Old English strong verbs derived from strong verbs: affix variation, grammaticalisation and recursivity[1]

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This journal article deals with the questions of affix variation and grammaticalisation in the formation of Old English strong verbs and discusses them in the wider context of recursivity. The analysis identifies 47 different patterns of recursivity, none of which involves double recursivity or suffixation. The conclusions are reached that: (i) recursivity in strong verb formation represents the relatively low figure of 9.2%; (ii) the pure affixes constitute a coherent group; and (iii) the analysis of recursivity that is carried out allows to relate formal properties of affix combination to functional questions such as semantic compatibility and grammaticalisation.

Keywords: *Morphology, Word-Formation, Recursitivy, Old English, Strong Verb*

1. Aims, scope and data

The aims of this journal article are to bring together the questions of affix variation and grammaticalisation in the formation of Old English strong verbs as well as to discuss them against the context of recursivity. While the topic of recursivity in Old English strong verbs has not received much attention in the literature, affix variation and lexicalisation have been studied with different degrees of detail by de la Cruz (1975), Horgan (1980), Hiltunen (1983) and Kastovsky (1992) in the wider setting of the decline of the Old English affixal system.

The scope of this article is restricted to affixation and compounding in the formation of strong verbs, leaving aside other word-formation processes less relevant for strong verbs such as zero-derivation.[2] The theoretical approach adopted is structural-functional. In structural terms, the defining properties of derivational morphology are recategorization and recursivity (Martín Arista 2008, 2009). Since no category change is involved in the derivation of strong verbs from other strong verbs, I centre on the property of recursivity. On the functional side, I relate recursivity to more explanatory issues of lexical semantics, lexicalisation and grammaticalisation. In general, the loss of semantic transparency in affixation is termed *lexicalisation*, following Bauer (1983); and the development of grammatical functions in compounding is called *grammaticalisation*, after Hopper and Traugott (2003) and Bauer (2007).[3]

The empirical evidence furnished in this study has been retrieved from the lexical database of Old English *Nerthus* (www.nerthusproject.com), including the inventory of strong verbs, both basic and derived, their meaning, morphological subclass and derivational patterns.

The article is organized as follows. Section 2 discusses the status of strong verbs as bases of derivation, while subsequent sections approach the question mainly from the point of view of derivatives. Section 3 provides a morphological analysis of the processes of affixation and compounding involved in the formation of strong verbs from bases of the same lexical category and morphological class. Section 4 discusses the questions of affix variation and lexicalisation. Section 5 turns to recursivity and relates it to lexicalisation and

grammaticalisation. Section 6 summarizes the main conclusions of the research reported by this article and, to round off, appendix 1 contains all the strong verbs processed throughout the analysis, grouped by derivational affix or adjunct of compounding and provided with type frequency.

2. Strong verbs as bases of derivation

A question of methodological import for the analysis of the recursive formation of strong verbs concerns the basic character of this morphological class in the derivation of the language. There is agreement in the field on the fact that the Germanic strong verb with its present, preterit and past participle stems is central to lexical formation, thus Bammesberger (1965), Seebold (1970) and Heidermanns (1993) among others. Focusing on Old English, Kastovsky (1992), following Hinderling (1967), regards strong verbs as the starting point of word-formation processes. Consider, as illustration, the derivational paradigm of the verb *(ge)drifan* 'drive' given in (1):[4]

(1)   *(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 (1), 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' can be traced back to 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 related 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', *ðurhdri: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 lexicon that comprises 30,157 lexical items, 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). Pilch (1970) or 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 can be derived.[5] Pilch (1970: 132) finds six instances of denominal strong verbs of the seventh class: *ræ:dan* 'to advise' (<*ræ:d*), *slæ:pan* 'sleep' (<*slæ:p*), *blandan* 'blend' (<*gebland*) and *hro:pan* 'to shout' (*hro:p*) without *i*-umlaut; as well as *we:pan* 'weep' (<*wo:p*), and *spæ:tan* 'spit' (<*sp:tl*) with *i*-umlaut. Additional evidence of denominal strong verbs is scarce. Consider, in this respect, the derivational paradigm *swe:g-/swo:-*, which follows in (2):

