Morphological relatedness and zero alternation in Old English[1]

Javier Martín Arista

Universidad de La Rioja

1 Introduction

The function of derivational morphology is to enlarge the lexicon in order to meet communicative needs (Stekauer 2005a:207; 2005b:45). As a general rule, word-formation changes, restricts or enlarges the meaning of the base of derivation by means of some sort of formal modification, in such a way that the change of meaning undergone by the base has a formal counterpart and, conversely, the difference in form between base and derivative motivates the variation of meaning existing between the original lexeme and the newly coined one. There are two areas, however, in which an irregular association or *mismatch* (Francis and Michaelis 2003:2) appears between form and meaning, in the sense that either the change of meaning results from no change of form or the change of form triggers no meaning change. This book chapter engages in this mismatch, that is, it is concerned with morphological contrast or, more specifically, with the presence and the absence of formal contrast between morphologically related words. The topic has been and still is at the heart of the linguistic debate, both at the theoretical and the descriptive levels. Theoretically speaking, for the structural and the structural-functional traditions the relationship between form and function, mediated by the notion of motivation, has been of paramount importance for linguistic organization and description.[2] On the descriptive side, as Beard and Volpe (2005:190) point out, *for centuries linguists struggled with a set of morphological enigmas: (...) zero morphemes (...) empty morphemes (...) and morphological asymmetry*.

For this aim, I have chosen Old English as the language of analysis and discussion, in the belief that morphological theory requires rich and varied morphological data. Although Present-day English also has instances of zero derivation,

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[2] At this point, I should like to refer the reader to Dik´s (1986) seminal work on functional explanations. On this question, see also Butler (2003a, b). Regarding the difference between motivation as compositionality of meaning and as linking between semantics and morphosyntax, see Kastovsky (1987, 2005b). See also Hohenhaus (2005) on lexicalization.

such as *book* (noun) > *book* (verb), and empty morph, like *lexicographic* > *lexicographical*, Old English has been preferred for this piece of research for two reasons. Firstly, its morphology is more generalized than the one of Present-day English. Old English displays full inflection in the major lexical classes of the noun, adjective and verb, as well as in the minor lexical class of the pronoun (while the adverb has comparative and superlative grade forms). And, secondly, in Old English, as in the old Germanic languages, there is a strong tendency to create new lexemes by derivational means rather than borrowing them from other languages, as Present-day English often does. This homogeneous nature of the Old English lexicon, which is purely Germanic, has an important consequence for word-formation, which Kastovsky explains in the following terms:

> The vocabulary [of Old English-JMA] is characterized by large morphologically related word-families, where the relationship is transparent not only formally but most often also semantically. Put differently, much of the OE [Old English-JMA] vocabulary is derivationally related by productive word-formation patterns. (Kastovsky, 1992:294)

In the same line, Lass remarks:

> The older an IE [Indo-European-JMA] language, the more transparent and complex its derivational morphology; and, indeed, the more derived forms there appear to be, and the more central derivation appears to be to overall lexical structure. (Lass, 1994:198)

Having made it clear that Old English has been chosen as the language of analysis because of the generalization and transparency of its morphology, the remaining of this work will shed light on the question of how transparent Old English word-formation is. The phenomena under scrutiny do not add to the alleged transparency of the derivational morphology of Old English. On the contrary, they undermine it, either for reasons of formal opaqueness (arising if there is no difference of form between base and derivative) or for reasons of semantic opaqueness (turning up when no difference of

meaning can be identified between the input and the output of a word-formation process). Against this background, the main aims of this chapter are to clarify a number of terminological questions relating to the distinction between zero derivation and conversion and to offer a general account of these phenomena, along with empty morphs, in Old English derivational morphology. The analysis that is carried out in the following sections shows that zero derivation and redundant derivation with empty morphs are related phenomena if word-formation is considered in its syntagmatic and paradigmatic dimensions. Moreover, the discussion of the zero alternation reported below yields conclusions relevant for the organization of the Old English lexicon.

2 A typology of affixless derivation in Old English

When the phenomenon of word-formation is considered in its paradigmatic dimension, recurrent pairings of meaning and form turn up, which I have termed somewhere else (Martín Arista 2006) *morphological alternations*, after Bloomfield´s classical definition of an alternation as a recurrent contrast of form and meaning. As illustration, consider the following derivatives of the Old English diminutive suffix *-incel*:

(1) *bo:gincel* 'small bough', *byrðincel* 'a little burden', *cofincel* 'littlechamber', *ðe:owincel* 'little servant', *liðincel* 'little joint', *ra:pincel* 'small rope', *scipincel* 'little ship', *sta:nincel* 'little stone', *su:lincel* 'small furrow', *tu:nincel* 'small property', *wilnincel* 'a little female servant'[3]

Although there arise instances of lexicalization (in the sense of lack of analysability) such as *do:cincel* 'bastard', *hæftincel* 'slave' and *hu:sincel* 'habitation', in general there is a recurrent meaning contrast between bases like *scip* 'ship' and diminutives like *scipincel* 'little ship'. The examples above raise the question from the perspective of the affix. From the angle of the base of derivation, it is very frequently the case that the combination of a given base with different affixes turns out clearly distinguishable meanings, as in (2):

[3] The evidence gathered for this research has been retrieved from the lexical database of Old English *Nerthus* (www.nerthusproject.com). The colon represents vowel quantity.

(2) *bro:ðorli:cnes* 'brotherliness', *bro:ðorli:c* 'brotherly', *bro:ðorræ:den* 'fellowship', *bro:ðorscipe* 'brotherhood', *bro:ðorle:as* 'brotherless'

The derivatives in (2) focus on the main function of derivational morphology, namely to produce new meanings by modifying the already existing ones. Paradigmatic alternations such as *ø/-incel* give rise to the derivational paradigm of Old English, which is realized by the paradigms of individual lexical items, often strong verbs, as is the case with the one of *bacan* 'bake' given in (3):

(3) *a:bacan* 'to bake', *ascbacen* 'baked on ashes', *bacan* 'to bake', *bæcere* 'baker', *bæcering* 'gridiron', *bæcern* 'bakery', *bæcestre* 'baker', *ealdbacen* 'stale', *elebacen* 'cooked in oil', *gebæc* 'bakemeats', *heorðbacen* 'baked on the hearth', *ni:wbacen* 'newly baked', *ofenbacen* 'baked in an oven'

