

LEXICAL OPERATIONS AND HIGH-LEVEL SYNTACTIC OPERATIONS WITH OLD ENGLISH -A, -E, -O, AND -U

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Abstract: *The aim of this article is to explain the lexical and high-level syntactic operations comprising the Old English suffixes -a, -e, -o and -u. Previous research has dealt with these suffixes, which constitute an area of overlapping between inflection and derivation, in terms of inflection, zero derivation or continuity between inflection and derivation. The position adopted in this article is that these affixes are fully derivational, although interesting points of convergence with inflection arise that deserve discussion. In this respect, a fundamental difference is made between explicit and implicit morphological relations. Such relations are considered in the derivational and the inflectional dimensions. Regarding lexical operations, the analysis concentrates on the subjective and objective functions realized by these suffixes, while, as far as high-level syntactic operations are concerned, a distinction is drawn between motivated and unmotivated inflective relations. The fact that most of the suffixes under scrutiny perform the subjective and the objective function is in keeping with the Separation Hypothesis, in terms of which grammatical morphemes are the output of phonological operations independent of the semantic operations that they realize. The results are also in accordance with the Universal Grammatical Function Theory, which predicts that the functions of inflectional and lexical derivation are the same.*

Key words: *Morphology, Lexeme-Morpheme Base Morphology, inflection, derivation, Old English.*

1. INTRODUCTION

This journal article aims at analyzing the suffixed Old English nouns to which the suffixes -a, -e, -o, and -u have been attached.¹ More specifically, the lexical operations as well as the high level syntactic operations displaying these affixes are studied within the framework of Lexeme-Morpheme Base Morphology as put forward by Beard (1995) and Beard and Volpe (2005). The data that I analyse as well as the methodology of analysis adopted draw on the lexical database of Old English *Nerthus* (www.nerthusproject.com). Conversely, this work contributes to the programme of research in Old English lexicology and lexicography represented by de la Cruz Cabanillas (2007, *fc.*), Guarddon Anelo (2009, *fc.-a, fc.-b*), González Torres (2010, *fc.-a, fc.-b*), Martín Arista (2005, 2006, 2008, 2009, 2010a, 2010b, 2010c, 2011a, 2011b, 2011c, *fc.-a, fc.-b, fc.-c*), Martín Arista and Martín de la Rosa (2006), Torre Alonso (2009, 2010, *fc.-a, fc.-b*) and Torre Alonso *et al.* (2008).

The article is organized as follows. Section 2 deals with the inflectional and derivational paradigm of Old English nouns and reviews previous approaches to the suffixes -a, -e, -o, and -u. Section 3 presents the aspects of Lexeme-Morpheme Base Morphology relevant to this research. Section 4 concentrates on the analysis of the lexical operations and high level syntactic operations in which the suffixes under scrutiny appear. Finally, section 5 summarizes the main conclusions of the article.

¹ This research has been funded through the project FFI08-04448/FILO.

2. THE INFLECTIONAL AND DERIVATIONAL PARADIGM OF OLD ENGLISH NOUNS

As Pyles and Algeo (1982: 113) remark, the *a*-declension, which corresponds to the *o*-stems of Indo-European, is the most important declension in Old English because, *more than half of all commonly used nouns inflected according to this pattern*. *A*-nouns are all masculine or neuter and display the endings provided by figure 1:

	Singular	Plural
Nominative	<i>ø</i>	<i>-as (masc.), -u (neut.)</i>
Accusative	<i>ø</i>	<i>-as (masc.), -u (neut.)</i>
Genitive	<i>-es</i>	<i>-a</i>
Dative	<i>-e</i>	<i>-um</i>

Figure 1. The inflectional paradigm of *a*-stems.

There were two variants of the *a*-declension in Germanic, one where the thematic vowel was preceded by /j/ (*ja*-stems), the other where it was preceded by /w/ (*wa*-stems). As for the *o*-declension, which corresponds to the *a*-stems in Indo-European, it is the main declension of feminine nouns. According to Pyles and Algeo (1982: 115) *somewhat fewer than a third of all commonly used nouns were feminine, most of them o-stems*. As was the case with *a*-stems, in Germanic there were there two variant types, namely *jo*-stems and *wo*-stems. Such a contrast is reflected by the existence of different patterns depending on the type of base, as is shown by figure 2:

	Singular	Light base	Heavy base
Nominative		<i>giefu</i>	<i>lār</i>
Accusative		<i>giefe</i>	<i>lāre</i>
Genitive		<i>giefe</i>	<i>lāre</i>
Dative		<i>giefe</i>	<i>lāre</i>
	Plural		
Nominative		<i>giefa</i>	<i>lāra</i>
Accusative		<i>giefa</i>	<i>lāra</i>
Genitive		<i>giefa</i>	<i>lāra</i>
Dative		<i>giefum</i>	<i>lārum</i>

Figure 2. The inflectional paradigm of *o*-stems (based on Campbell 1959).

The declension of *i*-stems contains masculine, feminine and neuter nouns, in such a way that the inflectional endings of the feminine coincide with those of *o*-stems and the ones of the masculine and neuter tend to follow those of the *a*-stems. This can be seen in figure 3:

	Masculine	Singular	Plural
Nominative		<i>wine</i>	<i>wine, -as</i>
Accusative		<i>wine</i>	<i>wine, -as</i>
Genitive		<i>wines</i>	<i>wina</i>
Dative		<i>wine</i>	<i>winum</i>
	Femenine		
Nominative		<i>dæd</i>	<i>dæda</i>

Accusative		<i>dǣd, -e</i>	<i>dǣda, -e</i>
Genitive		<i>dǣvde</i>	<i>dǣda</i>
Dative		<i>dǣde</i>	<i>dǣdum</i>
	Neuter		
Nominative		<i>spere</i>	<i>speru</i>
Accusative		<i>spere</i>	<i>speru</i>
Genitive		<i>speres</i>	<i>spera</i>
Dative		<i>spere</i>	<i>sperum</i>

Figure 3. The inflectional paradigm of *i*-stems (based on Campbell 1959).

