘inflectional’, *cne:orin* ‘generation’~*gecne:orenes* ‘generation’, *glo:f* ‘glove’~*geglo:fed* ‘gloved’,

I will refer to *ge-* by itself as *the pure alternation* and to *ge-* in combination as *the mixed alternation*. I devote the next two sections to the two alternations of *ge-* I have just distinguished.

4. THE PURE ALTERNATION

The pure alternation holds when *ge-* is contrastive in form (presence versus absence) and in meaning (more or less specialised meaning) without overlapping with *Ablaut* or affixation. The pure alternation can relate members of the same or different categories. The meaning contrast most often dealt with in the literature (Lenz 1886; Lorz 1908, to cite just two works) affects syntactic transitivity, in pairs like:

9. See Hinderling (1967: 79) on the evolution verb > deverbal noun > adjective > noun.

(16)

- a. *o:nettan* 'to be quick'~*geo:nettan* 'to get quickly'
- b. *habban* 'to have'~*gehabban* 'to hold'
- c. *innian* 'to go in'~*geinnian* 'to include'
- d. *brisian* 'to clatter'~*gebrisian* 'to shake together'
- e. *fe:ran* 'to go'~*gefe:ran* 'to undergo'
- f. *restan* 'to rest'~*gerestan* 'to give rest to'

Regardless of whether these pairs are explained in terms of *Aktionsart* or syntactic transitivity, the affixation of *ge-* to one of the members of the alternation has the effect of changing the valency or the verb from one internal argument to two internal arguments. I have already focused on this question, as well as on the exceptions to this generalisation in example (8). Putting aside verbs, nouns that partake in the pure alternation of *ge-* include:

(17)

- a. *a:gnung* 'owning'~*gea:gnung* 'acquisition'
- b. *beorg* 'mountain'~*gebeorg* 'defence'
- c. *be:or* 'beer'~*gebe:or* 'pot-companion'
- d. *bro:ðorscipe* 'brotherliness'~*gebro:ðorscipe* 'brotherhood'
- e. *fæ:mne* 'maid'~*gefæ:mne* 'woman'
- f. *fædera* 'paternal uncle'~*gefædera* 'godfather'
- g. *blid* 'lid'~*geblid* 'roof'
- h. *hweorf* 'exchange'~*gebweorf* 'a turning'
- i. *setl* 'seat'~*gesetl* 'assembly'
- j. *si:ð* 'journey'~*gesi:ð* 'companion'

The pure alternation of *ge-* can also be identified in adjectival pairs like the ones that follow in (18):

(18)

- a. *æðele* 'noble'~*geæðele* 'natural'
- b. *ælfremed* 'strange'~*geælfremed* 'free'
- c. *byrde* 'of high rank'~*gebyrde* 'innate'
- d. *cy:ðig* 'known'~*gecy:ðig* 'aware of'

- e. *fæderen* 'paternal'~*gefæderen* 'born of the same father'
- f. *friðsum* 'peaceful'~*gefriðsum* 'safe'
- g. *bealdsum* 'careful'~*gebealdsum* 'provident'
- h. *lang* 'long'~*gelang* 'dependent'
- i. *me:dren* 'maternal'~*geme:dren* 'born of the same mother'
- j. *sce:ad* 'understanding'~*gesce:ad* 'reasonable'
- k. *se:aw* 'juice'~*gese:aw* 'succulent'

The pure alternation of *ge-* also shows up in adverbial pairs such as:

(19)

- a. *fæstli:ce* 'certainly'~*gefæstli:ce* 'fixedly'
- b. *hwanon* 'whence'~*gehwanon* 'from every quarter'
- c. *hwæðere* 'however'~*gehwæðere* 'nevertheless'
- d. *hwæ:r* 'where'~*gehwæ:r* 'everywhere'
- e. *hwider* 'whither'~*gehwider* 'in every direction'

When the pure alternation of *ge-* relates to members of two different categories, the most frequent pattern is noun~*ge-* adjective, as in the following pairs:

(20)

- a. *byrd* 'burden'~*gebyrd* 'burdened'
- b. *byrst* 'bristle'~*gebyrst* 'furnished with bristles'
- c. *de:aw* 'dew'~*gede:aw* 'dewy'
- d. *hæ:re* 'hair'~*gebæ:re* 'hairy'
- e. *hy:d* 'skin'~*gehy:d* 'furnished with a skin'
- f. *le:af* 'leaf'~*gele:af* 'leafy'
- g. *mæ:l* 'mark'~*gemæ:l* 'stained'
- h. *met* 'measure'~*gemet* 'fit'
- i. *mo:d* 'courage'~*gemo:d* 'of one mind'
- j. *molcen* 'curlded milk'~*gemolcen* 'milked'
- k. *myne* 'memory'~*gemyne* 'mindful'
- l. *spræ:ce* 'talk'~*gespræ:ce* 'eloquent'
- m. *so:m* 'arbitration'~*geso:m* 'unanimous'