While an alternation can frequently be identified, in the sense of a recurrent and predictable contrast of meaning between the output of a derivational process and its input, it is also true that there are instances in which no formal or functional contrast exists between the derivative and its base. As I have remarked above, these instances constitute mismatches because there is no explicit form that performs a function or because no obvious function is served by an explicit form. As for the former question, the phenomena at stake are zero derivation and conversion; regarding the latter question, the phenomenon under scrutiny is the zero morph. I subsume zero derivation and conversion, on the one hand, and zero morph, on the other hand, under the label of zero alternation and, for the time being, do not distinguish between zero derivation and conversion. Consider, as a point of departure for discussion, the following instances:

(4) (a) *a:ngenga* 'solitary goer, isolated one'
a:ngenga 'solitary, isolated'
(b) *eorðstyren* 'earthquake'
eorðstyrennes 'earthquake'

The noun *a:ngenga* 'solitary goer, isolated one' in (4a), which qualifies as a compound with base from the paradigm of the strong verb *gangan* 'go', takes on a new adjectival function in such a way that there is no formal difference between the two citation forms

(nominative singular masculine) and, more importantly, no derivational affix is attached to the derived form. Turning to (4b), no change of meaning results from the attachment of the suffix *-nes* to the already suffixal form *eorðstyr-en* 'earthquake'. No change of gender is triggered, either, by the suffix *-nes*, given that both nouns are inflected for the feminine.

In general, word-formation involves the external or internal modification of derivation bases to convey new meanings. External modification attaches lexical or grammatical forms to bases of derivation, whereas internal modification changes one or more segments of the base, rather than attaching alien material to the base of derivation, as external modification does. This difference is shown by example (5), which displays, respectively, an instance of suffixation with *-ung* and ablaut strong verb > adjective:

(5) (a) *hand* 'hand' > *handlung* 'handling'
(b) *bli:can* 'shine' > *blæ:c* 'bright'

Affixation, as illustrated by (5a) is the main means of external modification in Old English, while ablaut, as shown by (5b), is the best exponent of internal modification. Leaving aside compounding, there are two types of affixless derivation in Old English: zero derivation and conversion. Zero derivation is derivation without derivational morphemes, which calls for a new subdivision: zero derivation proper (which constitutes external modification) when inflectional morphemes are used for derivational purposes, thus performing two functions because they do not lose their inflectional character; and zero derivation by ablaut, which takes place when the base of derivation undergoes internal modification. This subdivision is illustrated by (6):

(6) (a) *bindan* 'to bind' > *binde* 'headband'
(b) *faran* 'go' > *fær* 'movement'

In (6a) the verbal inflection for the infinitive *-an* is replaced by the nominal inflection for the nominative feminine singular *-e*, while in (6b) the infinitival ending is lost and the root vowel is changed. Zero derivation proper and zero derivation by ablaut are not mutually excluding: there are instances in which zero derivation makes use of ablaut along with an inflectional ending, as can be seen in the following examples:

(7) (a) *helm* 'protection' ~ *gehilmed* 'helmeted'
(b) *muð* 'mouth' ~ *gemy:ðe* 'junction of two streams'

To the modern eye, the process that turns out the adjective *a:ngenga* 'solitary, isolated' in (4a) from the noun *a:ngenga* 'solitary goer, isolated one' is zero derivation *or* conversion. In general, the distinction between these phenomena is unclear and rather controversial in the literature. Although it is acknowledged that conversion is more related to lexical class whereas zero derivation falls rather on the formal side, it is often the case that no strict separation is postulated between both, thus, for instance, Bauer (1988), Stekauer (1996) and Manova and Dressler (2005), who deny the existence of zero derivation.[4] Other authors, like Bauer and Varela (2005:12) accept zero derivation, but consider it *out of favour* with respect to conversion. I concur with Kastovsky (2005a:33) that zero derivation is intimately related to the notion of motivation, a central one to the structural-functional tradition. I also agree with Kastovsky (2005a) on the relevance of zero derivation for a diachronic study of English word-formation, although I depart company with this author as regards the one-to-one relationship between form and function.

In an analysis aimed at avoiding the proliferation of zeroes in Old English inflectional morphology, Kastovsky remarks:

> In the absence of overt derivational suffixes, all we are left with are case/number endings, which produce word-forms and have no derivational function. This means that a situation where some morphological exponent (the stem-formative) did double duty both as a derivational and inflectional marker is now replaced by a system where inflection and derivation are strictly separate domains, inflectional exponents creating word-forms of lexical items, and derivational exponents producing new lexical items, to which inflectional endings have to be added. But this also means that in those instances where the stem-formatives originally acting as derivational exponents were lost or reinterpreted (e.g. *spring, cuma, hunta*) we have to assume their replacement by a zero morpheme in order to keep up the binary interpretation of word-formation syntagmas. (Kastovsky, 2005a:44)

[4] On conversion in English and directionality, see also Balteiro (2007a, b).

In the proposal that I advance below the emphasis is not put on the units, but on the processes of word-formation without explicit derivational material. If, on the one hand, the focus shifts from the nature (derivational vs. inflectional) of the units to the process of zero derivation as involving some sub-phenomena, and, on the other, the double function of certain morphemes is not excluded, an overall analysis can be offered which rests basically on the concept of zero derivation without zero morphemes, thus the term zero alternation: when considered in the whole derivational paradigm, two morphologically related lexical items show a mismatch of form because the derivative is derivationally unmarked.

This definition allows for the inclusion of the following typology of zero derivation processes into the word-formation of Old English: (i) zero derivation with explicit inflectional morphemes and without explicit derivational morphemes, as in *ri:dan* 'to ride' > *ri:da* 'rider'; (ii) zero derivation without explicit or implicit morphemes, either inflectional or derivational, as in *bi:dan* 'to delay' > *bi:d* 'delay'; (iii) zero derivation without inflectional or derivational morphemes but displaying ablaut, as in *dri:fan* 'to drive' > *dra:f* 'action of driving'; and (iv) zero derivation with ablaut and formatives that can no longer be considered productive affixes, such as *-m* in *fle:on* 'to fly' > *fle:am* 'flight'. Given this typology, the derivation of *me:os* 'mossy' from *me:os* 'moss' falls under type (ii) whereas the one of *nearu* 'constricted' from *nearu* 'strait' belongs to type (i).

