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THE ROLE OF DERIVATIONAL PARADIGMS WITH ADJECTIVAL BASE IN OLD ENGLISH WORD-FORMATION

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Abstract: *The aim of this article is to identify the primary adjectives of Old English as well as to gather the derivational paradigms that revolve around them. All in all, 459 primary adjectives are identified, which function as the base of 6,587 derivatives. Two conclusions are drawn from the analysis. In the first place, the concept of derivational paradigm contributes to the explanation of the overall organization of the lexicon, while allowing for the discussion of questions that are at the core of current morphological theory, such as recursivity and productivity. Secondly, that primary adjectives play a significant role in Old English derivation. Even though they are not as productive as strong verbs, primary adjectives function as base of derivation for a significant number of non-basic terms, which, moreover, belong to all lexical categories and nearly all grammatical classes.*

Keywords: *Old English, word-formation, derivational paradigm, adjective, primary adjective, basic adjective.*

1. INTRODUCTION

This article deals with Old English word-formation and, more specifically, with sets of derivatives that are morphologically related to an adjective such as *glēaw* 'penetrating, keen, prudent, wise, skilful; good', as shown below:*

(1)

a. Adjectives: *æglēaw* 'learned in the law', *cræftglēaw* 'skilful, wise', *ferhðglēaw* 'wise, prudent', *foreglēaw* 'foreseeing, provident, wise, prudent', *frēaglēaw* 'very wise', *glēawferhð* 'prudent', *glēawhȳdig* 'thoughtful, wise, prudent', *glēawhycgende* 'thoughtful, wise, prudent', *glēawlic* 'wise, prudent, skilful, diligent', *glēawmōd* 'wise, sagacious', *hreðerglēaw* 'wise, prudent', *hyrgeglēaw* 'prudent in mind', *mōdglēaw* 'wise', *steorglēaw* 'clever at astronomy', *unglēaw* 'ignorant, foolish, unwise', *wordglēaw* 'skilful in words'.
b. Adverbs: *foreglēawlīce* 'providently, prudently', *glēawe* 'wisely, prudently, well' *glēawlīce* 'prudently, wisely, clearly, well', *unglēawlīce* 'unwisely, imprudently'.
c. Nouns: *gereordglēawnes* 'skill in singing', *glēawnes* 'wisdom, prudence, skill, penetration; diligence; sign, token', *glēawscipe* 'wisdom, thoughtfulness, diligence; proof, indication, test', *unglēawnes* 'folly, ignorance', *unglēawscipe* 'folly'.

Example (1) shows members of the lexical categories adjective, adverb and noun resulting from morphological processes of affixation and compounding on the base *glēaw*. In this study, a set of lexical items such as (1) is termed a *derivational paradigm*, while the base of derivation of the paradigm is called the *primary adjective*. This research aims to identify the primary adjectives in Old English as well as to gather the derivational paradigms that revolve around them, which can be regarded as a contribution in a triple direction.

In the first place, this undertaking contributes to the refinement of the lexical data contained by the lexical database of Old English *Nerthus* (www.nerthusproject.com). For this purpose, the whole database, including approximately 30,000 entries, has been processed in order to gather the derivational paradigms of adjectives, either by identifying completely new paradigms or by splitting the existing derivational paradigms of a strong verb.

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Secondly, this work contributes to the programme of research in the lexicology and derivational morphology of Old English represented by Caballero González *et al.* (2004-2005), de la Cruz Cabanillas (2007), Ibáñez Moreno (2007), González Torres (2009), Guarddon Anelo (2009a, 2009b), Martín Arista (2005, 2006, 2008, 2009, 2010a, 2010b, 2010c, 2011a, 2011b, 2011c, 2012a, 2012b, 2012c, 2013, fc.), Martín Arista and Cortés Rodríguez (fc.), Martín Arista and Martín de la Rosa (2006), Pesquera Fernández (2009), Torre Alonso *et al.* (2008), Torre Alonso (2009) and. This research continues the line of research opened by Kastovsky (1968, 1971, 1986, 1989, 1990, 1992, 2005, 2006). However, with the exception of two publications by Martín Arista (fc.-b, fc.-d), the lexical class of the adjective has received little attention. For this reason, this journal article deals specifically with the adjective. Regarding the question of derivational paradigms, Pesquera Fernández (2009) carried out a partial analysis of strong verb paradigms. The methodology used in that study is adapted to apply to adjectival paradigms in the present work.

Thirdly, this piece of research contributes to the compilation of the complete adjectival paradigms. In this sense, it enlarges the analysis carried out by Seebold (1970), Heidermanns (1993) and Orel (2003), whose main aim is the description of Germanic and, as a result, give only succinct information on Old English.