- n. *sufel* 'relish eaten with bread'~*gesufel* 'with a relish added to it'
- o. *swa:t* 'sweat'~*geswa:t* 'sweaty'
- p. *wæ:r* 'faith'~*gewæ:r* 'aware'
- q. *wana* 'lack'~*gewana* 'lacking'

Less frequently, the patterns involved in inter-categorical pure *ge*- alternation are adjective~*ge*-noun, as is illustrated by (21a)-(21e), and adjective~*ge*-adverb, as is illustrated by (21f)-(21g):

- (21)
- a. *fē:re* 'able to go'~*gefē:re* 'company'
 - b. *filde* 'of the nature of a plain'~*gefilde* 'plain'
 - c. *ne:ab* 'near'~*gene:ab* 'abundance'
 - d. *sme:ab* 'sagacious'~*gesme:ab* 'intrigue'
 - e. *weald* 'powerful'~*geweald* 'power'
 - f. *braðe* 'quick'~*gebraðe* 'hastily'
 - g. *hwæðer* 'whether'~*gehwæðer* 'which of two'

5. THE MIXED ALTERNATION

I have devoted section 4 to the pure alternation of *ge*-. This section gathers evidence of *ge*- in combination with other formative principles, including *Ablaut*, zero derivation and affixation. Beginning with *Ablaut*, the literature has paid attention to gradation mainly in deverbal nouns (Palmgren 1904; Kastovsky 1968).¹⁰ In (22), the *ge*-alternation and *Ablaut* overlap in denominal, deadjectival and deverbal nouns, respectively:

- (22)
- a. *freond* 'friend'~*gefri:end* 'friends'
 - mann* 'man'~*gema:na* 'community'
 - mann* 'man'~*gemæ:nes* 'fellowship'
 - muð* 'mouth'~*gemy:ðe* 'junction of two streams'

10. But see Schuldt (1905) and Jensen (1913).

- sco:b* ‘shoe’~*gescy* ‘pair of shoes’
sibð ‘vision’~*gesiht* ‘faculty of sight’
 b. *full* ‘full’~*gefyllednes* ‘fulfilment’
wa:c ‘weak’~*gewæ:cednes* ‘weakness’
 c. *gangan* ‘to go’~*gegenga* ‘companion’
higgan ‘to think’~*gehygd* ‘mind’
bliebban ‘to laugh’~*geblæ:g* ‘derision’
hweorfan ‘to turn’~*gehwyrftnes* ‘return’

In (23), the *ge*-alternation and *Ablaut* overlap in denominal, deadjectival and deverbal adjectives:

(23)

- a. *andwlita* ‘face’~*geandwlatod* ‘shameless’
beorma ‘leaven’~*gebeormad* ‘leavened’
bill ‘bill’~*gebilod* ‘having a bill’
helm ‘protection’~*gebilmed* ‘helmeted’
land ‘land’~*gelend* ‘furnished with land’
mann ‘man’~*gemæ:ne* ‘overpowered’
ræ:d ‘advice’~*gery:de* ‘prepared, ready’
to:ð ‘tooth’~*gete:ðed* ‘toothed’
tre:ow ‘tree’~*getri:owed* ‘shafted’
 b. *lang* ‘long’~*gelenge* ‘belonging to’
 c. *cle:ofan* ‘to cleave’~*geclyft* ‘cleft’
dre:gan ‘to dry’~*gedrycned* ‘dried up’
higgan ‘to think’~*gehugod* ‘minded’
lustian ‘to delight in’~*gelysted* ‘desirous of’
sprecan ‘to speak’~*gespræ:ce* ‘eloquent’
sprecan ‘to speak’~*gespræ:celic* ‘incapable of being used alone’
stincan ‘to emit a smell’~*gestence* ‘odoriferous’

In (24), the *ge*-alternation and *Ablaut* overlap in denominal, deadjectival and deverbal weak verbs. Notice that the Adverb is input category in pairs like the ones in (24d):

(24)