The *u*-declension, which corresponds to the fourth declension in Latin, is followed by masculine or feminine nouns. The inflectional endings are the same for both genders. As is the case with the declension of *i*-stems, there are overlappings with the declension of *a*-stems regarding masculine nouns and *o*-stems with respect to feminine nouns. This is shown by figure 4:

	Masculine	Singular	Plural
Nominative		<i>sunu</i>	<i>sunu</i>
Accusative		<i>sunu</i>	<i>sunu</i>
Genitive		<i>sunu</i>	<i>sunu</i>
Dative		<i>sunu</i>	<i>sunum</i>
	Feminine		
Nominative		<i>duru</i>	<i>duru</i>
Accusative		<i>duru</i>	<i>duru</i>
Genitive		<i>duru</i>	<i>duru</i>
Dative		<i>duru</i>	<i>durum</i>

Figure 4. The inflectional paradigm of *u*-stems (based on Campbell 1959).

Apart from these vocalic declensions, there is a consonantal declension, usually referred to as the *weak declension*, as opposed to the vocalic or *strong* declensions. The weak declension corresponds to the third declension in Latin and contains masculine, feminine and neuter nouns. The paradigm is as follows in figure 5:

	Singular	Masculine	Feminine	Neuter
Nominative		<i>guma</i>	<i>tunge</i>	<i>ēage</i>
Accusative		<i>guman</i>	<i>tungan</i>	<i>ēage</i>
Genitive		<i>guman</i>	<i>tungan</i>	<i>ēagan</i>
Dative		<i>guman</i>	<i>tungan</i>	<i>ēagan</i>
	Plural			
Nominative		<i>guman</i>	<i>tungan</i>	<i>ēagan</i>
Accusative		<i>guman</i>	<i>tungan</i>	<i>ēagan</i>
Genitive		<i>gumena</i>	<i>tungena</i>	<i>ēagena</i>
Dative		<i>gumum</i>	<i>tungum</i>	<i>ēagum</i>

Figure 5. The inflectional paradigm of *n*-stems (based on Campbell 1959).

Turning to the derivational paradigm, Mitchell (1992) identifies the following nominal affixes as the most salient ones in Old English: *-ǣd/-oð*, *-end*, *-hād*, *-ing*, *-mǣl*, *-rǣden*, *-ð(o)/-ð(u)*, *-ung/-ing*. Quirk and Wrenn (1994) also provide an inventory of nominal suffixes based on their frequency of occurrence. For these authors, the most frequent suffixes are *-nes(s)/-nis/-nys* and *-ung/-ing*, the suffixes of high frequency include *-dōm*, *-end* and *-scipe*, while other common suffixes include *-bora*, *-el/-ol/-ul*, *-els*, *-en*, *-ere*, *-estre*, *-et(t)*, *-hād*, *-ing*, *-ing*, *-lāc*, *-ling*, *-oð/-ǣð*, *-rǣden*, *-ð(o)/-ð(u)*. For Kastovsky (1992) the main nominal suffixes in Old English are *-d/-t/-ð*, *-dōm*, *-ele(e)/-(a)/-ol*, *-els*, *-en*, *-end*, *-ere*, *-estre*, *-et(t)*, *-hād*, *-incel*, *-ing*, *-lāc*, *-ling*, *-ness*, *-rǣden*, *-scipe*, *-ð(o)/-t*, *-ung/-ing*, *-wist*. By drawing on these authors, I offer a brief description of each of these suffixes.

The suffix *-bora* forms masculine agent nouns from other nouns, as in *mundbora* ‘protector’, *rædbora* ‘councillor’. The affixes in the series *-d/-t/-* create deverbal nouns, as is the case with *æbylgð* ‘anger’ and *hæld* ‘health’. The suffix *-dōm* forms denominal and deadjectival abstract nouns with the meaning ‘state, condition, fact of being, action of’. Denominal nouns include *caserdom* ‘empire’, *martyrdom* ‘martyrdom’, *campdom* ‘contest’, and *læcedom* ‘medicine’. Deadjectival nouns, among others, are *freedom* ‘freedom’, *haligdom* ‘holiness, sanctuary’, *wisdom* ‘wisdom’. The group of suffixes *-ele(e)/-l(a)/-ol/-ul* are attached to action nouns, as in *scendle* ‘reproach’, *ðreal* ‘reproof’ and *hwyrfel* ‘circuit, whirlpool’; agent nouns, as is the case with *æf-tergengel* ‘successor’, *bydel* ‘herald’ and *bæcslitol* ‘backbiter’; object/result nouns (*scytel* ‘dart, missile’, *fyndel* ‘invention’ and *bitol* ‘bridle’); instrumental nouns like *sceacel* ‘shackle’, *tredele* ‘sole of the foot’ and *spinel* ‘spindle’; and locative nouns such as *smygel* ‘burrow, retreat’, *stigel* ‘stile’ and *setl* ‘seat’. The suffix *-els* forms concrete masculine deverbal nouns from strong and weak verbs, as in *rædels* ‘counsel’, *brædels* ‘carpet’ and *gyrdels* ‘girdle’. The suffix *-en* forms feminine nouns of action (*sien* ‘sight’, *fillen* ‘falling’, *swefen* ‘sleep, dream’), object/result (*ræden* ‘reckoning, estimation’, *sellen* ‘gift’, *fæsten* ‘fortress’), instrument (*hlæden* ‘bucket’, *lifen* ‘sustenance’, *fæsten* ‘fastener’) and locative nouns (*hengen* ‘rack, cross’, *byrgen* ‘grave’). The suffix *-end* forms deverbal agent nouns from both weak and strong verbs. The agent nouns are masculine, whereas the action nouns display the feminine gender. Masculine agent nouns include *biddend* ‘petitioner’, *lærend* ‘teacher’ and *dælnimend* ‘participle’, while object nouns include *belifend* ‘survivor’ and *gehæftend* ‘prisoner’. The suffix *-ere* forms nouns from other nouns and from verbs.²