When dealing with the lack of a biunivocal correspondance between content and expression in this particular area of word-formation, I benefit from the insights of the structural-functional tradition, which, unlike classical structuralism, finds no problem in accepting incongruencies form-function. For Kastovsky (1968), *ri:da* 'rider' is a product of inflection, which overlooks the morphological relationship holding between the noun *ri:da* 'rider' and the strong verb *ri:dan* 'ride' as well as the Effector role, in the terminology of Van Valin and LaPolla (1997) and Van Valin (2005), performed by the nominal argument of the verb in the semantic-syntactic correlate. I consider, therefore, *ri:da* a zero derivative of *ri:dan*, thus a derivational product, even though it resorts to inflectional means, namely the morpheme *-a*. This proposal is also different from Kastovsky's (2005a:37), for whom zero is a *place-holder for overt affixes having a similar function*. Although this analysis has the important advantage over Kastovsky´s (1968) of stating morphological relatedness, it restricts zeroes to inflection and, in spite

of admitting that there are *formal means to derive one lexical item from another* (Kastovsky 2005a:37), excludes or, at least, does not engage in types (ii), (iii) and (iv) of my typology.

Kastovsky´s (2005a) approach to the question follows from a series of publications that have demonstrated the existence of a shift in the type of Old English morphology from variable base morphology to invariable base morphology (Kastovsky 1986, 1989, 1990, 1992). This shift blurrs the effects of ablaut, which is purely morphological at the end of the period (Kastovsky 2006). Pesquera Fernández (2009) has found a significant number of alternations that lack phonological motivation in the derivation from strong verbs in Old English, which goes in the line of Kastovsky´s shift. On the other hand, González Torres (2009) has convincingly shown that the bases of derivation of affixal nouns are harder to identify than Kastovsky´s (2005a) strict separation of inflectional and derivational morphology predicts: approximately 1,000 affixal nouns out of a total of ca. 3,300 have more than one base of derivation, typically a verb and a noun or a verb and an adjective. That is, derivational morphology is more variable in Old English than Kastovsky (2006) considers, at least in nouns. Or, in other words, Kastovsky´s (1992, 2006) shift from variable to invariable morphology probably takes place later than this author holds and, consequently, there is no problem in considering the suffix *-a* in *ri:da* 'rider' inflectional and derivational while analysing the process of building *ri:da* on the strong verb *ri:dan* 'to ride' as zero derivation. In the struggle for stating morphological relatedness, zero derivation stands as the last line of defence.

Summarising, zero derivation in Old English can be broken down into zero derivation with explicit inflectional morphemes, zero derivation without explicit or implicit morphemes, zero derivation without morphemes but displaying ablaut, and zero derivation with ablaut and former affixes that constitute unproductive formatives in synchronic analysis. To this typology of zero derivation, which is restricted to variable lexical categories, the derivation of lexical items belonging to invariable classes must be added. In this proposal, this is done under the label of *conversion*. Having proposed the basics of the typology of affixless word-formation in Old English, the remainder of this section addresses some pending questions concerning conversion and zero derivation at this stage of the English language.

Conversion is category extension without external or internal modification. Two instances of conversion, from pronoun to adverb and from adverb to adposition, respectively, follow in (8):

(8) (a) *æ:nig* (pronoun) 'any, any one' > *æ:nig* (adverb) 'only'
(b) *æ:r* (adverb) 'before' > *æ:r* (adposition) 'before'

The analysis of the previous examples is based on the existence of modification as well as the presence and nature of affixes. When a derivational affix turns up, affixation proper is at work. If no derivational affix is attached, the next step involves deciding whether there is formal modification or not. If, given the whole inflectional paradigm, there is no modification between the base and the derivative, the morphological process in point is conversion. If there is modification, there remains to decide if an inflectional affix or ablaut is used for derivational purposes. That is, whereas zero derivation requires ablaut or the attachment of an inflectional affix, conversion is category extension without affixes or ablaut. This classification revolves around lexical class in a significant way. When affixless derivation holds between variable lexical classes, the phenomenon at stake is zero derivation, while conversion has an output that belongs to an invariable lexical class. Put differently, if the output of derivation bears inflectional ending (thus belonging to a variable lexical class) the phenomenon under scrutiny is zero derivation; if the output of the derivational process shows no inflectional ending (which makes it a member of an invariable lexical class), the derivational process at work is conversion. In Old English zero derivation is strongly associated with the strong verb with its inflectional forms, whereas conversion affects grammatical classes, whose members produced by conversion do not have verbal bases but adjectival, adverbial and adpositional ones.

After setting the terminological question, the following section delves into zero derivation in Old English and opens by considering the basic status of strong verbs in word-formation.

3 Zero derivation

The Germanic strong verb with its present, preterit and past participle stems is central to lexical formation, as is shown by Bammesberger (1965) and Seebold (1970), among others. Focusing on Old English, Kastovsky (1992), following Hinderling (1967),

considers strong verbs the starting point of word-formation processes. Take, as illustration, the derivational paradigm of the verb *(ge) drifan* 'drive':

(9) *(ge)dri:fan* (strong I) pret. sing. *dra:f*, pret. plur. *drifon, dreofon*, past part. *drifen* 'to drive, force, hunt, follow up, pursue; drive away, expel; practise, carry on; rush against, impel, drive forwards or backwards; undergo'
noun, feminine: *dra:f* 'action of driving', *(ge)drif* 'fever', *fordrifnes* 'opposition', *onwega:drifennes* 'a driving away', *to:dræ:fednes* 'dispersion', underdrifennes 'subjection', *u:tdræ:f* 'decree of expulsion',
noun, masculine: *dræ:fend* 'hunter', *u:tdræ:fere* 'driver out'
noun, neuter: *gedri:f* 'a drive'
verb, strong (I): *a:dri:fan* 'to drive', *bedri:fan* 'to beat', *efta:dri:fan* 'to reject', *eftfordri:fan* 'to drive away', *fordri:fan* 'to sweep away', *frama:dri:fan* 'to remove', *frama:dry:fan* 'to drive away', *indri:fan* 'to ejaculate', *oferdri:fan* 'to overcome', *onwega:dri:fan* 'to drive away', *to:dri:fan* 'to scatter', *ðurhdri:fan* 'to drive through', *u:ta:dri:fan* 'to drive out', *u:tdri:fan* 'to expel', *wiðdri:fan* 'to repel'
verb, weak (1): *a:dræ:fan* 'to drive away', *dry:fan* 'to stir up', *fordræ:fan* 'to compel', *(ge)dræ:fan* 'to drive', *to:dræ:fan* 'to scatter', *u:ta:dræ:fan* 'to drive out'
adjective: *fullgedrifen* 'full of wild beasts', *undrifen* 'not driven or tossed'