Previous work in the area of word-formation in the old Germanic languages has stressed the importance of derivation from strong verbs, which has had two important effects on the proposals for the organization of the Old English lexicon made so far. Firstly, that the importance of the process of zero derivation has been overestimated and secondly, that the overall picture of the Old English lexicon is very conservative since it groups together many lexical items that cannot be related to the base of derivation by means of a productive process. Consider, in this respect, the following example:

(2)

grim 'fierce, savage; dire, severe, bitter, painful', *ferhðgrim* 'savage', *grimmān* 'terrible sin', *heaðugrim* 'fierce', *heorugrimm* 'savage, fierce', *hetegrim* 'fierce, cruel', *hygegrim* 'savage, cruel', *nīðgrim* 'fierce, hostile', *searogrim* 'fierce, formidable', *wælgrim* 'fierce, violent, bloody, cruel; fateful, dire', *āgrimsian* 'to provoke, irritate', *singrim* 'exceeding fierce', *unwælgrim* 'gentle, merciful', *grīmme* 'savagely, cruelly, severely', *grimful* 'fierce, violent', *grimlīce* 'fiercely, severely, cruelly', *grimlic* 'fierce, blood-thirsty, cruel, terrible, severe', *grimnes* 'ferocity, cruelty; severity', *grimsian* 'to rage', *grimsung* 'harshness, severity', *wælgrimlīce* 'fiercely', *wælgrimnes* 'cruelty, torture', *grimena* 'caterpillar', *grimman* 'to rage; hasten on'.

If, following Hinderling (1967) and Kastovsky (1992), who hold that the strong verb is the starting point of Germanic derivation, the strong verb *grimman* is considered the basic term from which all derivatives in the paradigm derive, the adjective *grim* is zero derived from the strong verb and produces many compounds of its own, including *ferhðgrim*, *heaðugrim*, *heorugrimm*, *hetegrim*, *hygegrim*, *nīðgrim*, *searogrim*, etc. If, on the contrary, the adjective *grim* is the basic term around which the derivational paradigm is organized, this has the significant consequence of reducing the scope of zero derivation to the formation of the strong verb *grimman*.

For the identification of the basic adjectives of Old English I draw on the study in Germanic primary adjectives by Heidermanns (1993) and, to a lesser extent, on the etymological dictionaries by Seebold (1970) and Orel (2003). As I have already pointed out, the data for the analysis have been retrieved from *Nerthus* (May 20, 2010), including 30,000 entries and the derivational paradigms of strong verbs.

2. THEORETICAL AND METHODOLOGICAL FOUNDATIONS

In a nutshell, some important aspects of previous research in the area on which I draw include: (i) the associative character of the Old English lexicon, as described by Kastovsky (1992); (ii) the primary character of the Germanic strong verb, which, as put forward by Hinderling (1976), Seebold (1970), Kastovsky (1992) and Bammesberger (1992), represents the starting point of Germanic word-formation; (iii) the existence of a primary class of Germanic adjectives which, at least partially, cannot be morphologically related to strong verbs, as Heidermanns (1993) claims; (iv) the existence of a typological shift in the Old English lexicon, which changes from variable base morphology to invariable base morphology, as Kastovsky (2006) puts it; and (v) the characteristics of recategorization and recursivity as defining the derivational side of morphology, as Martín Arista (2009) has remarked.

I follow Pounder (2000) on the relevance of the notion of derivational paradigm, established as a counterpart of the inflectional paradigm and with explanatory value at the paradigmatic dimension of the lexicon. For Pounder (2000:82), the derivational paradigm is *a set of paradigmatic relations between word-formations sharing a lexemic root.* This author distinguishes between the paradigm as a morphological structure, consisting of a set of paths between a base and the operations that produce its derivatives, and the lexical paradigm involving a structured

pattern of instructions for operations on stems. The former is valid for a whole lexical class and the latter is the individual paradigm of a member of a lexical class.

The difference between the morphological and the lexical paradigm rests on the notions of degree of abstractness and dynamism. The morphological paradigm defines a set of possible operations that are instantiated (or not) by the lexical paradigm. Regarding this difference, Pounder (2000:86) excludes suppletion or insertion from the paradigm of lexemes that do not hold a regular relation of form to the base of the paradigm because a shared lexemic origin must be present for the establishment of a word-formation relation. Derivational paradigms thus defined reinforce the associative character attributed to the Old English lexicon by Kastovsky (1992:294) by considering series of derivatives like *agan* 'to go'; *began* 'to go over', *begang* 'practice', *beganga* 'inhabitant', *begenge* 'practice', *bigengere* 'worker', *bigengestre* 'maiden', etc. from *gan* 'to go'. In Present-day English we find a dissociated lexicon in which a Germanic lexical item can be related semantically to non-Germanic derivatives as in *mouth: oral, father: paternal, sun: solar*, etc. As for the question of dynamism, the morphological paradigm, as a set of operations, represents the dynamic part of word-formation, whereas the lexical paradigm, being a product, constitutes the static part of word-formation.