(2)   *a:nswe:ge* 'harmonious', *a:swe:gan* 'to thunder, intone', *a:swo:gan* 'to cover over, choke', *bencswe:g* 'bench-rejoicing', *(ge)swe:ge* 'sonorous, 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, noise, clamour, tumult; melody, harmony, tone; voice; musical instrument', *swe:gan* 'to make a noise, sound, roar, crash; import, signify', *swe:gcræft* 'music', *swe:gdynn* 'noise, crash', *swe:gendlic* 'vocal, vowel', *swe:ghle:oðor* 'sound, melody', *swe:ging* 'sound, clang, roar', *swe:glic* 'sonorous', *swe:tswe:ge* 'agreeable (of sound)', *swi:ðswe:ge* 'strong-sounding, heroic', *swo:gan* 'to sound, roar, howl, rustle, whistle, rattle', *ungeswe:ge* 'inharmonious, dissonant, discordant, out of tune, harsh', *ðurhswo: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. I have already remarked that zero-derivation is less relevant than affixation and compounding for the formation of strong verbs. When it comes to deverbal strong verbs, the generalization holds good, but the examples just discussed constitute evidence in favour of accepting zero-derivation of strong verbs from nouns and adjectives, however restricted its scope is. All in all, verbs like *ofstæ:nan* 'to stone' and *(ge)bræ:dan* 'to broaden' are exceptional, the vast majority of strong verbs constituting primitives of lexical derivation.

3. Morphological analysis

I begin the morphological analysis of strong verbs derived by affixation and compounding from other strong verbs by offering the relevant quantitative data. There are 1,595 strong verbs in Old English, of which 1,372 are derived. In percentual terms, 82.2% of strong verbs are derived from other strong verbs. Inflectional class is kept throughout derivation, in such a way that there are no significant differences across strong verb classes regarding the ratio basic: derived. The sixth class is the most type-productive, consisting of 15 basic verbs and 146 derived verbs, while the second class is the least type-productive, comprising 37 basic and 191 derived strong verbs.

By base, 317 different bases partake in the derivation of strong verbs from strong verbs, although 104 appear in one derivative only and another 46 show up in just two derivatives (which together represent practically one half of the bases involved in this word-formation pattern). The bases of derivation that enter 10 or more formations include the ones listed in (3):

(3)   16 derivatives   *cuman* 'come'
                              faran 'go'
                              standan 'stand'
        14 derivatives   *sittan* 'sit'
        13 derivatives   *fo:n* 'take'
                              gangan 'go'
                              se:on 'see'
        12 derivatives   *hweorfan* 'turn'
        11 derivatives   *beran* 'bear'
                              fle:on 'flee'
                              ge:otan 'get'
                              niman 'take'
                              sprecan 'speak'
                              te:on 'pull'
                              weaxan 'grow'
                              weorpan 'throw'
        10 derivatives   *bla:wan* 'blow'
                              cwe∂an 'say'
                              flo:wan 'flow'
                              healdan 'hold'
                              licgan 'lie'
                              sce:otan 'shoot'

As can be seen in (3), the bases of derivation of strong verbs from other strong verbs are mainly of the lexical class of induced movement (*te:on, healdan, weorpan*, etc.) and non-induced movement (*faran, cuman, flowan, hweorfan*, etc.). The only exceptions to this generalization are the verb of state *se:on*, the verb of activity *cwe∂an* and, probably, the verb of process *weaxan*.

41 bases represent stems in the sense of not being available as simplex forms. They are given in (4), along with the full derivative where they appear. Otherwise, strong verbs derive from the infinitive form of basic strong verbs.