As can be seen in (9), strong verbs such as *bedri:fan* 'to beat' derive from the infinitive of the basic strong verb. The noun *dra:f* 'action of driving' derives from the preterit form of the strong verb, while the adjective *undrifen* 'not driven or tossed' derives from the past participle. Diachronically, the derivatives with *æ* like *u:tdræ:f* 'decree of expulsion' derive from the Germanic weak verb **draibjanan* > Old English *(ge)dræ:fan* 'to drive' (Holthausen 1963:75; Seebold 1970:163; Orel 2003:74), although the weak verb can be traced back to the strong one in Germanic (Hinderling 1967:37). Synchronically, *dræ:f* holds a vocalic alternation with the preterit singular form of the strong verb *dra:f* of the seventh vocalic type (A7) identified by Kastovsky (1968:67), which is due to i-mutation and involves the back vowel *a* and the front vowel *æ*. Strong verbs are the spine of Old English word-formation, not only because they produce derivatives belonging to other lexical classes but also because they constitute the base of derivation of other strong

verbs (*dri:fan* 'drive' > *efta:dri:fan* 'to reject', *frama:dry:fan* 'to drive away', *∂urhdri:fan* 'to drive through', etc.), which, in turn, give rise to new derivations, as in *dri:fan* 'drive' > *fordri:fan* 'to sweep away' > *fordrifnes* 'opposition'. In the context of the whole lexicon of Old English, the lexical database *Nerthus* yields 12,764 lexemes that belong to the derivational paradigms of strong verbs, out of a total 30,157 in *Nerthus*, which amounts to 42.3% of the lexicon.

Extensive lexical analysis of Old English word-formation has shown that whenever there is a strong verb in a series of morphologically related words, the strong verb is likely to qualify as the base of derivation of the paradigm. It is hard to find exceptions to this generalization, which is supported by the information provided by etymological dictionaries of Germanic such as Seebold (1970) and Orel (2003), but consider the derivational paradigm *swe:g-/swo:-*:

(10) *a:nswe:ge* 'harmonious', *a:swe:gan* 'to thunder, intone', *a:swo:gan* 'to cover over', *bencswe:g* 'bench-rejoicing', *(ge)swe:ge* 'harmonious', *geswe:gsumli:ce* 'unanimously', *geswo:gung* 'swooning', *ha:sswe:ge* 'sounding hoarsely', *hearpswe:g* 'sound of the harp', *hereswe:g* 'martial sound', *hlu:dswe:ge* 'loudly', *inswo:gan* 'to invade', *inswo:gennes* 'onrush', *midswe:gan* 'to cover, choke', *ona:swe:gan* 'to sound forth', *samodswe:gende* 'consonantal', *samswe:ge* 'sounding in unison', *selfswe:gend* 'vowel', *swe:g* 'sound, melody, voice, musical instrument', *swe:gan* 'to make a noise', *swe:gcræft* 'music', *swe:gdynn* 'noise, crash', *swe:gendlic* 'vocal', *swe:ghle:o∂or* 'sound', *swe:ging* 'sound', *swe:glic* 'sonorous', *swe:tswe:ge* 'agreeable (of sound)', *swi:∂swe:ge* 'strong-sounding', *swo:gan* 'to sound', *ungeswe:ge* 'inharmonious', *∂urhswo:gan* 'to penetrate', *welswe:gende* 'melodious'

Seebold (1970) does not provide a strong verb etymology in Germanic. Holthausen (1963:334) and Orel (2003:393) give the noun **swegl* 'music', whereas Heidermanns (1993:576) opts for the adjective **sweiga* 'still'. Kastovsky (1968:109) analyses the morphological relation between the strong verb (VIIf) *swo:gan* 'to sound' and the noun *swe:g* 'sound' and identifies a vocalic alternation (A8) and a consonantal one (C4) caused, respectively, by i-mutation and palatalization. This reasoning reinforces the basic character of the strong verb, with the corresponding derived status of the noun.

However, morphonological analysis does not help when the paradigm under scrutiny is one like *teld*-, given below:

(11) *beteldan* 'to cover', *bu:rgeteld* 'pavilion', *ganggeteld* 'portable tent', *(ge)teld* 'tent', *(ge)teldan* 'to spread a covering', *geteldung* 'tabernacle', *geteldwurðung* 'feast of tabernacles', *oferteldan* 'to cover over', *teldgehli:wung* 'tabernacle', *teldian* 'to spread (net) ', *teldsticca* 'tent-peg', *teldtre:ow* 'tent-peg', *teldwyrhta* 'tent-maker', *tyldsyle* 'tent'

Holthausen (1963:344) gives the noun *teld* 'tent' as the source of *(ge)teldan* 'to spread a covering' (strong IIIb) and *teldian* 'to spread (net)' (weak). Taking a similar line, Seebold (1970:501) provides Gmc. *teldam* and *teldo:* for, respectively, Old English *teld* and *teldian*. If no morphonological alternation holds, a case may be made for the noun as base of the strong verb, but if the direction of i-mutation goes from the noun to the verb, as in *sta:n* 'stone' > *ofstæ:nan* 'to stone' (strong I), the case for the basic noun and the derived strong verb is more convincing. The same situation holds with respect to the adjective *bra:d* 'broad' and the strong verbs *(ge)bræ:dan* 'to make broad', *forebræ:dan* 'to prolongue' and *oferbræ:dan* 'to spread over' (strong VIIe). Heidermanns (1993:40) lists the Gmc. primary adjective *breida*- 'broad' while Orel (2003:53) offers both the Gmc. adjective and weak verb, namely **braidaz* 'broad' and **braidjanan* > Old English *bræ:dan* 'to make broad'.