Also of relevance to the distinction between the morphological and lexical paradigm is the question of defectivity or formations resulting from correct paths (units and operations) in the morphological paradigm that are not attested in the lexical paradigm. A case in point is provided by the compound *glīwhlēoðriendlic* 'musical', the adjunct of which *glīw* is attested whereas its base *hlēoðriendlic* is not (Torre Alonso *et al.* 2008) although the derivation of *hlēoðriend* from *hleoðrian* is stepwise, the adjective *hlēoðriendlicø* constitutes a lexical gap marked with the subindex *ø*. The full derivation, consequently can be stated as *hleoðrian* > *hleoðriend* > *hleoðriendlic*$_{ø}$ > *glīwhleoðriendlic* the hypothetical predicate is an intermediate step between *hleoðriend* to *glīwhleoðriendlic*. A derivation like *hleoðrian* > *hleoðriend* > *hleoðriendlicø* is well attested in other instances involving a present participle of a weak verb to which the suffix *-lic* is attached, as in *gītsiendlic* 'insatiable', *līciendlic* 'agreeable', *mynegiendlic* 'hortatory', *sciriendlic* 'derivative' and *þrōwiendlic* 'suffering'.

On the question of zero derivation, I draw on González Torres (2009), who distinguishes between zero derivation proper and derivation by inflectional means, and Martín Arista (2010a), who has put forward a typology of zero derivation phenomena in Old English which includes: (i) zero derivation with explicit inflectional morphemes and without explicit derivational morphemes; (ii) zero derivation without explicit or implicit morphemes, either inflectional or derivational; (iii) zero derivation without inflectional or derivational morphemes but displaying ablaut; and (iv) zero derivation with ablaut and formatives that can no longer be considered productive affixes, that is, umlaut and inflection with derivational function (or at least, expressing morphological contrast) are included under the term of zero derivation. This up-to-date revision of the notion of zero derivation has been central to the reorganization of a number of adjectival paradigms analysed in this article.

As regards the notion of the adjective as the source of derivation, the crux of this research, I draw on Pilch (1970), Campbell (1987), Kastovsky (1992) and Lass (1994). The lexical class of the adjective is the source of derivation, by means of productive processes of affixation and compounding, of nouns, verbs, adverbs and other adjectives. Beginning with nouns, deadjectival members of this category result from the attachment of the suffixes: *-dom, -ing, -ling, -ness, -scipe, -ð(o)/-t* and *–wist.* The suffixes *–cund, -fæst, -feald, -full, -ig, -lic, -sum* and *-wende* partake in the formation of deadjectival adjectives. Deadjectival verbs are formed by means of the attachment of the following suffixes: *-ettan, -læcan, -cian* and *–sian*. It is important to note that the adjective is the main source of derivation of the adverb. Nicolai (1907) distinguishes deadjectival adverbs in positive grade ending in *–e*, deadjectival adverbs in positive grade ending in *–līce*, deadjectival adverbs in positive grade ending in *–a*, and comparative grade adverbs and superlative grade adjectival adverbs. The adverbs derived from adjectives by means of *–e* can be classified on thematic grounds as follows: *a*-stem, *ja*-stem, *ja*-stem with umlaut from the adjective, *wa*-stem, and *u*-stem. The second group of Old English deadjectival adverbs, to which most Old English adverbs belong, includes adverbs in positive grade ending in *–līce*. The classification is based on thematic vowel of the adjective again: *a*-stem, *ja*-stem, *wa*-stem, *u*-stem.

There is a group of adverbs that take part in adjectival formations, including *-sum, -bære, -fæst, -wende, -weard, -cund* and *–feald.* The adverbs in positive grade ending in *–a* represent the third subclass of deadjectival adverbs. According to Campbell (1987), the suffix *–a* is characteristic of independent adverbs. The fourth subgroup of Old English adverbs derived from adjectives consists of comparative grade adverbs, inflected for the comparative or the superlative, both in *–ost* and *–est*. Turning to compounding, adjectives can be found in the formation of nominal compounds in instances of adjective + noun and verbal adjective (past participle) + noun. In adjective compounding, adjectives turn up in the following patterns: noun + adjective, adjective + adjective, adjective + present participle, adjective + past participle and adverb + adjective.

3. THE DERIVATIONAL PARADIGMS OF OLD ENGLISH PRIMARY ADJECTIVES

As has been remarked above, the aim of this article is to identify the primary adjectives of Old English as well as to gather the derivational paradigms that can be built from them. The derivational paradigms that appear below result from the processing of the whole lexical database of Old English *Nerthus* (www.nerthusproject.com), which provides about 30,000 lexical entries as well as the derivational paradigms of strong verbs. With this basic information, the compilation of the adjectival paradigms has entailed both the identification of completely new adjectival paradigms and the splitting of the existing derivational paradigms of a strong verb into two parts, the verbal part and the adjectival part. A more detailed account of the analysis process follows.