- a. *beorma* 'leaven'~*gebirman* 'to leaven'
cruma 'crumb, fragment'~*gecrymian* 'to crumble'
land 'land'~*gelendan* 'to endow with land'
sco:b 'shoe'~*gescy:gean* 'to furnish with shoes'
stenc 'stench'~*gestincan* 'to smell'
strod 'robbery'~*gestry:dan* 'to rob'
- b. *a:rweorð* 'honourable'~*gea:rwierðan* 'to honour'
basu 'purple'~*gebaswian* 'to stain red'
bla:c 'bright'~*geblæcan* 'to whiten'
clæ:ne 'clean'~*gecla:snian* 'to cleanse'
crumb 'crooked'~*gecrympan* 'to curl'
be:ab 'high'~*gebe:han* 'to raise'
- c. *erfian* 'to inherit'~*geierfian* 'to stock with cattle'
falsian 'to cleanse'~*gefæ:lsian* 'to pass through'
hweorfan 'to turn'~*gebwierfan* 'to overturn'
sadian 'to be sated'~*gese:dan* 'to satisfy'
- d. *ofer* 'over'~*geyferian* 'to exalt'
uppe 'up'~*geyppan* 'to bring out'

Before producing the evidence of *ge-* and zero derivation, it is necessary to make a terminological remark. For some authors (including Kastovsky 1968), what I have termed *the pure alternation* would constitute incontestable evidence of zero derivation. In order to maximize the difference between the pure and the mixed alternation, though, I have preferred a more restricted view of zero derivation, in terms of which this morphological process implies the presence of an explicit inflectional ending, as in *co:c* 'cook'~*geco:cnian* 'to season food'. Under less strict approaches to zero derivation, instances of the pure alternation *byrd* 'burde'~*gebyrd* 'burdened', would be included under this heading. In (25) there follow some instances of zero derived nouns, adjectives and verbs, respectively (note that *clibbor* and *clibs* are graded forms):

(25)

- a. *bæc* 'back'~*gebæcu* 'back part'
bregdan 'to move quickly'~*gebregdnes* 'quick movement'
clibbor 'clinging'~*geclibs* 'clamour'

- b. *wind* 'wind'~*gewinde* 'blowing'
wi:r 'wire'~*gewi:red* 'made of wire'
wyrms 'virus'~*gewyrmsed* 'purulent'
- c. *ambibt* 'officer'~*geambibtan* 'to minister'
co:c 'cook'~*geco:cnian* 'to season food'
coro:na 'crown'~*gecoro:nian* 'to crown'
fyxe 'vixen'~ *gefyxan* 'to trick'
gle:d 'glowing coal'~*gegle:dan* 'to make hot'
gleng 'ornament'~*geglengan* 'to set in order'
hi:w 'appearance'~*gebi:wian* 'to transform'
midlen 'middle'~*gemidlian* 'to divide'
wæ:d 'dress'~*gewæ:dian* 'to clothe'
wand 'fear'~*gewandian* 'to hesitate'
wanba:l 'unsound'~*gewanba:lian* 'to make weak'
wedd 'wed'~*geweddian* 'to engage'
weg 'way'~*gewegan* 'to fight'
wigle 'divination'~*wiglian* 'to take auspices'
wlenc 'wealth'~*gewlencan* 'to enrich'
wynsum 'winsome'~*gewynsummian* 'to rejoice'

Whereas zero derivation and the *ge*-alternation co-occur in a significant number of verbs (certainly more than nouns and verbs), it is interesting that affixation and the *ge*- alternation in verbs is restricted to these three instances only:

(26)

- a. *eftgian* 'to repeat'~*geeftgian* 'to restore'
b. *elðe:odgian* 'to live abroad'~*geelðe:odgian* 'to make strange'
c. *o:nettan* 'to hurry'~*geo:nettan* 'to get quickly'

The *ge*-alternation does not co-occur with affixation in nouns very often. The nominal affixes found in the mixed alternation, by order of frequency, are *-nes*, *-ung*, *-end*, *-en* and *-scipe*, as is shown, respectively, by (27a)-(27e). Note the graded forms *bre:san*~*gebry:sednes*:

(27)