Pilch (1970) and Orel (2003), while acknowledging the decisive role played by the strong verb in the formation of words in the old Germanic languages, also list a few members of other lexical categories from which strong verbs are derived. Pilch (1970:132) finds six instances of denominal strong verbs of the seventh class. Those without i-umlaut are given in (12a) and those showing i-umlaut in (12b):

(12) (a) *ræ:dan* 'to advise' (<*ræ:d*), *slæ:pan* 'sleep' (<*slæ:p*), *blandan* 'blend' (<*gebland*), *hro:pan* 'to shout' (<*hro:p*)
(b) *we:pan* 'weep' (<*wo:p*), *spæ:tan* 'spit' (<*sp:tl*)

Additional evidence of denominal strong verbs formed by zero derivation is scarce, probably restricted to the ones that can be seen in (13):

(13) (a) *sceððan* 'to hurt, crush, oppress, disturb (<*sceaða*)
(b) *plegian* 'to move rapidly' (<*plega*)

Deverbal (strong) and deadjectival strong verbs produced by zero derivation are more frequent, but still constitute an exceptional phenomenon. Some illustrations of each class follow in (14):

(14) (a) *glæ:dan* 'to cause to slip' (< *gli:dan*), *onbrinnan* 'to set fire to' (< *onbeornan*), *bre:dan* 'to move quickly' (< *bregdan*)
(b) *grimman to rage* (< *grimm*), *manigfealdan* 'to multiply' (< *manigfeald*), *swi:ðan* 'to strengthen' (< *swi:ð*)

The examples just set focus on the exceptional character of strong verbs as target of zero derivation. Regarding strong verbs as source of zero derivation, the literature has paid some attention to the formation of nouns from strong verbs, thus Kastovsky (1968), whereas the other major lexical categories require more research in this respect.[5] Kastovsky (1968) lists around 700 nouns zero derived from strong verbs (mainly of classes III, V and VII) and another 500 derived from weak verbs. Given that this author deals with the nominal class only and, moreover, is concerned with morphonological alternations such as *fe:dan* 'feed' ~ *fo:da* 'food' and restricts his analysis to the major lexical classes, I offer an overall account of this area of Old English word-formation below.

Beginning with nouns, there are around 1,700 zero derived members of this category in the lexicon, 750 of which qualify as masculine, 450 as feminine and another 450 as neuter (the figures are approximate). Some illustrations follow in (15): the nouns in (15a) are masculine, those in (15b) feminine and the ones in (15c) are inflected for the neuter gender.

(15) (a) *belg* bag (< *belgan*), *forðcyme* 'coming forth' (< *forðcuman*), *incyme* 'entrance' (< *cuman*)
(b) *gra:p* 'grip' (< *gri:pan*), *u:tdræ:f* 'decree of expulsion' (< *u:tdri:fan*), *wæcce* 'watch' (< *wacan*)

[5] But see Palmgren (1904), Schön (1905), Schuldt (1905), Jensen (1913), Bammesberger (1965), Hinderling (1967), Pilch (1970) and Stark (1982).

(c) *gehweorf* 'a turning' (< *hweorfan*), *gesprec* 'speech' (< *sprecan*), *gesweorc* 'cloud' (< *sweorcan*)

These instances show, to begin with, that the presence of ablaut, as has been remarked above, is not a requirement for the existence of zero derivation. In (15a), for instance, there is no morphonological contrast between *belg* and *belgan*, although both words are morphologically related to each other through the derivational process under scrutiny. Morphonological alternations hold mainly between strong verbs and their zero derivatives and, secondarily, between weak verbs and their derivatives by means of zero, morphonological alternations involving nouns and adjectives being exceptional. Another remarkable aspect of these examples concerns the prefix *ge-*: approximately one half of the neuter nouns derived by the zero morpheme display this prefix (the amount of *ge-* masculines is about one tenth, whereas that of feminine nouns containing *ge-* is irrelevant).

Zero derived nouns come from strong verbs, adjectives, weak verbs and other nouns, as is illustrated, respectively by (16a)-(16d):

(16) (a) *bælc* 'pride' (< *belgan*), *cuma* 'stranger' (< *cuman*), *ece* 'ache' (< *acan*)
(b) *a:ngilde* 'single payment for damage (< *a:ngilde*), *hæ:st* 'violence' (< *hæ:st*), *lama* 'crippled' (< *lama*)
(c) *cwild* 'death' (< *cwelan*), *geðo:ht* 'thought' (*geðencan*), *weorc* 'work' (< *wyrcean*)
(d) *æ:boda* ' messenger' (*æ:bod*), *beswica* deceiver (< *beswic*), *forhto* 'fear' (< *forht*)

Zero derived weak verbs come from nouns, as in (17a), adjectives, as in (17b) and strong verbs, as in (17c):

(17) (a) *æ:cgan* 'to set on edge' (< *ecg*), *hagolian* 'to hail' (< *hagol*), *hringan* 'to ring' (< *hring*)
(b) *ha:tian* 'to be or get hot' (< *ha:t*), *hwi:tian* 'to whiten' (< *hwi:t*), *le:ofian* 'to be or become dear' (< *le:of*)
(c) *drencan* 'to give to drink, drown' (*drincan*), *slæhtan* 'to strike' (< *sle:an*), *to:hry:ran* 'to shake in pieces' (< *to:hre:osan*)

Weak verbs, as is the case with neuter nouns, often display the prefix *-ge*: around 600 out of 1,400 take this prefix. Weak verbs derived by zero derivation belong to the morphological classes 1, 2 and 3, as illustrated, respectively by (18a), (18b) and (18c):

(18) (a) *befe:gan* 'to join', *derian* 'to damage', *reccan* 'to take care of'
(b) *broccian* 'to tremble', *forheardian* 'to grow hard', *he:afdian* 'to behead'
(c) *æthabban* 'to retain', *libban* 'to live', *so:ðsecgan* 'to speak the truth'

Zero derived nouns and weak verbs are far more frequent than the adjectives derived by the same means: there are around 1,700 zero derived nouns and 1,400 weak verbs, approximately, as opposed to around 500 adjectives produced by this morphological process. Most of these derive from verbs. The base is a strong verb, as in (19a), far more frequently than a weak verb, as in (19b):

(19) (a) *inbyrde* 'born on the estate' (< *inberan*), *onfunden* 'experienced' (< *onfindan*), *ðurhfe:re* 'penetrable' (< *ðurhfaran*)
(b) *a:fandod* 'excellent' (< *a:fandian*), *besce:awod* 'thoughtfuf' (< *besce:awian*), *gelygnod* 'perjured' (< *gelygnian*)

The rest constitute zero derivatives of nouns, including, for instance, the ones given in (20). The adjectives in (20a) come from nouns and those in (20b) from strong verbs through nouns:

(20) (a) *hre:ofl* 'leprous' (< *hre:ofl*), *i:sen* 'of iron' (< *i:sen*), *yppe* 'evident' (< *yppe*)
(b) *crypel* 'crippled' (< *cre:opan*), *hryre* 'perishable (< *hre:osan*), *ðearf* 'necessary' (< *ðurfan*)

Recapitulating, this section has offered an overview of zero derivation and the following points have been stressed: (i) the main source of zero derivation are strong verbs, although weak verbs, nouns and adjectives also perform the function of derivational bases; (ii) all major lexical categories, including strong verbs, are targets of zero derivation; and (iii) the phenomenon of zero derivation is quantitatively relevant. Apart

from these aspects, in the following sections I raise the question of empty morphs in Old English and explain it on the grounds of the coexistence of zero derivation and affixal derivation in the Old English lexicon.