First of all, it has been necessary to classify adjectives on the grounds of their role in word-formation. There are three possible types, namely derived adjectives, underived adjectives of the basic type and underived adjectives of the primary type. For instance, *ēstful* 'devout' is a derived adjective because it results from the suffixation of the affix *-ful* to the base of derivation *ēste* 'gracious'. Underived adjectives of the basic type are adjectives that cannot be related to a base of derivation by means of a morphological process of word-formation and, furthermore, do not have derivatives of their own. For example, *ǣdre* 'at once, directly, instantly, quickly; fully, entirely' qualifies as a basic adjective. The total figure of basic adjectives that have been found throughout the analysis is 118. Primary adjectives constitute the base of derivation of derivational paradigms: 459 were identified in the analysis. As an example the adjective *dimm '*dim, dark, gloomy, obscure; blurred, faint; wicked; wretched, grievous' holds formal and semantic relations to the following derivatives:

(3)

ādimmian 'to become dim or dull, to darken, obscure', *dimhīw* 'of dark colour', *dimhof* 'place of concealment', *dimhofe* 'place of concealment', *dimhūs* 'prison', *dimlic* 'dim, obscure, secret, hidden', *dimmian* 'to be or become dim', *dimmnes* 'dimness, darkness, obscurity, gloom; evil, obscuration, moral, obliquity; a dark place', *dimscūa* 'darkness, sin', *fordimmian* 'to obscure, darken'.

This paradigm is organised on the primary adjective *dimm* in such a way that all derivatives inherit formal and semantic features from the primary adjective. The derivational paradigm of *dimm* comprises a total of 10 derivatives: 2 adjectives, 5 nouns and 3 verbs, which result from different morphological processes of word-formation. Primary adjectives, therefore, generate a derivational paradigm consisting of all the words that are semantically and morphologically related to the base of derivation, after which the paradigm is called. For instance, the primary adjective *gescēad* 'reasonable, prudent, calculated' contains compounds such as *gescādwīs* 'sagacious' (from *gescēad* 'reasonable' and *wīs* 'wise'), zero derivatives like *scēad* 'separation, distinction; understanding', and affixal derivatives of the type *ungescēad* 'want of intelligence, senselessness' and *gescēadlīce* 'reasonably, rationally'. The rest of the derivational paradigm of the primary adjective *gescēad* is given in (4) by morphological process:

(4)

a. Compounding: *gescādwyrt* 'oxeye', *rihtgescēad* 'right understanding', *tungolgescēad* 'astrology'.
b. Prefixation: *tōgescēadan* 'to expound, interpret', *ungescēadlic* 'unreasonable, indiscreet', *ungescēadwīs* 'unintelligent, irrational, imprudent, foolish', *ungescēadlīce* 'unreasonably, absurdly', *ungescēadwīslic* 'unintelligent, irrational, imprudent, foolish'.
c. Suffixation: *(ge)scēadwīs* 'sagacious, intelligent, rational, reasonable, wise', *(ge)scēadwīslic* 'sagacious, intelligent, rational, reasonable, wise', *gescēadenlīce* 'severally', *gescēadlīce* 'reasonably, rationally', *gescēadlic* 'reasonable, discreet, wise, accurate', *gescēadnes* 'a decree', *scēadwīsnes* 'sagacity, reason; discrimination, discretion; separation; reckoning', *ungescēadwīslīce* 'indiscreetly, unreasonably, foolishly', *ungescēadwīsnes* 'want of intelligence, indiscretion, folly, ignorance'.
d. Zero derivation: *ungescēad* 'unreasonable; excessive'.

As can be seen in the full derivational paradigm in (4), the question of recursivity arises. In effect, the gradual derivation of *ungescēadlic* 'unreasonable, indiscreet' requires the previous derivation of *ungescēad* 'unreasonable; excessive' from *gescēad* 'reasonable, prudent; calculated'.

The second stage of the analysis has been to determine the category of the base of derivation of sets of semantically and morphologically lexical items. In general, adjectives are the base of derivation of all categories, except strong verbs (but see Martín Arista 2010a). New adjectival paradigms have been proposed whenever the meaning of an adjective morphologically related to a strong verb differs from the meaning of the strong verb in question. This is the case with *dearf* 'bold', and its derivatives *dearflic* 'bold, presumptuous', *dearfscipe* 'boldness, presumption' and *māndeorf* 'bold in evil?', which are morphologically related to the strong verb *(ge)deorfan* 'to exert oneself, labour; be in peril, perish, be wrecked'. More problematic are instances in which adjectives that are morphologically related to a strong verb do not have a different meaning to that of the strong verb. A relevant example is provided by the pair *calan* 'to grow cool or cold' and *ceald* 'cold':

(5)

ceald 'cold', *ācealdian* 'to become cold', *ælceald* 'altogether cold, very cold', *brimceald* 'ocean-cold, *ceald* 'coldness, cold', *cealde* 'coldly', *cealdheort* 'cruel', *cealdian* 'to become cold', *cealdnes* 'coldness, cold', *dægsceald* '(shield by day?) sun', *hrīmceald* 'icy cold' *īsceald* 'icy cold', *ofercеald* 'excessively cold', *sincald* 'perpetually cold', *sincaldu* 'perpetual cold', *snāwceald* 'icy-cold', *wælceald* 'deadly-cold', *wintercеald* 'wintry-cold'.