Examples of deverbal nouns include *leornere* ‘disciple’ (agent), *sceawere* ‘mirrow’ (object), *punere* ‘pestle’ (instrumental), *wordsamnera* ‘catalogue’ (locative), *dirnegeligere* ‘sailor’ (action), etc. Denominal nouns form agent nouns like *scipere* ‘sailor’, *scohere* ‘shoemaker’ and *sædere* ‘sower’. The suffix *-estre* forms deverbal and denominal feminine agent nouns. Deverbal nouns include *hleapestre* ‘female dancer’, *wæscestre* ‘washer’ and *tæppestre* ‘female tavern-keeper’. Denominal nouns are *byrðestre* ‘female carrier’, *fiðestre* ‘female fiddler’ and *lybbestre* ‘sorceress’. The suffix *-et(t)* forms deverbal and denominal neuter nouns. Deverbal nouns include *rewett* ‘rowing’, *hiwett* ‘hewing’ and *bænnett* ‘burning’, while *ðiccett* ‘thicket’, and *rymet* ‘space, extent’ qualify as denominal nouns. The suffix *-hād* conveys the meaning of ‘state, rank, order, condition, character’ in instances like *abbudhad* ‘rank of an abbot’, *camphad* ‘warfare’ and *cildhad* ‘childhood’. The suffix *-incel* forms neuter denominal diminutives such as *bogincel* ‘small bough’, *busincel* ‘little house’ and *scipincel* ‘little ship’.³ The suffix *-ing* forms masculine nouns denoting ‘proceeding or derived from’ from nouns (*wicing* ‘pirate’), adjectives (*ierming* ‘poor wretch’) and verbs (*fostring* ‘fosterchild’). The suffix *-lāc* forms masculine abstract nouns from nouns and verbs and denotes ‘state, act, quality, nature of’ from nouns and verbs. Denominal nouns include *bodlac* ‘decree’, *brydlc* ‘marriage, marriage gift’ and *lyblac* ‘witchcraft’, while *breowlac* ‘brewing’ qualifies as a deverbal noun. The suffix *-ling* derives nouns from adjectives, nouns and verbs.

Deadjectival nouns are *deorling* ‘favourite’ and *geongling* ‘youth’; denominal nouns include *cnæpling* ‘youth’, *fostorling* ‘fosterchild’ and *ðeowling* ‘slave’; *hyriling* ‘hireling’, *ræpling* ‘prisoner’ and *hwirfling* ‘that which turns’ are deverbal nouns. The suffix *-ness* and its variant forms *-nis*, *-nes* and *-nys* derive feminine abstract nouns from adjectives and verbs. Deadjectival nouns include *æðelness* ‘nobility’, *beorhtness* ‘brightness’ and *biterness* ‘bitterness’, *clænness* ‘purity’. Among deverbal nouns we find *blinness* ‘cessation’, *brecness* ‘breach’ and *costness* ‘temptation’. The suffix *-oð/-að* forms masculine nouns, mainly abstract, as is the case with *drohtoð* ‘way of life’, *hergað* ‘plundering’ and *langað* ‘longing’. The suffix *-ræden* derives feminine denominal nouns with the meaning ‘state, act, condition’, as in *bebodræden* ‘command, authority’, *broðo-*

² See ten Brink (1882) and Kastovsky (1971) for more information.

³ See von Lindheim (1970) on the suffix *-incel*.

rræden ‘fellowship, brotherhood’ and campræden ‘war, warfare’. The suffix *-scipe* forms masculine abstract nouns from adjectives and nouns with the meaning ‘state, act, fact, condition’. Denominal nouns include *bodscipe* ‘message’, *freondscipe* ‘friendship’ and *leodscipe* ‘nation, people’, while *gecorenscipe* ‘election, excellence’, *unwærscipe* ‘carelessness’ and *hwætscipe* ‘activity, vigour’ are deadjectival nouns. The suffix *-ung/-ing* forms deverbal nouns from both strong and weak verbs. Action nouns include binding ‘binding’ and *hunting* ‘hunting’. Instances of agent nouns include *gaderung* ‘gathering, assembly’ and *gemeting* ‘meeting, assembly’. Among object/result nouns we find *beorning* ‘incense’ and *agnung* ‘possessions’. Instrumental nouns include instances such as *lacnung* ‘medicine’ and *wering* ‘dam’. *Cyping* ‘market’ and *wunung* ‘dwelling’ qualify as locative nouns. Finally, the suffix *-wist* derives feminine abstract nouns from nouns (*huswist* ‘household’), adjectives (*loswist* ‘loss’) and adverbs (*midwist* ‘presence’).

Along with these suffixes, which bear an explicit derivational relationship because the derivational and the inflectional parts of the ending are clearly distinguishable, there are other suffixes, including the suffixes *-a*, *-e*, *-o*, and *-u*, that bear an implicit derivational relationship because the same segment expresses the derivational as well as the inflectional function. However, a morphological relationship of derivation holds between the basic verb and the derived noun in instances like *andettan* ‘to confess’ > *andetta* ‘one who confesses’, *hierdan* ‘to protect’ > *hierde* ‘keeper’, *fullian* ‘to fill up’ > *fyllo* ‘illness’ and *giefan* ‘to give’ > *giefu* ‘gift.’ In general, three solutions have been proposed. Kastovsky (1968) gives two arguments for considering it an inflectional ending.

Firstly, nouns like *sarga* ‘trumpet, clarion’, *nama* ‘name’ or *forca* ‘fork’ show the inflective ending *-a* and they are clearly non-derived nouns. In the second place, whereas truly inflectional suffixes, such as the suffix *-ere* (thus *bæcere* ‘baker’: nominative, accusative singular *bæcere*, nominative, accusative plural *bæceras*), the suffix *-a* does not appear throughout the inflectional paradigm. Pilch (1970: 112) prefers the term *deverbal nomina agentis* to refer to formations from strong verbs like *wita* ‘sage, philosopher, wise man, adviser’ from *witan* ‘to be aware of or conscious of, know, understand’, *boda* ‘messenger’ from *bēodan* ‘to command, decree, summon’, *bora* ‘ruler’ from *beran* ‘to bear, carry, bring’, *webba* ‘weaver’ from *wefan* ‘to weave’ and *wicce* ‘witch’ from *wīgan* ‘to fight, make war’, as well as from weak verbs such as *dēma* ‘judge, ruler’ from *dēman* ‘to judge’ and *hunta* ‘hunter’ from *huntian* ‘to hunt’.