4 Redundant derivation and empty morphs

Whereas the previous section has focused on the zero expression of morphological relatedness, this one deals with the opposite phenomenon, that is, the explicitly marked morphological relatedness by means of an affix that does not cause a net semantic effect.[6] I use the term *empty morph* to describe the latter situation. The empty morph in Old English can be found in instances like the following ones:

(21) (a) *ðri:stlic/ðri:stiglic* 'daring'
(b) *so:ðfæst/so:ðfæstlic* 'true'

The morphs *-ig-*, and *-lic*, in (21a) and (21b) respectively, do not produce a significant meaning change, with the important difference that example (21a) illustrates the empty morph in intermediate position, while example (21b) shows a final empty morph. It must be noted from the beginning of this discussion that the empty morph thus defined is restricted to recursive word-formations like *ðri:st-ig-lic* 'daring' and *so:ð-fæst-lic* 'true' whereas no empty morph formation is identified in a non-recursive suffixal derivative such as *onwealdig* 'powerful' with respect to the zero derived adjective *onweald* 'powerful' (<*gewealdan* 'to rule'). In other words, internal modification is put aside in the analysis of empty morphs.

The empty morph is mainly an adjectival phenomenon in Old English for two reasons. Firstly, it appears in derived adjectives far more often than in derived members of other lexical categories and, secondly, it involves adjectival suffixes in the vast majority of instances. In this line, no empty suffix has been found in the class of verbs. As for the categories noun and adverb as displaying empty morph formations, consider the following examples:

(22) (a) *ma:nli:ce/ma:nfulli:ce* 'wickedly'

[6] See Lieber (2004) with reference to redundant affixation and semantic compatibility.

(b) *ofermo:dli:ce/ofermo:digli:ce* 'proudly'
(c) *oferflo:wednes/oferflo:wedli:cnes* 'excess'
(d) *gema:hnes/gema:hlicnes* 'importunity'

As can be seen in the examples in (22), the suffixes involved in empty morph formations are adjectival, as is the case with *-ful*, in (22a), *-ig* in (22b), and *li:c* in (22c) and (22d), regardless of the fact that they appear in deadjectival derivatives such as the adverbs in (22a) and (22b) or the nouns in (22c) and (22d). This is seen more clearly if empty morph nominal formations are analysed in detail, as in (23):

(23) (a) ø/*-ful* *ðe:ostornes/ðe:ostorfulnes* 'darkness'
(b) ø/*-georn* *fyrwitnes/fyrwitgeornes* 'curiosity'
(c) ø/*-ig* *ofermo:dignes/ofermo:dnes* 'pride'
(d) ø/*-lic* *gne:aðnes/gne:aðlicnes* 'frugality'
(e) ø/*-mod* *meagolnes/meagolmo:dnes* 'earnestness'
(f) ø/*-ræ:d* *hi:wcu:ðnes/hi:wcu:ðræ:dnes* 'familiarity'
(g) ø/*-sum* *gehealdnes/gehealdsumnes* 'keeping'

Empty morphs in intermediate position arise in abstract deadjectival nouns formed by means of the nominal suffix *-nes* and inflected for the feminine gender. It must be noted that the empty morph is kept all the way down the derivation. For instance, the empty morph *-ful* can be identified not only in the pair *ðe:ostornes/ðe:ostorfulnes* 'darkness' but also in *ðe:ostor/ðe:ostorful* 'dark', in such a way that the basic adjective *ðe:ostor* 'dark' is the base of derivation of *ðe:ostorfulnes* 'darkness' and the derived adjective *ðe:ostorful* 'dark' constitutes the input to the derivational process of suffixation that turns out *ðe:ostorfulnes* 'darkness'. In other words, the empty morph appears first and foremost in the contrast between the basic and the derived adjective, which is established by means of the suffix *-ful*. A similar analysis can be carried out of the other instances presented in (23).

Empty morphs in intermediate position can be found in deadjectival adverbs of manner derived by means of the suffix *-li:ce*. The combinations include the affixes given in (24):

(24) (a) *-li:ce/-fæstli:ce* *so:ðli:ce/so:ðfæstli:ce* 'truly'

(b) *-li:ce/-fulli:ce* *fa:cenli:ce/fa:cenfulli:ce* 'deceitfully'
(c) *-li:ce/-sumli:ce* *lufli:ce/lufsumli:ce* 'kindly'

As has been pointed out with respect to nouns, adverbs such as *so:ðfæstli:ce* 'truly' display an empty morph in intermediate position as a result of a previous step of their derivation. In this case, the basic adjective *so:ð* 'true' is the base of derivation of *so:ðli:ce* 'truly' while the derived adverb *so:ðfæstli:ce* 'truly' is formed recursively from the previously derived adjective *so:ðfæst* 'true', which displays an empty morph with respect to *so:ð* 'true'. A similar analysis is applicable to (24b) and (24c).