As a general rule, a semantic criterion has been adopted regarding pairs like *calan* 'to grow cool or cold' and *ceald* 'cold'. Provided that the adjective cannot be decomposed semantically, it is considered the base of the paradigm if the strong verb displays the adjective in its meaning definition and the adjective does not display the strong verb similarly. Following this rule, the paradigm has been built on the base of *ceald*, rather than *calan*.

Thirdly, it has often been necessary to enlarge the inventory of adjectives provided by Heidermanns (1993). For instance, this author lists *getæl* 'numerous', whereas, after retrieving the relevant information from *Nerthus*, the resulting paradigm includes *getæl 2* 'numerous', *getæl 1* 'number' and *talu* 'number'.

Fourthly, the overall organization of some paradigms as given by *Nerthus* has been modified. This is the case with *ēste* 'gracious, liberal', given in (6):

(6)

ēste 'gracious, liberal', *ēst* 'favour, grace, bounty, kindness, love; pleasure; harmony, consent', *ēstan* 'to live luxuriously', *ēstelīce* 'courteously; luxuriously', *ēstelic* 'kind, gracious; devout; delicate, dainty (of , food)', *ēstful* 'gracious, devoted, devout; fond of', *ēstfullīce* 'kindly, devotedly', *ēstfulnes* 'devotion, zeal; daintiness; luxury, lechery', *ēstgeorn* 'delicate, fond of luxuries', *ēstig* 'gracious, liberal', *ēstines* 'benignity', *ēstmete* 'dainty (food), delicacy, luxury', *ēstnes* 'bliss', *ēstsum* 'freely, willingly, gladly'.

Finally, other paradigms have been newly created. This is the case with *fals* 'false', which includes *fals* 'falsehood, fraud, counterfeit'. These instances give rise to a paradigm that has not been identified by previous research. It comprises one derivative only, the zero derived noun *fals.*

By following the steps just described, the analysis of each derivational paradigm consists of the identification of the primary adjective, the specification of derivatives by category and morphological process, the assessment of recursivity and the information on etymology, as is demonstrated (7):

(7)

Primary adjective: *æðele* 'noble, aristocratic, excellent, famous, glorious; splendid, fine, costly, valuable; lusty, young; pleasant, sweet-smelling'.
Adjectives (9): *æðelboren* 'of noble birth, distinguished; free-born; inborn, natural', *æðelcund* 'of noble birth', *æðellic* 'noble, excellent', *efenæðele* 'equally noble', *fullæðele* 'very noble', *geæðele* 'natural, congenial, suitable', *onæðele* 'natural to', *unæðelboren* 'low-born', *unæðele* 'of low birth, ignoble, base'.
Adverbs (2): *æðellīce* 'nobly (BT)', *unæðelīce* 'ignobly, basely'.
Nouns (13): *æðelborennes* (f.) 'nobility of birth or nature; inborn nature', *æðelcundnes* (f.) 'nobleness', *æðelcyning* (m.) 'noble king', *æðelduguð* (f.) 'noble retinue', *æðeling* (m.) 'nobleman, chief, prince; king, Christ, God; man, hero, saint; in pl. men, people', *æðelinghād* (n.) 'princely state', *æðelnes* (f.) 'nobility, excellence', *æðelu* (fn.) 'nobility, family, descent, origin; nature; noble qualities, genius, talents, pre-eminence; produce, growth', *fæderæðelo* (np.) 'patrimony; paternal kinship', *rihtæðelcwēn* (f.) 'lawful wife', *rihtæðelo* (np.) 'true nobility', *sibæðeling* (m.) 'related noble', *unæðelnes* (f.) 'ignobility'.
Weak verbs (2): *geæðelian* (2) 'to make noble or renowned', *unæðelian* (2) 'to degrade, debase'.
Compounds (8): *æðelboren* 'of noble birth, distinguished; free-born; inborn, natural', *æðelcyning* (m.) 'noble king', *æðelduguð* (f.) 'noble retinue', *efenæðele* 'equally noble', *fæderæðelo* (np.) 'patrimony; paternal kinship', *rihtæðelcwēn* (f.)
'lawful wife', *rihtæðelo* (np.) 'true nobility', *sibæðeling* (m.) 'related noble'.
Prefixed (5): *fullæðele* 'very noble', *onæðele* 'natural to', *unæðelboren* 'low-born', *unæðele* 'of low birth, ignoble, base', *unæðelīce* 'ignobly, basely'.
Suffixed (9): *æðelborennes* (f.) 'nobility of birth or nature; inborn nature', *æðelcund* 'of noble birth', *æðelcundnes* (f.) 'nobleness', *æðeling* (m.) 'nobleman, chief, prince; king, Christ, God; man, hero, saint; in pl. men, people', *æðelinghād* (n.) 'princely state', *æðellīce* 'nobly (BT)', *æðellic* 'noble, excellent', *æðelnes* (f.) 'nobility, excellence', *unæðelnes* (f.) 'ignobility'.
Zero-derived (4): *æðelu* (fn.) 'nobility, family, descent, origin; nature; noble qualities, genius, talents, pre-eminence; produce, growth', *geæðele* 'natural, congenial, suitable', *geæðelian* (2) 'to make noble or renowned', *unæðelian* (2) 'to degrade, debase'.
Recursive (aff>aff) (2): *unæðelīce* 'ignobly, basely', *unæðelnes* (f.) 'ignobility'.
Etymology: *aðal(j)a-* (*-ula-*) 'angestammt'; *æðele, æðelra, æðerlest, geæðele, unæðele, æðelu, æðeling, æðelic, geæðelian.*