- a. *bi:geng* 'practice'~*gebi:gednes* 'declension'
bre:san 'to bruise'~*gebry:sednes* 'bruising'
bund 'bundle'~*gebundennes* 'obligation'
cne:orism 'generation'~*gecne:orenes* 'generation'
gripe 'grip'~*gegripennes* 'seizing'
hielde 'slope'~*gehieldnes* 'observance'
styrenes 'power of motion'~*gestyrenes* 'tribulation'
- b. *tru:wa* 'fidelity'~*tru:wung* 'confidence'
- c. *edle:an* 'reward'~*geedle:anend* 'rewarder'
fre:o 'freedom'~*gefne:ogend* 'liberator'
ba:lig 'holy'~*geba:lgigend* 'sanctifier'
staðolian 'to fix'~*gestaðoliend* 'founder'
- d. *byrgan* 'to bury'~*gebyrgen* 'grave'
byrðen 'burden'~*gebyrðen* 'child'
- e. *broðorscipe* 'brotherliness'~*gebroðorscipe* 'brotherhood'

The adjective is the category in which the *ge*-alternation co-occurs with affixation most often. The suffix *-ed* clearly outnumbers the other four affixes (*-lic*, *-en*, *-ende*, and *-sum*). The only graded forms are *ni:edan*~*geny:denlic*:

(28)

- a. *beard* 'beard'~*gebearded* 'bearded'
cosp 'fetter'~*gecosped* 'fettered'
crog 'saffron'~*gecroged* 'saffron-hued'
dærst 'leaven'~*gedærsted* 'leavened'
enge 'narrow'~*geenged* 'troubled'
fe:re 'company'~*gefe:red* 'associated'
glo:f 'glove'~*geglo:fed* 'gloved'
hæ:re 'lock of hair'~*gebæ:red* 'hairy'
hefe 'weight'~*gehefed* 'weighed down'
hofer 'hump'~*gehoferod* 'humpbacked'
hu:s 'house'~*gehu:sed* 'furnished with a house'

- hylc* 'bend'~*gehylced* 'bent'
le:f 'feeble'~*gele:fed* 'weak'
leger 'bed'~*gelegered* 'confined to bed'
pi:l 'pointed object'~*gepi:led* 'spiked'
sle:fan 'to slip clothes on'~*gesle:fed* 'furnished with sleeves'
streng 'severe'~*gestrenged* 'formed'
targa 'shield'~*getarged* 'furnished with a shield'
weall 'wall'~*geweallod* 'walled'
winter 'year'~*gewintred* 'aged'
wi:r 'wire'~*gewi:red* 'made of wire'
wyrms 'virus'~*gewyrmsed* 'purulent'
- b. *bi:geng* 'practice'~*gebi:gendlic* 'inflectional'
hiede 'slope'~*gebi:edelic* 'safe'
ni:edan 'to compel'~*geni:ededlic* 'compulsory'
ni:edan 'to compel'~*geny:denlic* 'compulsory'
wrixl 'change'~*gewrixlic* 'alternating'
- c. *fæder* 'father'~*gefæderen* 'born of the same father'
hamm 'enclosure'~*gehammen* 'patched'
lið 'fleet'~*geliðen* 'having travelled much'
- d. *cosp* 'fetter'~*gecospende* 'fettered'
- e. *beald* 'custody'~*gebealdsum* 'provident'

Along with the higher co-occurrence of adjectives and nouns derived by affixation with the *ge*-alternation, examples (26), (27) and (28) are also telling us that whereas the three instances of verbs in (26) are prefixal derivatives, the nouns and adjectives rendered, respectively, by examples (27) and (28) are suffixal derivatives. Another lesson that can be learned from examples (26)-(28) has to do with the affixes that do not co-occur with the *ge*-alternation. Considering verbal derivatives, the *ge*-alternation never co-occurs with the verbal prefixal quantifiers *ofer-* (as in *oferspercan* 'speak too much'); neither does it co-occur with the telic prefixes *for-*, *of-* and *to-* (as in *forcuman* 'destroy', *ofni:htan* 'to gore to death' and *tobla:wān* 'to blow to pieces'). The number of co-occurrences with other telic verbal affixes like *be-*, and *on-* (illustrated, respectively by *gebe:agian* 'to crown' and *geonli:cian* 'to make like') is extremely low. In this line, two-thirds of *ed*-prefixed verbs can take *ge-*, but the affix is associated with the telic meaning (as

in *geedbyrdan* 'to regenerate') rather than with the iterative one (as in *edreccan* 'to chew'). Tentatively, the meaning of verbal *ge-* will have to be found in areas near repeatedness and away from quantification. Regarding telicity, the evidence turned up by affix combination seems inconclusive. Although the aim of this paper is not to draw conclusions regarding the meaning of *ge-*, I concur with Lindemann's (1970: 63) statement that *ge-* conveys iterative *Aktionsart*. On the other hand, I diverge from Lindemann's (1970: 64) conclusions on the question of monosemy: even though the functions of verbal *ge-* could be reduced to a single descriptive label, I have noted the expression of nominal aspect in pairs like *ba:n* 'bone'~*geba:n* 'bones'.