González Torres (2010) opts for explaining the Old English nominal suffixes *-a*, *-e*, *-o*, and *-u* as a continuum between inflection and derivation. Her main argument is that there is a semantic contrast between the presence and the absence of these morphemes in instances like *andsæc* ‘denial’/*andsaca* ‘adversary’, *forebod* ‘prophecy’/*foreboda* ‘messenger’, *selfdōm* ‘independence’/*selfdēma* ‘monk living subject only to his own rules’, *wordloc* ‘art of logic’/*wordloca* ‘speech’, *mūð* ‘mouth’/*mūða* ‘estuary’, *lid* ‘ship’/*lida* ‘sailor’; *æ 1* ‘law’/ *æwe 1* ‘married woman’, *blæc 2* ‘ink’/*blæcce* ‘black matter’, *nett* ‘net’/*nette* ‘the net-like caul’, *smið* ‘smith’/*smiððe* ‘smithy, forge’; *framfær* ‘departure’/*framfru* ‘excess’, *getog* ‘contraction’/*getogu* ‘traces (of a horse)’, *goldsmið* ‘goldsmith’/*goldsmiðu* ‘goldsmith’s art’, *weg* ‘way’/*wegu* ‘vehicle’ and *wægfar* ‘sea-voyage’/ *wægfaru* ‘track in the sea’.

In a nutshell, the Old English nominal suffixes *-a*, *-e*, *-o* and *-u* represent an area of overlapping between inflection and derivation that has been explained in terms of inflection (Kastovsky 1968), zero derivation (Pilch 1970) or continuity between inflection and derivation (González Torres 2010). In the remainder of this article I offer an explanation for this phenomenon in terms of full derivation. Since I resort to Lexeme-Morpheme Base Morphology in the analytical part of this work, the following section is devoted to reviewing the basics of this linguistic framework.

3. LEXEME-MORPHEME BASE MORPHOLOGY: AN OVERVIEW

The theoretical framework chosen for this study is Lexeme-Morpheme Base Morphology, as proposed by Beard (1995) and Beard and Volpe (2005). This theory has been preferred over others because it allows for a decomposition of a complex notion such as derivational relationship into simpler notions and, moreover, because it provides a unified inventory of derivational and inflectional functions compatible with phenomena of overlapping between inflection and derivation such as the one just mentioned. These questions are discussed in turn.

Lexeme-Morpheme Base Morphology is known for its strict distinction between lexemes and grammatical morphemes. Morpheme-based morphology assumes that language contains only one type of meaningful unit, the morpheme, which includes stems and affixes, all of which are signs. Lexeme-based morphology, on the contrary, assumes that only lexemes, derived or underived, are signs, and that affixes, reduplication, re-vowelling, metathesis, subtraction, stem mutation, and the like, are means of phonologically marking independent derivational operations which a lexeme might have undergone. This means that lexemes refer to something in the real world, whereas morphemes refer exclusively to universally available closed class grammatical categories (such as Tense, Aspect, and Number) and may consist of independent phonemic strings, affixes, infixes, changes in accent or tone, or even predictable omissions (zero morphemes). Figure 6 summarizes the main differences between lexemes and morphemes as identified by Lexeme-Morpheme Base Morphology:

Lexemes	Morphemes
- Belong to an open class	- Belong to a closed class
- Do not allow zero or empty forms	- Allow zero or empty forms
- Have extra grammatical (real world) references	- Have grammatical functions (refer only to grammatical categories)
- May undergo lexical derivation	- May not undergo lexical derivation
- Are not paradigmatic	- Are paradigmatic
- Must be phonologically expressed	- May be phonologically expressed

Figure 6. Lexemes and morphemes in LMBM.

The basic idea, therefore, is that the lexicon contains exclusively noun, verb and adjective stems, whereas grammatical morphemes are the output of phonological operations independent of the semantic operations they realize. In this framework, affixation is reduced to an exclusively phonological operation. This is called the Separation Hypothesis. The Separation Hypothesis splits derivation, both lexical and inflectional, into three processes: lexical (L-) derivation, inflectional (I-) derivation, and morphological spelling. Derivation comprises operations on abstract lexical and inflectional category functions such as [+Plural, -Singular], [+Past, -Present], [+1st], and the like. Spelling is the purely phonological realization of the morphological categories of any base lexeme that has undergone such derivation. Its function is to distinguish stems that have undergone derivation from those which have not. If the derivation is inflectional, the marker may be attached to the lexical stem or assigned independently to a structural position in syntax in ways which syntax alone cannot predict. Lexical derivation takes place in the lexicon and inflectional derivation in the syntax. Beard (1995) distinguishes four kinds of lexical derivation: transposition, functional derivation, feature switches and expressive derivations. Transpositions change the lexical category of a lexeme. Functional derivations add a semantically interpretable category function, such as Subject, Object, Locus and Manner. Lexical switches change the value of inherent lexical features, such as Gender and expressive derivations comprise the Aug-

mentative and Diminutive and reflect the attitude of the speaker. The base rule component of the theory cannot be syntactic only but must accommodate both lexical operations (derivations) and high-level syntactic operations (inflections). The types of lexical derivation rules that are available to grammars, therefore, are determined by the categories of the base rule component and the lexicon. This is called the Base Rule Hypothesis. Finally, the Universal Grammatical Function Theory stipulates that the functions of inflectional and lexical derivation are the same.

The remainder of this article focuses on the lexical operations and high-level syntactic operations starring the nominal suffixes. In general, a fundamental difference is made between explicit and implicit morphological relations. Such relations are considered from the derivational and the inflectional perspectives. Regarding lexical operations, I concentrate on the subjective and objective functions realized by these suffixes, while, as far as high-level syntactic operations are concerned, I draw a distinction between motivated and unmotivated inflective relations.