The derivational paradigm in (7) comprises derivatives of the adverbial, adjectival, nominal and verbal classes, among which nouns stand out, particularly affixed abstract nouns (*æðelcundnes* 'nobleness') and nominal compounds with adjectival adjunct (*æðelinghād* 'princely state'). Furthermore, derivatives are produced by all major word-formation processes, including compounding, prefixation, suffixation and zero derivation. Affixation is the most productive process, followed by compounding and zero derivation. Two instances of recursivity appear in (7), *unæðelīce* 'ignobly, basely' (*æðelīce*) and *unæðelnes* 'ignobility' (*æðelnes*). The figure is not very high if compared with the total derivatives of the paradigm, which displays 26 derived lexical items.

For the sake of comparison, the derivational paradigm of a primary adjective with fewer derivatives is offered in (8):

(8)
Primary adjective: *brant* 'deep, steep, high'.
Adjectives (1): *brandstæfn* 'high-prowed?'.
Nouns (1): *brenting* (m.) 'ship'.
Compounds (1): *brandstæfn* 'high-prowed?'.
Zero-derived (1): *brenting* (m.) 'ship'.
Etymology: *branta-* 'hochragend'; *brant (o), brenting.*

In spite of the very low number of derivatives of the primary adjective *brant* 'deep, steep, high', it is noteworthy that they fall into two lexical categories and are the result of two different word-formation processes. A discussion of the results of the analysis illustrated by examples (7) and (8) follows in the next section.

4. DISCUSSION OF RESULTS

The adjective is relevant to word-formation in Old English for two reasons. On the quantitative side, a large number of derivatives cluster around the paradigms of this lexical class. With a more qualitative approach, deadjectival lexical items belong to all major lexical categories, including the noun, strong verb, weak verb, adjective and adverb, as well as to other grammatical categories like the adposition, pronoun, numeral, conjunction and interjection. I comment on these aspects in turn.

Beginning with the quantitative perspective, the analysis has demonstrated that the adjective is a very productive lexical category. Only 118 basic (that is, without derivatives) adjectives have been identified, as opposed to the 459 primary adjectives that allow for the compilation of derivational paradigms. Moreover, 6,587 predicates have been gathered around primary adjectives. This figure represents more than 20% of the Old English lexicon as listed by *Nerthus*. Focusing on the lexical classes of the derivatives found in the paradigms, there are 2,821 nouns, 2,212 adjectives, 777 weak verbs, 673 adverbs and 72 strong verbs. In the grammatical classes we find 14 adpositions, 11 pronouns, 2 numerals, 2 interjections, 2 affixes and 1 conjunction. These data are shown in Table 1. The column of derivatives displays the total number of instances found in the deadjectival paradigms analysed in this work. The third column contains the percentage that the absolute figure constitutes within the total number of items of the lexical category in question found in deadjectival paradigms. The fourth column presents the percentage of the absolute figure in relation to the total number of items of the lexical category in the whole lexicon.

Table 1. Absolute and relative productivity by category.