6. CONCLUSION

I have established two aims for this research: to offer a descriptive account of the *ge-* alternation that goes beyond the bounds of an only category and to test the descriptive adequacy of the lexical database of Old English derivational morphology *Nerthus* on qualitative and quantitative grounds. To conclude, I report the contributions of my analysis in these respects.

Both quantitatively and qualitatively, *ge-* is the most widespread affix in Old English. On quantitative grounds, it can be affixed to nearly nine per cent of the predicates of the language. On qualitative grounds, it distributes over all lexical categories, except the Adposition. Considering the morphological processes in which it takes place, *ge-* partakes in recursive and non-recursive derivation, as well as in intra-categorical and inter-categorical derivation. Moreover, the *ge-* alternation co-occurs with *Ablaut*, zero derivation and affixation.

As regards the descriptive adequacy of *Nerthus*, several remarks are in point. By launching simple searches on *Nerthus*, I have been able to draw exhaustive evidence of *ge-* affixation and the mixed alternation, both with *Ablaut* and zero derivation. By launching combined searches on *Nerthus*, I have got exhaustive evidence of the mixed alternation with affixation, too. I have also gathered exhaustive evidence of the pure alternation by means of a simple search, although I have offered a sample only for reasons of space. The amount of qualitative and quantitative evidence of *ge-* drawn from *Nerthus* has much to do with the organisation of its fields: being a database of derivation, *Nerthus* has paid special attention to the affix *ge-*, given its frequency and distribution. All predicates are marked +*ge*, -*ge* or ±*ge*, which contributes to maximize the results of combined searches. At the same time, *Nerthus* requires more formalised meaning definitions of Old English lexical items so that ±*ge* predicates can be properly broken down.

Martín Arista and Martín de la Rosa (2006) and de la Cruz Cabanillas (fc) are contributions in this direction, but more research is needed in this area.

REFERENCES

- Adelung, J. C. 1796. *Grammatisch-Kritisches Wörterbuch der Hochdeutschen Mundart*. Leipzig.
- Benson, T. 1701. *Vocabularium Anglo-Saxonicum*.
- Bernhardt, E. 1870. "Ge- als Hilfsmittel bei der gotischen Conjugation." *ZfdPh* II: 158-166.
- Bybee, J. 1985. *Morphology. A Study of the Relation between Meaning and Form*. Amsterdam: John Benjamins.
- Clark Hall, J. R. 1996. *A Concise Anglo-Saxon Dictionary*. Toronto: University of Toronto Press.
- de la Cruz Cabanillas, I. Forthcoming. "Semantic Primes in Old English: A Preliminary Study of Descriptors." *SELIM*.
- de la Cruz, J. 1975. "Old English Pure Prefixes: Structure and Function." *Linguistics* 145: 47-81.
- Dorfeld, K. 1885. *Über die Function des Präfixes ge- (got. ga-) in der Composition mit Verben, Teil I: Das Präfix bei Ulfilas und Tatian*. Giessen.
- Grimm, J. 1878. *Deutsche Grammatik*. Berlin.
- Healey, A. di Paolo. 2003. *The Dictionary of Old English in Electronic Form A-F*. Toronto: Dictionary of Old English Project, Centre for Medieval Studies, University of Toronto.
- Hiltunen, R. 1983. *The Decline of the Prefixes and the Beginnings of the English Phrasal Verb*. Turku: Tutun Yliopisto.
- Hinderling, R. 1967. *Studien zu den starken Verbalabstrakten des Germanischen*. Berlin: Walter de Gruyter.
- Hollmann, E. 1936. *Untersuchungen über Aspekt und Aktionsart unter besonderer Berücksichtigung des Altenglischen*. Jena.
- Horgan, D. 1980. "Patterns of Variation and Interchangability in some Old English Prefixes." *Neuphilologische Mitteilungen* 91: 127-130.
- Jensen, J. 1913. *Die I. und II. Ablautsreihe in der ae. Wortbildung*. Kiel: H. Fiencke.
- Kastovsky, D. 1968. *Old English Deverbal Substantives Derived by means of a Zero Morpheme*. PhD Dissertation. Tübingen: Eberhard-Karls-Universität.