4. ANALYSIS

This section presents the analysis that has been carried out. Firstly, I describe the data and then I concentrate on the derivations that comprise the suffixes at stake.

The lexical database of Old English Nerthus (www.nerthusproject.com) turns out 353 nouns derived by means of the suffixes -a, -e, -o, and -u. This figure calls for some comment. Nerthus contains 30,170 headwords, of which 16,694 are nouns. By derivational process, nouns can be classified as follows. There are 4,115 basic (underived) nouns and 12,579 non-basic (derived) nouns. Within non-basic nouns there are 3,488 derived nouns and 9,091 compound nouns. Affixed nouns can be broken down into 351 prefixed and 3,137 suffixed nouns. Therefore, this journal article deals with approximately 11.2% of suffixed Old English nouns. By suffix, -e is the most frequent one, with 142 derivatives, followed by -a (128 derivatives) and -u (65 derivatives). The suffix -o is the least frequent (18 derivatives).

As I have already pointed out regarding *ridda* 'rider', there is no explicit derivational relation between the base of derivation and the derived noun, but an implicit one. From the point of view of inflection, an explicit inflectional relation holds in those cases in which there is gender differentiation. Explicit inflectional relations can be of two types. When inflective contrast is kept and meaning changes, a motivated inflectional relation can be identified, as in *blæce* m. 'irritation' with respect to *blæco* f. 'pallor'. On the other hand, when there is inflective contrast but no meaning difference can be found, an unmotivated inflectional relation holds, as is the case with *crāwa* m. 'crow, raven' with respect to *crāwe* f. 'crow, raven'.

Beginning with the unmotivated inflectional relation, lexical switches produce pairs and triplets like those in (1). Notice that m stands for masculine, f for feminine and n for neuter:

1.
 - a. -a/-e
 - ācumba* m. / *ācumbe* fn. 'oakum, hards, tow; ashes of oakum'
 - adesa* m. / *adese* f. 'adze, hatchet'
 - bēna* m. / *bēne* f. 'suitor, petitioner'
 - becola* m. / *becole* f. 'spectre'
 - bedcofa* m. / *bedcofe* f. 'bed-chamber'
 - bolla* m. / *bolle* f. 'bowl, cup, pot, beaker, measure'
 - burna* m. / *burne* f. 'brook, stream, spring or well water'
 - coorta* m. / *coorte* f. 'cohort'

- crāwa m. / crāwe f. 'crow, raven'
 culpa m. / culpe f. 'fault, sin'
 disma m. / disme f. 'musk, cassia'
 efeta m. / efete f. 'eft, newt, lizard'
 firenhicga m. / firenhicge f. 'adulterer'
 forca m. / force f. 'fork'
 friðowebba m. / friðowebbe f. 'peace-maker'
 gærshoppa m. / gærshoppe f. 'grasshopper, locust'
 gefædera m. / gefædere f. 'sponsor'
 græfa m. / græfe f. 'bush, bramble, grove, thicket'
 higera m. / higere f. 'jay, magpie, jackdaw, woodpecker'
 hramsa m. / hramse f. 'nion, garlic'
 hūsbonða m. / hūsbonde f. 'householder'
 Īsenpanna m. / Īsenpanne f. 'frying-pan'
 impa m. / impe f. 'graft, shoot, scion'
 lactuca f. / lactuce m. 'lettuce'
 liðera m. / liðere f. 'sling, slinging pouch'
 lippa m. / lippe f. 'lip'
 māga m. / māge f. 'descendant'
 micga m. / micge f. 'urine'
 mitta m. / mitte f. 'a measure bushel'
 myrra m. / myrre f. 'myrrh'
 nihtegala m. / nihtegale f. 'nightingale'
 nihtgenga m. / nihtgenge f. 'night-prowler'
 oma m. / ome f. 'a liquid measure'
 pāwa m. / pāwe f. 'peacock, peahen, peafowl'
 peonia m. / peonie f. 'peony'
 prica m. / price f. 'prick, spot, dot; small portion of space or time'
 rūwa m. / rūwe f. 'covering, tapestry'
 sindra m. / sindre f. 'cinder, dross, scoria, slag'
 slypa m. / slyppe f. 'paste'
 spīca m. / spīce f. 'aromatic herb, spice'
 stæna m. / stæne f. 'pitcher, jug'
 sunna m. / sunne f. 'sun'
 targa m. / targe f. 'small shield, buckler'
 tēona m. / tēone f. 'injury, hurt, wrong; accusation, reproach, insult'
 telgra m. / telgre f. 'twig, branch, shoot'
 tīða m. / tīðe f. 'sharer in, receiver, grantee'
 trymessa m. / trymesse f. 'a drachm weight; coin'
 turtla m. / turtle f. 'turtle-dove'
 tyrwa m. / tyrwe f. 'tar, resin'
 unna m. / unne f. 'favour, approval, permission, consent; grant'
 wæta m. / wæte f. 'wetness, moisture, fluid, water; drink; sap'
 webba m. / webbe f. 'a female weaver'
 wiliga m. / wilige f. 'basket'
 wlita m. / wlite f. 'brightness; appearance, form, aspect, look'
 wrenna m. / wrenne f. 'wren'
 wuduwa m. / wuduwe f. 'widower'
- b. -a/-e/-u
- hosa m. / hose f. / hosu f. 'hose; pod, husk'
 wealmora m. / wealmore f. / wealmoru f. 'carrot, parsnip'
- c. -a/-u

- āðswara m? / āðswaru f. 'oath-swearing, oath'
 bancoða m. / bancoðu f. 'baneful disease'
 coða m. / coðu f. 'disease, sickness'
 heortcoða m. / heortcoðu f. 'heart disease'
 hwiða m. / hwiðu f? 'air, breeze'
 ofenraca m. / ofenracu f. 'oven-rake'
 selfcwala m. / selfcwalu f. 'suicide'
 swipa m. / swipu f. 'whip, stick, scourge; chastisement, affliction'
 woruldlaga m. / woruldlagu f. 'civil law'
- d. -e/-u
- (ge)mære ? / (ge)mæru f. 'a border, margin, coast'
 getimbre n. / getimbru f. 'building, structure'
 syle ? / sylu f. 'bog, miry place'
 ðēostre n. / ðēostru f. 'darkness, gloom'

As can be seen in (1), 70 nouns can be inflected for more than one gender, which represents nearly 20% of the nouns to which the suffixes in question are attached. This variation can be explained in terms of the collapse of grammatical gender and its replacement with natural gender.⁴ It must be borne in mind, however, that no noun has been found that is inflected for all three genders. Even those that take two different suffixes, as is the case with *wealhmora* m. / *wealhmora* f. / *wealhmoru* f. 'carrot', select two genders. It is also remarkable that the basic opposition takes place between the masculine and the feminine. In this sense, *-a/-e* and *-a/-u* mark the contrast between the masculine and the feminine gender, whereas the *-e/-u* express the contrast between the neuter and the feminine.