Category	Derivatives (absolute)	Relative to adjectival paradigms (6,587=100%)	Relative to the whole lexical category
Nouns	2,821	42.82%	16.90 (16,689=100%)
Adjectives	2,212	33.58%	38.23 (5,785=100%)
Weak verbs	777	11.79%	19.71 (3,942=100%)
Adverbs	673	10.21%	40.68 (1,654=100%)
Strong verbs	72	1.09%	4.50 (1,598=100%)
Adpositions	14	0.21%	17.5 (80=100%)
Pronouns	11	0.16%	28.20 (39=100%)
Numerals	2	0.03%	3.84 (52=100%)
Interjections	2	0.03%	9.52 (21=100%)
Affixes	2	0.03%	1.17 (170=100%)
Conjunctions	1	0.01%	2.70 (37=100%)

As can be seen in Table 1, nouns and adjectives together represent more than 75% of the derivatives of primary adjectives. Weak verbs and adverbs form around 10% each, whereas the other categories are negligible on quantitative grounds. Of special interest among these is the strong verb, with 1% relative to adjectival paradigms and 4.5% relative to the whole lexicon. Table 1 also shows that approximately 40% of the lexical categories of adverb and adjective come from the derivational paradigms of adjectives. The figure of nouns relative to the whole lexical category is significantly lower (16%) than the figure relative to adjectival paradigms, in which 42.82% of derivatives belong to this lexical category. The interpretation of these data is that deadjectival formation is not as productive as other patterns for making new nouns. With respect to the whole lexicon, about 22% of the lexicon belongs in the derivational paradigms of primary adjectives.

By process, there are 2,524 compounds and 2,034 suffixal derivatives. Suffixation is far more frequent than prefixation, which contributes 997 derivatives. Zero derivation is practically as frequent as prefixation, giving rise to a total of 928 zero derived predicates. Finally, conversion produces 101 derivatives. These figures are displayed by Table 2, which is parallel to Table 1. The second column shows the total number of instances of each morphological process found in deadjectival paradigms. The third column gives the percentage that the absolute figure represents with respect to the total number of items produced by the process in question. The fourth column presents the percentage represented by the absolute figure in relation to the total number of items produced by the same process in the whole lexicon.

Table 2. Absolute and relative productivity by morphological process.

Processes	Derivatives (absolute)	Relative to adjectival paradigms (6,587=100%)	Relative to the whole process
Compounds	2,524	38.32	25.30 (9,975=100%)
Suffixed	2,034	30.88	30.79 (6,604=100%)
Prefixed	997	15.14	18.28 (5,454=100%)
Zero-derived	928	14.09	24.45 (3,794=100%)
Converted	101	1.53	46.33 (218=100%)

According to the data provided by Table 2, deadjectival derivational paradigms are mainly the product of compounding and suffixation, these processes accounting for nearly 70% of the total amount of derivatives. Prefixation and zero derivation produce around 15% each. It is noteworthy, in this respect, that suffixation has twice as many derivatives as prefixation, which indicates a clear preference for the former, zero derivation also representing a less productive process. When compared with the percentages found in the whole lexicon, it turns out that affixation presents similar figures, whereas compounding is more frequent in deadjectival paradigms than in the whole lexicon. On the other hand, zero derivation is less frequent in deadjectival paradigms than in the lexicon. These figures show that adjectives resort to compounding (and secondarily to affixation) rather than zero derivation for configuring their paradigms.

It is remarkable that recursive formations are not very frequent. Out of a total of 6,587 derivatives, only 413 are recursive. Recursive affixation (affix-affix) clearly outnumbers recursive compounding (compound as base of further compounding). There are 342 recursive affixal derivatives as opposed to 71 instances of recursive compounding only. It must be noted in this respect that I have analyzed only pure recursivity, that is, the feeding of a morphological process by instances of the same process (Torre Alonso 2009), thus leaving aside cases of affixation feeding compounding and compounding feeding affixation. In spite of this restriction, the figure of recursive word-formation is low. Tentatively, it can be held that deadjectival derivatives are not very productive, but more research is needed on this topic.

To conclude the quantitative analysis, a comparison with the paradigms of strong verbs is necessary. In the latest report on the research carried out by the

Nerthus project, Martín Arista (2010c) has remarked that 359 derivational paradigms of strong verbs have been gathered, in such a way that 18,850 predicates have been identified as belonging to these paradigms. This makes an average type productivity of 52.5 derivatives per paradigm. There are 459 deadjectival paradigms, which contain 6,587 derivatives, thus displaying an average productivity of type of 14.3 derivatives per paradigm. There are reasons to hold, consequently, that the derivational paradigms of adjectives are not as productive as those of strong verbs.