- Kastovsky, D. 1986. "Deverbal nouns in Old and Modern English: from stem-formation to word-formation." *Historical Semantics-Historical Word Formation*. Ed. J. Fisiak. Berlin: Mouton de Gruyter. 221-261.
- Kastovsky, D. 1990. "The typological status of Old English Word Formation." *Papers from the 5th International Conference on English Historical Linguistics*. Eds. S. Adamson, V. Law, N. Vincent and S. Wright. Amsterdam: John Benjamins. 205-224.
- Kastovsky, D. 1992. "Semantics and vocabulary." *The Cambridge History of the English Language I: The Beginnings to 1066*. Ed. R. Hogg. Cambridge: Cambridge University Press. 290-408.
- Krapp and Kennedy. 1929. *An Anglo-Saxon Reader*. New York.
- Lenz, P. 1886. *Der syntactische Gebrauch der Partikel "ge" in den Werken Alfreds des Grossen*. Darmstadt.
- Lindemann, J. W. R. 1953. "Old English preverbal ge-: a re-examination of some current do." *Journal of English and Germanic Philology* 64: 65-83.
- Lindemann, J. W. R. 1970. *Old English Preverbal Ge-: Its Meaning*. Charlottesville: Virginia University Press.
- Lorz, A. 1908. *Aktionsarten des Verbums in Beowulf*. Würzburg. Backers Universitätsbuchdruckerei.
- Martens, H. 1863. "Die verba perfecta in der Nibelungedichtung." *KZ* XII (31-41): 325-335.
- Martín Arista, J. 2006. "Alternations, relatedness and motivation: Old English A-." *Where Grammar Meets Discourse: Functional and Cognitive Perspectives*. Eds. P. Guerrero Medina and E. Martínez Jurado. Córdoba: Servicio de Publicaciones de la Universidad de Córdoba. 113-132.
- Martín Arista, J. and E. González Torres. 2005. "Productivity as type frequency in Old English verbal prefixation." Paper presented at the 2005 Conference of the Australian Linguistic Society.
- Martín Arista, J. and V. Martín de la Rosa. 2006. "Old English Semantic Primes: Determiners, Substantives and Quantifiers." *ATLANTIS* 28 (2): 9-28.
- Martín Arista, J., L. Caballero González, E. González Torres, A. Ibáñez Moreno and R. Torre Alonso. Forthcoming. *Nerthus: An Online Lexical Database of Old English*.
- Nicolai, O. 1907. *Die Bildung des Adverbs im Altenglischen*. Kiel: H. Fiencke.
- Niwa, Y. 1966. "The prefix ge- added to *niman* in the OE Gloss to the Lindisfarne Gospels." *Studies in English Literature* (Tokyo). English number: 65-79.

- Palmgren, C. 1904. *English Gradation-Nouns in Their Relation to Strong Verbs*. Uppsala: University of Uppsala.
- Samuels, M. L. 1949. "The *Ge-* Prefix in the OE Gloss to the *Lindisfarne Gospels*." *Transactions of the Philological Society*: 62-116.
- Schön, E. 1905. *Die Bildung des Adjectivus im Altenglischen*. Kiel: Verlag von Robert Cordes.
- Schuldt, C. 1905. *Die Bildung der schwachen Verba im Altenglischen*. Kiel: Verlag von Robert Cordes.
- Sosa Acevedo, E. Forthcoming. "The Semantic Representation of Anglo-Saxon (*Ge-*) *séon* and (*Ge-*)*lócian*: Syntactic Evidence and Meaning Decomposition." *RæL-Revista Electrónica de Lingüística Aplicada* 6.
- Stark, D. 1982. *The Old English weak verbs. A diachronic and synchronic analysis*. Tübingen: Niemeyer.
- Streitberg, W. 1943. *Urgermanische Grammatik*. Heidelberg: Winter.
- Swaay, H. A. J. van. 1901. *Het prefix ga- gi- ge-, zijn geschiedniss, en zijn invloed op de 'actionsart', meer bijzonder in hed Oudnederfranzisch en het Oudsaksisch*. Utrecht.
- Van Valin, R. and R. LaPolla. 1997. *Syntax: Structure, Meaning and Function*. Cambridge: Cambridge University Press.
- Wackernagel, W. 1878. *Altdeutsches Wörterbuch*. Basel.
- Weman, B. 1933. *Old English Semantic Analysis and Theory with Special Reference Denoting Locomotion*. Lund: Lindstedts Univ.-Bokhandel.
- Wustmann, R. 1894. *Verba Perfectiva namentlich im Heliand*. Leipzig.