An important consequence of the morphological relationship just described with reference to examples (23) and (24) is that no instances can be found of empty morphs in the final position of derived nouns or derived adverbs, whereas derived adjectives can display empty morphs both in intermediate and final positions. Beginning with the intermediate position, cases in point are the ones rendered by (25), which contain empty morphs with the adjectival suffixes *-ig*, *-fæst*, *-ful* and *-e*, respectively:

(25) (a) ø/*-ig* *gesundlic/gesundiglic* 'safe'
(b) ø/*-fæst* *so:ðlic/so:ðfæstlic* 'true'
(c) ø/*-ful* *andgietlic/andgietfullic* 'inteligible'
(d) ø/*-e* *gede:flic/gede:felic* 'fit'

The pair *gesundlic/gesundiglic*, as is the case with *ðe:ostornes/ðe:ostorfulnes* in (25a), keeps the empty morph throughout the derivation (*gesund* >*gesundlic* 'safe' and *gesund*>*gesundig*>*gesundiglic* 'safe'). As in the pair *ðe:ostornes/ðe:ostorfulnes*, a basic adjective is the input to two derivational processes of suffixation, one in which the empty morph is the only suffix (*gesund* >*gesundlic*) and another one in which the empty morph attaches recursively to the previously derived *gesundig* to turn out *gesundiglic.*

Whereas the empty morph can be identified in intermediate position as realized by four different suffixes, in final position it is associated basically with the suffix *-lic*, in combinations such as the ones in (26). It must be born in mind, however, that the number of different affixes to which *-lic* attaches in empty morph adjectival formations is remarkable:

(26) (a) *-cund/-cundlic* *metcund/metcundlic* 'metrical'
(b) *-e/-elic* *ungefræ:ge/ungefræ:gelic* 'unusual'
(c) *-ed/-edlic* *una:ly:fed/una:ly:fedlic* 'illicit'
(d) *-en/-enlic* *una:meten/una:metenlic* 'unmeasured'
(e) *-end/-endlic* *oferflo:wend/oferflo:wendlic* 'excessive'
(f) *-fæst/-fæstlic* *gemetfæst/gemetfæstlic* 'moderate'
(g) *-feald/-fealdlic* *hundfeald/hundfealdlic* 'hundred-fold'
(h) *-ful/-fullic* *geflitful/geflitfullic* 'contentious'
(i) *-ic/-iclic* *canonic/canoniclic* 'canonical'
(j) *-ig/-iglic* *unmihtig/unmihtiglic* 'weak'
(k) *-isc/-isclic* *mennisc/mennisclic* 'human'
(l) *-le:as/-le:aslic* *scamle:as/scamle:aslic* 'shameless'
(m) *-od/-odlic* *ungehi:wod/ungehi:wodlic* 'unformed'
(n) *-ol/-ollic* *sme:a∂ancol/sme:a∂ancollic* 'subtle'
(o) *-sum/-sumlic* *langsum/langsumlic* 'tedious'
(p) *-wi:s/-wi:slic* *gesce:adwi:s/gesce:adwi:slic* 'sagacious'

Other suffixes appearing in empty morph adjectival formations include *-mo:d* and *-ig*, illustrated, respectively, by (27a) and (27b):

(27) (a) *-ig/-igmo:d* *re:onig/re:onigmo:d* 'mournful'
(b) *-iht/ihtig* *hre:odiht/hre:odihtig* 'reedy'

In this section I have gathered evidence for an empty morph analysis of a significant number of adjectival suffixes which surface in derived adjectives and also in deadjectival nouns and adverbs. This is tantamount to saying that affixation is often meaningful and less frequently meaningless. Consequently, the question has been presented so far from the perspective of individual affixes that attach redundantly in some contexts, which differs from the line adopted in the previous section of focusing on processes rather than on units. Given that this approach has turned out more explanatory, to round off this discussion it is necessary, in the first place, to distinguish the empty morph phenomenon from the process of affix lexicalization and, secondly, to consider the empty morph with respect to the more general process of redundant derivation.

Beginning with lexicalization, the question that arises is whether the empty morph is independent of the process of lexical fading undergone by many Old English affixes, particularly prefixes, which eventually became interchangeable and disappeared or, at least, ceased to be used in a productive way. The phenomenon can be seen clearly in derived strong verbs by means of Germanic prefixes such as the following:

(28) (a) *a:-/be-/for-* *a:weorpan/beweorpan/forweorpan* 'to throw'
(b) *a:-/be-/ge-* *a:le:ogan/bele:ogan/gele:ogan* 'to lie'
(c) *a:-/be-/to:-* *a:brecan/bebrecan/to:brecan* 'to break to pieces'
(d) *a:-/ge-/for-* *a:bla:wan/gebla:wan/forbla:wan* 'to blow'
(e) *a:-/ge-/on-* *a:be:odan/gebe:odan/onbe:odan* 'to command'
(f) *a:-/ge-/to-* *a:helpan/gehelpan/to:helpan* 'to help'
(g) *be-/on-/to-* *becuman/ancuman/to:cuman* 'to arrive'
(h) *be-/for-/of-* *beswelgan/forswelgan/ofswelgan* 'to swallow up'

Affix variation and lexicalization have been discussed with different degrees of detail by de la Cruz (1975), Horgan (1982), Hiltunen (1983), Kastovsky (1992) and Martín Arista (fc) in the wider setting of the decline of the Old English affixal system. As Hiltunen (1983:54) remarks, *the fact that one and the same verb may occcur with two or more different prefixes (...) is often taken to indicate the lack of expressive content in the prefixes, and their incipient decline*. In this respect, Kastovsky (1992:377) notes that *in subsequent copies of one and the same text prefixes are often omitted, added or exchanged for other prefixes without any apparent semantic effect. This points to a considerable weakening of the meanings of these prefixes*. For Brinton and Closs-Traugott (2005:127) *the rise of prepositional verbs is concurrent with the loss of verbal prefixes, which over the OE* [Old English-JMA] *period had weakened, overextended, and lost information content*.[7]

It is my contention that we are dealing with two different phenomena: on the one hand, the lexicalization (in the sense of semantic fading) of the prefixes, and the existence of empty morphs, on the other hand. Apart from the fact that the test of semantic fading is interchangeability, instead of morphological recursivity without

[7] On the prefix *ge-* see also Hinderling (1967), Lindemann (1970) and Martín Arista (2006, 2009).

semantic effect, as in empty morph formations, the significant difference lies in the fact that the Germanic prefixes have disappeared or are fully unproductive, whereas suffixes such as *-lic>-ly* are fully productive nowadays (Marchand 1969) and, moreover, have kept their meaning.