On the qualitative side, this research has demonstrated that, along with the strong verb, the adjective plays a significant role in the organization of the Old English lexicon. This agrees with Heidermanns (1993), who has identified the primary adjectives of Germanic, rather than Bammerberger (1965), Hinderling (1967), Seebold (1970) and Kastovsky (1968, 1992), since the latter authors have stressed the central character of the strong verb to Germanic derivation, thus paying little attention to the derivatives based on other lexical categories. Apart from the quantitative data offered above, it must be noted that the only two categories that are not found within adjectival paradigms are the demonstratives/articles and the possessives. Also of qualitative relevance is the fact that adjectives constitute bases of derivation for strong verbs. Even though the question has been tackled by previous research, thus Pilch (1970) and Martín Arista (2010b), this is the first full report on the deadjectival Old English strong verbs. The list includes derivatives that belong to all seven classes of strong verbs:

(9)

Class I (14): *ætslīdan* 'to slip, glide, fall', *āglǣdan* 'to cause to slip', *āglīdan* 'to glide, slip', *āslīdan* 'to slide, slip, fall', *efenwrītan* 'conscribere, to set down, present', *forðbesēon* 'to look forth', *forðgewītan* 'to go forth, pass; depart, die', *(ge)bītan* 'to bite, tear; cut', *glǣdan* 'to cause to slip or totter', *glīdan* 'to glide, slip, slide', *niðerāstīgan* 'to descend', *niðerstīgan* 'to descend', *tōglīdan* 'to glide away, split, slip', *ūtāslīdan* 'to slip forwards, fall (into)'.
Class II (12): *ālēogan* 'to lie, deny, deceive', *belēosan* 'to be deprived of, lose', *forlēosan* 'to lose, abandon', *forðgēotan* 'to pour forth', *forð hrēosan* 'to rush forth', *forð tēon* 'to draw forth, bring forth', *fullflēon* 'to take to flight, escape', *(ge)lēogan* 'to lie; deceive', *nið erāscūfan* 'to push down', *oflēogan* 'to lie, be false', *rēodan* 'to redden, stain with blood', *sēocan* 'to be ill, fall ill'.
Class IIIa (3): *āswindan* 'to become weak, shrink', *grimman* 'to rage; hasten on', *wiðerwinnan* 'to revolt'.
Class IIIb (5): *forðyrnan* 'to run before, precede', *(ge)sceorpan* 'to scrape, gnaw', *mæltan* 'to consume by fire, melt, burn up', *sciellan* 'to sound (Sweet)', *smeortan* 'to smart'.
Class IIIc (1): *fullberstan* 'to burst completely'.
Class IV (4): *efencuman* 'to come together, agree', *forðbecuman* 'to come forth', *forðberan* 'to bring forth, produce', *forðcuman* 'to come forth, proceed, arrive at, succeed'.
Class V (12): *æftercweðan* 'to speak after, repeat, answer', *efenāmetan* 'to assemble together; compare', *efenetan* 'to eat as much as', *efengefēon* 'to rejoice together', *efengemetan* 'to compare', *efenmetan* 'to assemble together; compare', *forðwegan* 'to further; to advance', *hearmcweðan* 'to speak evil of',
repan 'to reap', *wið ercweð an*
'to withstand', *wið ermetan* 'to compare',
wyrgcweðan.
Class VI (3): *forðstæppan* 'to issue forth, proceed', *mānswerian* 'to forswear, perjure oneself', *wiðerstandan* 'to resist'.
Class VII (a) (1): *tōgescēadan* 'to expound, interpret'.
Class VII (c) (6): *efenweaxan* 'to grow together', *forð weaxan* 'to break forth, burst forth', *fullweaxan* 'to grow to maturity', *(ge)manigfealdan* 'to multiply, abound, increase', *(ge)wealcan* 'to move round, revolve, roll, toss', *onwealcan* 'to roll, roll round'.
Class VII (d) (1): *forðgangan* 'to go forth'.
Class VII (e) (4): *forebrǣdan* 'to prolongue; overshadow', *(ge)brǣdan* 'to make broad, extend, spread', *gelīclǣ tan* 'to liken, compare', *oferbrǣ dan* 'to spread over, suffuse'.
Class VII (f) (2): *æfterrōwan* 'to row after', *fullgrōwan* 'to grow to perfection'.
Strong with weak forms (4): *(ge)munan* 'to think about, remember', *gemynan* 'to think about, be mindful of', *ofmunan* 'to remember, collect', *onmunan* 'to esteem, care for, wish'.

Finally, in relation to the qualitative approach, it must be stressed that the derivational paradigms of adjectives have allowed us to identify two affixes that have undergone a process of grammaticalization, thus turning into a derivational affix from a lexical category, namely *-sām* and *-healf.*

5. CONCLUDING REMARKS

Two main conclusions can be drawn from this research. In the first place, the concept of derivational paradigm contributes to the explanation of the overall organization of the

lexicon, while allowing for the discussion of questions that are at the core of current morphological theory, such as recursivity and productivity. Secondly, primary adjectives play a significant role in Old English derivation. Even though they are not as productive as strong verbs, it cannot be denied that they are the base of derivation of a significant number of non-basic terms, which, moreover, belong to all lexical categories and nearly all grammatical categories.

NOTES

This research has been funded through the project FFI2011 29532. The following abbreviations are used throughout the article: ADJ (adjective), ADV (adverb), BT (Bosworth Toller), f. (feminine), m. (masculine), n. (neuter), N (noun) and p. (plural).

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