To go on, I focus on the motivated inflective relation. In pairs and triplets like the ones offered in (2) it can be seen that affix selection has impact on meaning:

- 2.
- a. -a/-e
- | | | |
|----------------|----|--|
| <i>bita</i> | m. | 'bit, morsel, piece; biter, wild beast' |
| <i>bite</i> | m. | 'bite, sting; sword-cut; cancer' |
| <i>lēafa</i> | m. | 'belief, faith; creed' |
| <i>lēafe</i> | f. | 'leave, permission, licence' |
| <i>hēopa</i> | m. | 'bramble' |
| <i>hēope</i> | f. | 'hip, seed-vessel of wild-rose; bush, brier' |
| <i>melda</i> | m. | 'reporter, informer, betrayer' |
| <i>melde</i> | f. | 'orache (plant)' |
| <i>selfæta</i> | m. | 'cannibal' |
| <i>selfæte</i> | f. | 'a plant, wild oat; groundseld' |
| <i>tæppa</i> | m. | 'tap, spigot' |
| <i>tæppe</i> | f. | 'strip of stuff or cloth, tape' |
| <i>weolma</i> | m. | 'desire, what of its kind is most to be desired' |
| <i>weolme</i> | f. | 'choice, pick of one's fellow-creatures' |
- b. -e/-o
- | | | |
|--------------|-----|--|
| <i>blæce</i> | mn. | 'irritation of the skin, leprosy, psoriasis' |
| <i>blæco</i> | f. | 'pallor' |
- c. -e/-u
- | | | |
|-------------|----|---------------------|
| <i>hære</i> | f. | 'sackcloth of hair' |
| <i>hæru</i> | f. | 'hoariness' |

⁴ The question is discussed in detail by Kastovsky (1999).

As is shown by (2), the motivated inflective relation is associated almost exclusively with the contrast between the masculine and the feminine gender. The pairs of affixes that partake of the motivated inflective relation are *-a/-e* and *-e/-o*. According to the definition of the motivated inflective relation as requiring a gender contrast, the pair *e/-u* does not mark meaning contrast and, therefore, does not hold the motivated inflective relation. Quantitatively, the unmotivated inflective relation is far more frequent than its motivated counterpart, which, again, insists of the change from grammatical to natural gender undergone by English.

An additional argument in favour of the derivational character of these suffixes can be found in the interplay of lexical operations and lexical switches. In effect, in the following pairs, which display suffixes fully derivational according to the literature reviewed in section 2, such as *-end*, *-ere*, *-estre*, and *-icge*, an unmotivated inflectional relation holds because there is inflective contrast but no meaning difference.

3.			
a.	<i>ācennend</i>	m.	'parent'
	<i>ācennicge</i>	f.	'mother'
b.	<i>byrðestre</i>	f.	'female carrier'
	<i>byrðre 1</i>	m.	'bearer, supporter'
c.	<i>cennend</i>	m.	'parent'
	<i>cennestre</i>	f.	'mother'
d.	<i>forspennend</i>	m.	'procurer'
	<i>forspennestre</i>	f.	'procuress'
e.	<i>fylgend</i>	m.	'follower, observer'
	<i>fylgestre</i>	f.	'female follower'
f.	<i>galdre</i>	m.	'wizard, magician'
	<i>galdricge</i>	f.	'enchantress'
g.	<i>hǣlend</i>	m.	'Saviour, Christ'
	<i>hǣlestre</i>	f.	'saviour'
	<i>hlēapere</i>	m.	'runner, courier; wanderer, leaper, dancer'
	<i>hlēapestre</i>	f.	'female dancer'
h.	<i>leornere</i>	m.	'learner, disciple; scholar; reader'
	<i>leornestre</i>	f.	'a student'
i.	<i>oferswīðend</i>	m.	'vanquisher'
	<i>oferswīðestre</i>	f.	'victrix'
j.	<i>plegere</i>	m.	'player'
	<i>plegestre</i>	f.	'female athlete'

Furthermore, a motivated inflectional relation can be identified in the following pairs, given that the inflective contrast is kept while meaning changes:

4.			
a.	<i>begīmen</i>	f.	'attention, observation'
	<i>begīmend</i>	m.	'guide, ruler'
b.	<i>bepæcend</i>	m.	'deceiver'
	<i>bepæcestre</i>	f.	'whore'
c.	<i>blāwend</i>	m.	'inspirer'
	<i>blāwere</i>	f.	'blower'
d.	<i>byrgen</i>	f.	'burying place, grave, sepulchre; burial'
	<i>byrgend</i>	m.	'grave-digger'
	<i>byrgere</i>	m.	'corpse-bearer'
e.	<i>forgifestre</i>	f.	'female giver'

	<i>forgifu</i>	f.	'gratia'
f.	<i>gēotend</i>	m.	'artery'
	<i>gēotere</i>	m.	'founder (of metal)'
g.	<i>lǣrend</i>	m.	'misleader, instigator'
	<i>lǣrestre</i>	f.	'instructress'
h.	<i>sceððend</i>	m.	'adversary'
	<i>sceððu</i>	f.	'hurt, injury'
i.	<i>ðrōwend</i>	m.	'serpent, scorpion, basilisk'
	<i>ðrōwere</i>	m.	'sufferer, martyr'
j.	<i>wendend</i>	m.	'that which turns round'
	<i>wendere</i>	m.	'translator, interpreter'