There remains to determine whether the empty morph phenomenon can be inserted into the more general realm of convergent derivation, which can be identified in instances like the following:

(29) (a) *eor∂styren/eor∂styrennes/eor∂styrung* 'earthquake'
(b) *fiscfell/fisclacu/fiscmere/fiscpo:l/fiscwelle* 'fishpond'

Unlike redundant derivations such as *gesce:adwi:s/gesce:adwi:slic* 'wise', which have been explained as the result of empty morphs in recursive word-formation, in (29a) and (29b) there is not recursivity on a compulsory basis and, moreover, affix contrast can be found between suffixes which are fully distinctive in other contexts. The convergent derivation that results from the attachment of bound lexical items, as in (29a), or the compounding with free lexical items, as in (29b), represents a special case of partial synonymy, given that meaning similarity and morphological relatedness are present in instances like those in (29). In Old English, the phenomenon can be found in the major lexical classes of the noun, the adjective and the adverb, as is shown, respectively, by (30a), (30b), and (30c):

(30) (a) *a:li:esendnes/a:li:esing/a:li:esnes* 'redemption'
(b) *una:wend/una:wended/una:wendende/una:wendendlic* 'unchangeable'
(c) *orce:ape/orce:apes/orce:apunga/orce:apungum* 'without cause'

The case with verbs is different. Convergent derivation is a suffixal phenomenon and involves, with the exception of the adverb, suffixes that have survived into Present-day English or even continue in use, whereas the semantic fading of verbal affixes illustrated by example (28) has resulted in the disappearance of the Germanic prefixes in question.

Convergent derivation is typical of triplets of a zero derived adjective and two suffixal derivatives that are morphologically related to the adjective through the shared base of derivation, as in (31a), (31b), and (31c):

(31) (a) *hre:oh /hre:ohful/hre:ohlic* 'stormy'
(b) *torht/torhtlic/torhtmo:d* 'glorious'
(c) *wi:s/wi:sfæst/wi:slic* 'wise'

In adverbs, convergent derivations often involve the suffixes *-e* and *-li:ce*:

(32) (a) *gri:mme/grimli:ce* 'fiercely'
(b) *hæ:ste/hæ:stli:ce* 'violently'
(c) *hnesce/hnescli:ce* 'softly'

The first lexical items in the triplets in (31) and the pairs in (32) display derivational means originating in ablaut and inflection, including bases and affixes. Thus, the strong verb *witan* 'to know' provides the stem-formed base for the zero derived *wi:s* in (31c), which, in turn, is inpputed to the suffixation processes that turn out *wis:fæst* and *wi:slic*. Similarly, the adjective *grimm* 'grim' is inflected for *gri:mme* and derived by *-li:ce* to produce *grimli:ce* in (32a). An interesting aspect of the recursive suffixation of zero derived bases is that affixal derivatives often convey a more specific meaning, whereas zero derivatives are hyperonymic with respect to suffixed forms or, at least, display a wider array of senses. This is the case with nouns and adjectives, illustrated, respectively by (33a) and (33b):

(33) (a) *la:r* 'lore, learning, science, art of teaching, preaching, doctrine, study, precept, exhortation, advice, instigation, history, story, cunning'
la:rdo:m 'teaching, instruction'
(b) *i:del* 'worthless, useless, vain; empty, desolate, bare, void, destitute, devoid (of); idle, unemployed'
i:delgeorn 'slothful, idle, useless'
i:dellic 'vain, idle'

Throughout this process of semantic differentiation the presence of affixes is not the only morphological feature that changes in nouns. The attachment of suffixes to the zero derived base modifies the gender of the noun, typically from the neuter to the masculine, as in (34a), or to the feminine, as in (34b):

(34) (a) *bod* 'command, message, precept, preaching' n.
bodscipe 'command, message' m.
(b) *ealdor* 'life, vital part, age, old age, eternity' n.
ealdnes 'old age' f.

Even this brief presentation of the phenomena at stake has shown that redundant derivation with empty morphs cannot be identified either with semantic fading or convergent derivation. It represents an independent phenomenon that deserves attention not only in its own terms but, above all, for its relation to zero derivation and, ultimately, for its explanatory character for the overall organization of the Old English lexicon. Some concluding remarks in this line are offered in the next section.

5 Concluding remarks

This book chapter has dealt with the zero alternation in Old English as comprising two phenomena, zero derivation and the empty morph, both of which constitute a mismatch between form and function: while the derivational function is served by no explicit derivational form in zero derivation, an explicit affix plays no role in the configuration of the meaning of the derived lexical item. A typology of affixless derivation in Old English has been proposed that distinguishes zero derivation and conversion, zero derivation, in turn, involving zero derivation with explicit inflectional morphemes, zero derivation without explicit or implicit morphemes, zero derivation without morphemes but displaying ablaut, and zero derivation with ablaut and unproductive formatives. A distinction has been drawn between the sort of redundant derivations produced by zero morphs and the semantic fading of prefixes on the one hand and the convergent derivation that results from two or more derivational histories that proceed in the same direction. By way of conclusion, I should like to insist on the relationship among these phenomena and its implications for the organization of the Old English lexicon.

Assuming synchronic continuity in Old English, the evidence furnished in the previous sections indicates that there are, at least, two lexical layers in the Old English lexicon: one in which inflection (including ablaut) provides means for derivation and another one in which derivation makes use of lexical resources of its own. As I have remarked above, the change from variable to invariable base morphology probably

takes place later than Kastovsky (2005a, 2006) holds, at least in derivational morphology, and, more importantly, if no diachronic change is admitted in order to preserve the synchronic integrity of the Old English period, there cannot be type shift, as Kastovsky (1989, 1990, 1992) puts forward, either, because changes of linguistic type arise in the diachronic axis and result from linguistic evolution occurring throughout the history of the language. If the reasoning is correct, two layers coexist in the lexicon of Old English, namely the layer of zero derivation and the layer of affixation. I have proposed a typology of zero derivation phenomena that does justice to the quantitative and qualitative importance of the phenomenon in Old English and gathered evidence for the existence of empty morphs at this stage of the English language. I have the feeling that empty morph formations with affixes that are fully distinctive in other derivations represent the sort of inconsistencies and variations associated with the transition from a system of derivation by inflectional means to a new system of affixation (basically suffixation) proper. Moreover, the existence of convergent derivation demonstrates that the products of derivation by inflectional means and derivation proper coexist and often produce partial synonymy. To close this discussion, I must admit that redundant and convergent derivation as described in this work might be due in part to lack of semantic granularity in the definition of the meanings of the lexical items. For this reason I have referred to partial synonymy: at least a context can be found where the lexical items under scrutiny are synonyms, but more research is needed in this area.

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