Turning to the implicit derivational relation holding in pairs like *rīdan* 'to ride'~ *rida* 'rider', I distinguish the subjective and the objective function. It must be borne in mind, regarding this question, that these functions are semantic-syntactic rather than notional. In this sense, subjective is not equated with animate and, conversely, objective is not equated with inanimate. This is corroborated by the existence of instances of the subjective semantic-syntactic function that convey an inanimate meaning, such as the following:

5.
 - a. *geclofa* 'counterpart (of a document)'
 - b. *scēarra* 'shears, scissors'
 - c. *scinna* 'spectre, illusion, phantom, evil spirit; magical image; be resplendent'
 - d. *staca* 'pin, stake'
 - e. *steorfa* 'pestilence; carrion'
 - f. *sticca* 'stick; peg, pointer; spoon'

From the point of view of function, it is worth remarking that a correspondence has been found in a significant number of instances between a subjective derivative and another objective one. Relevant instances include those given in (6):

6.			
	-a/-e		
	<i>āga</i>	m.	'proprietor, owner' (subjective)
	<i>āge</i>	f.	'possessions, property' (objective)
	<i>æswica</i>	m.	'offender, deceiver, hypocrite, traitor' (subjective)
	<i>æswice</i>	m.	'violation of God's laws (or adultery)' (objective)
	<i>bīgenga</i>	m.	'inhabitant; cultivator; worshipper' (subjective)
	<i>bīgenge</i>	n.	'practice, worship' (objective)
	<i>breca</i>	m.	'breaker' (subjective)
	<i>brece</i>	n.	'bit, morsel, piece' (objective)
	<i>brōðorslaga</i>	m.	'brother-slayer' (subjective)
	<i>brōðorslage</i>	m.	'fratricide (act)' (objective)
	-a/-e/-u		
	<i>morðorslaga</i>	m.	'murderer' (subjective)
	<i>morðorslege</i>	m.	'murder' (objective)
	<i>morðorslagu</i>	f.	'murder' (objective)
	-a/-o		
	<i>gehlytta</i>	m.	'partner, fellow' (subjective)
	<i>gehlytto</i>	?	'fellowship, lot' (objective)

-a/-u			
<i>ælmesgifa</i>	m.	'giver of alms'	(subjective)
<i>ælmesgifu</i>	f.	'alms, charity'	(objective)
<i>bēaggifa</i>	m.	'ring-giver, lord, king, generous chief'	(subjective)
<i>bēaggifu</i>	f.	'ring-giving'	(objective)
<i>draca</i>	m.	'dragon, sea-monster; serpent; the devil'	(subjective)
<i>dracu</i>	f.	'affliction'	(objective)
<i>feorhgiefu</i>	m.	'giver of life'	(subjective)
<i>feorhgiefu</i>	f.	'gift of life'	(objective)
<i>frēotgifa</i>	m.	'liberator'	(subjective)
<i>frēotgifu</i>	f.	'emancipation'	(objective)
<i>(ge)rēðra</i>	m.	'rower, sailor'	(subjective)
<i>(ge)rēðru</i>	np.	'oars'	(objective)
<i>(ge)saca</i>	m.	'opponent, foe'	(subjective)
<i>(ge)sacu</i>	f.	'conflict, strife, war, battle, feud'	(objective)
<i>giefu</i>	m.	'donor'	(subjective)
<i>giefu</i>	f.	'giving, gift'	(objective)
<i>lata</i>	m.	'slow person'	(subjective)
<i>latu</i>	f.	'delay'	(objective)
<i>māððumgyfa</i>	m.	'giver of treasure, prince, king'	(subjective)
<i>māððumgifu</i>	f.	'gift of treasure'	(objective)
<i>mānswara</i>	m.	'perjurer'	(subjective)
<i>mānswaru</i>	f.	'perjury'	(objective)
<i>ny:dnima</i>	m.	'one who takes by force'	(subjective)
<i>ny:dnimu</i>	f.	'rapine, forcible seizure'	(objective)
<i>sceaða</i>	m.	'injurious person, criminal, thief'	(subjective)
<i>sceaðu</i>	f.	'injury'	(objective)
<i>wuldorgifa</i>	m.	'giver of glory'	(subjective)
<i>wuldorgifu</i>	f.	'glorious gift, grace'	(objective)

Instances such as *rīdan* 'to ride' ~ *ridda* 'rider' and *giefan* 'to give' ~ *giefu* 'gift' imply three types of lexical derivation: a transposition whose input is a verb and whose output is a noun, a functional derivation that assigns the subjective role, and a featural switch. These three types of lexical derivation are illustrated, respectively by figures 7-11, where NP stands for Noun Phrase, C for Complementiser, CP for Complementiser Phrase, IP for Inflectional Phrase and VP for Verb Phrase; the basic parallel is with a sentence, in which IP contains a word level category such as will, must, etc. expressing verbal inflection and the Complementiser such as that introduces clausal complements.

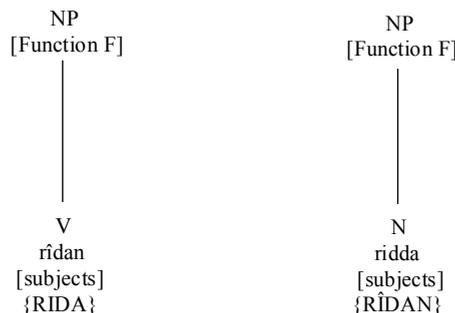


Figure 7. L-derivation in *rīdan* 'to ride': *ridda* 'rider' (input and output of transposition).

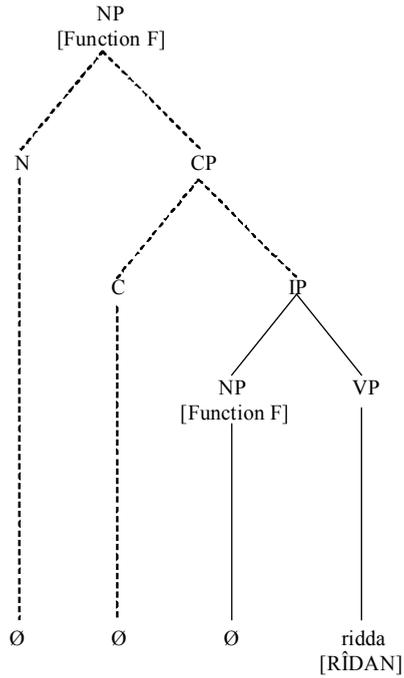


Figure 8. L-derivation in rīdan 'to ride': ridda 'rider' (functional derivation).

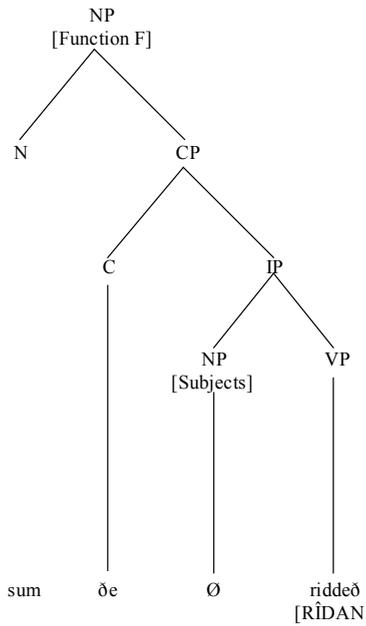


Figure 9. L-derivation in rīdan 'to ride': ridda 'rider' (feature switch).

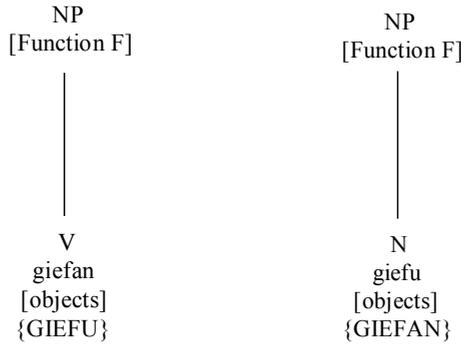


Figure 10. L-derivation in *giefan* 'to give': *giefu* 'gift' (input and output of transposition).

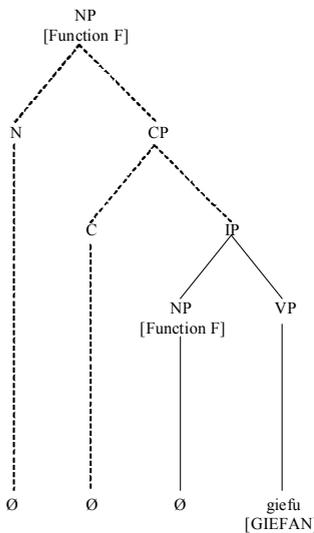


Figure 11. L-derivation in *giefan* 'to give': *giefu* 'gift' (functional derivation).

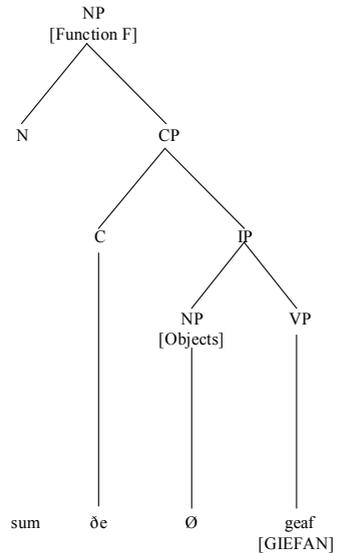


Figure 12. L-derivation in *giefan* 'to give': *giefu* 'gift' (feature switch).

These representations rest on the assumption that Old English has two ways of expressing the same meaning by using an identical lexeme: one is lexical (*riðd-a* 'rid-er'), the other is syntactic (*sum ðe riðd-eð* 'one who rides'). Moreover, the same functions are found in both expressions. In this particular case, there is a subjective function and an unexpressed objective function.

5. CONCLUSIONS

This article has analysed the Old English nouns to which the suffixes *-a*, *-e*, *-o*, and *-u* have been attached. The main conclusion regarding these suffixes is that they are fully derivational.

Methodologically, several distinctions have been drawn. An explicit derivational relation requires an affix that cannot be used for marking inflection, whereas an implicit derivational relation turns up when the inflectional morpheme performs both functions, inflection and derivation. In the area of inflection, an explicit inflectional relation holds in those cases in which there is inflec-

tional contrast. Explicit inflectional relations can be of two types. When inflective contrast is kept and meaning changes, a motivated inflectional relation can be identified.

On the other hand, when there is inflective contrast but no meaning difference can be found, an unmotivated inflectional relation holds.

From the quantitative point of view, 353 suffixed nouns have been analyzed, out of which 179 are subjective and 174 are objective. Therefore, the subjective function is slightly favoured over the objective one. The 4 suffixes analyzed can be divided into two groups on functional grounds: (a) those suffixes that practically always realize the same function, including *-a* (121 subjective, 7 objective), *-e* (103 objective, 39 subjective), and *-o* (16 objective, 2 subjective); and (b) a suffix for which no predominant function can be identified, namely *-u* (48 objective, 17 subjective).

From the theoretical point of view, the fact that the suffixes under scrutiny perform the subjective and the objective function is in keeping with the Separation Hypothesis, in terms of which grammatical morphemes are the output of phonological operations independent of the semantic operations that they realize. Affixation is a phonological operation of affix selection, whereas lexical derivation entails lexical categories and functional relations. In this analysis I have insisted on the functional derivations that add semantically interpretable functions such as the subjective or the objective. These results are also in accordance with the Universal Grammatical Function Theory, which predicts that the functions of inflectional and lexical derivation are the same. Indeed, suffixes involved in implicit derivational relations, such as *-a*, perform the same function as others partaking of explicit derivational relations such as *-estre*. The same applies to the objective function. Suffixes taking part in implicit derivational relations, like *-o*, realize the same function as others involved in explicit derivational relations such as *-en*.

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