(4)   *∂ingan* (*ge∂ingan* 'to thrive'), *∂recan* (*on∂recan* 'to fear'), *beornan* (*a:beornan* 'to take fire'), *cweorran* (*a:cweorran* 'to guzzle'), *dri:tan* (*gedri:tan* 'to defecate'), *dry:fan* (*frama:dry:fan* 'to drive away'), *fetan* (*gefetan* 'to fall'), *fre:o∂an* (*a:fre:o∂an* 'to froth'), *fri:nan* (*befri:nan* 'to question'), *fyldan* (*∂rifyldan* 'to triplicate'), *gifan* (*ongifan* 'to give back'), *gyldan* (*edgyldan* 'to remunerate'), *gylpan* (*a:gylpan* 'to exult in'), *hlyhhan* (*behlyhhan* 'to deride'), *irnan* (*ofirnan* 'to overtake'), *le:osan* (*bele:osan* 'to be deprived of'), *re:osan* (*gere:osan* 'to fall'), *reccan* (*oferreccan* 'to convince'), *ri:pan* (*geri:pan* 'to rob'), *scæcan* (*frama:scæcan* 'to shake off'), *sce:ofan* (*onbesce:ofan* 'to thrust out'), *sceacan* (*a:sceacan* 'to shake off'), *sceafan* (*a:sceafan* 'to shave off'), *sciran* (*a:sciran* 'to cut off'), *seolcan* (*a:seolcan* 'to become slack'), *si:on* (*u:tsi:on* 'to issue out'), *sla:pan* (*ætsla:pan* 'to sleep beside'), *sneorcan* (*gesneorcan* 'to dry up'), *sni:dan* (*ofa:snidan* 'to cut off'), *spornan* (*a:spornan* 'to cast down'), *sprintan* (*gesprintan* 'to utter'), *stæ:nan* (*ofstæ:nan* 'to stone'), *steppan* (*insteppan* 'to go in'), *sti:gan* (*gesti:gan* 'to reach'), *stondan* (*ofergestondan* 'to stand over'), *stre:dan* (*bestre:dan* 'to bestrew'), *su:can* (*a:su:can* 'to suck out'), *tingan* (*getingan* 'to press against'), *weran* (*a:∂weran* 'to stir up'), *wi:nan* (*a:∂wi:nan* 'to vanish'), *yrnan* (*oferyrnan* 'to run over')

By adjunct, type frequency is as rendered by (5), which includes affixation and compounding. Notice that the number of strong verb derivatives follows each bound or free form:

(5)   *ge-* (208), *a:-* (176), *be-* (149), *on-* (105), *for-* (90), *to:-* (89), *ofer-* (64), *of-* (55), *o∂-* (38), *in-* (31), *under-* (31), *∂urh-* (31), *wi∂-* (29), *for∂-* (28), *ymb-* (28), *u:p-* (27), *u:t-* (25), *fore-* (23), *æt-* (19), *geond-* (18), *mis-* (14), *eft-* (13), *fram-* (10), *efen-* (9), *ful-* (9), *a:ge:n-* (7), *un-* (6), *adu:n-* (5), *and-* (4), *ni∂er-* (4), *wi∂er-* (4), *æfter-* (3), *a:weg-* (3), *beforan-* (3), *betwux-* (3), *ed-* (3), *oft-* (3), *ma:n-* (2), *onweg-* (2), *dyrn-* (1), *hearm-* (1), *mæ:g-* (1), *nyd-* (1), *∂ri-* (1), *riht-* (1), *twi-* (1), *wyrg-* (1)

Disregarding the adjuncts which combine with less than 10 bases of derivation, the adjuncts that combine with 10 or more bases of derivation can be broken down into two groups: the first group consists of pure prefixes in the terminology of de la Cruz (1975), that is, those prefixes without a prepositional counterpart or with a prepositional counterpart that differs in function. This group is given in (6).

(6)   *ge-* (208)   *gebringan* 'to bring'
          a:- (176)   *a:beran* 'to bear'
          be- (149)   *bebi:tan* 'to bite'
          on- (105)   *oncunnan* 'to accuse'
          for- (90)   *forle:ogan* 'to lie'
          to- (89)   *to:stincan* 'to distinguish by smell'
          of- (55)   *of∂i:nan* 'to be too moist'

Apart from the pure prefixes, the other group of adjuncts that combine with strong verb bases to turn out derived strong verbs includes the aspectual *eft-,* the pejorative *mis-* and the locatives of place and direction that follow in (7). As in (5) and (6), the number of strong verb derivatives follows each adjunct:

(7)   *ofer-* (64)   *oferberan* 'to carry over'
        oð- (38)   *oðiernan* 'to run away'
        in- (31)   *inasendan* 'to send in'
        under- (31)   *underwri:tan* 'to write at the foot of'
        ðurh- (31)   *ðurhdri:fan* 'to drive through'
        wið- (29)   *wiðspurnan* 'to hit against'
        forð- (28)   *forðhre:osan* 'to rush forth'
        ymb- (28)   *ymblicgan* 'to sorround'
        up- (27)   *u:pa:ri:san* 'to rise up'
        ut- (25)   *u:ta:te:on* 'to draw out'
        fore- (23)   *foresittan* 'to preside over'
        æt- (19)   *ætsla:pan* 'to sleep beside'
        geond- (18)   *geondsa:wan* 'to scatter'
        eft- (13)   *efta:ri:san* 'to rise again'
        mis- (14)   *misfaran* 'to go wrong'
        fram- (10)   *frambringan* 'to take away'

In the remainder of this article, I refer to the group of the pure prefixes in (6) as Group A and to those in (7) as Group B:

(8)   Group A: *a:-, be-, for-, ge-, of-, on-, to:-*
        Group B: *æt-, eft-, forð-, fram-, mis-, ofer-, oð-, up-, ut-, under-, wið-, ymb-*

It must be borne in mind that all the lexical items in Group A constitute bound forms, whereas in Group B *mis-* represents the only bound form. According to Clark Hall (1966), *æt* and *ymbe* are adpositions; *eft, up* and *ut* qualify as adverbs; *forð, ofer* and *under* belong to the classes of the adverb and the adposition; and, finally, *oð* and *wið* can work as an adverb and a conjunction.[6]

4. Affix variation and lexicalisation

Several scholars, including de la Cruz (1975), Horgan (1980), Hiltunen (1983) and Kastovsky (1992), have remarked that the Germanic prefixes that are attached to Old English verbs display a degree of variation that is characteristic of diachronic change in progress. 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." Hiltunen (1983: 54) points out that "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." I resort to Bauer´s (1983) concept of lexicalisation as lack of analysability in affixation to refer to this process, which entails four types of loss of semantic

transparency: an affix can be deleted without change of meaning, as in *rihtan/gerihtan* 'set stright'; two affixes are interchangeable without change of meaning, as in *a:sæ:lan/gesæ:lan* 'to tie'; an affix and a free form are interchangeable, as in *ondrincan/indrincan* 'drink'; and three or more affixes are interchangeable without change of meaning, as in *a:spillan/gespillan/to:spillan* 'to destroy'.

As an illustration of the phenomenon in focus, consider the following derived strong verbs with the prefix *mis-*:

(10)   *misðe:on* 'to misthrive, degenerate', *misbe:odan* 'to ill-use', *misbregdan* 'to change', *miscweðan* 'to speak ill, curse; speak incorrectly', *misfaran* 'to go wrong, transgress; fare ill', *misfo:n* 'to make a mistake, be deceived', *mishealdan* 'to neglect', *mislimpan* 'to go wrong', *misræ:dan* 'to advise wrongly', *misspo:wan* 'to fare badly', *missprecan* 'to grumble, murmur', *misweaxan* 'to grow improperly', *misweorðan* 'to turn out amiss', *miswri:tan* 'to write incorrectly'

With the probable exception of *misbregdan* 'to change', the attachment of the prefix *mis-* to a strong verb constitutes a regular phenomenon that produces pejorative derivatives on a predictable basis. On the other hand, the strong verbs derived by means of the prefix *of-* form a rather heterogeneous group, in which, at least, the following derivational functions can be identified: telic (*ofa:sni:ðan* 'to cut off'), quantifier (*ofði:nan* 'to be too moist'), locative (*ofcuman* 'to spring from') and causative (*ofcalan* 'to grow or make cold').

(11)   *ofði:nan* 'to be too moist', *ofðringan* 'to throng', *ofa:ceorfan* 'to cut or prune off', *ofa:drincan* 'to drain; quench', *ofa:he:awan* 'to cut off', *ofa:niman* 'to take away', *ofa:sceacan* 'to shake off; excuse', *ofa:sciran* 'to cut off', *ofa:se:oðan* 'to purge, purify', *ofa:sle:an* 'to smite off', *ofa:sni:ðan* 'to cut off', *ofa:sti:gan* 'to descend', *ofa:te:on* 'to pull out, withdraw', *ofa:weorpan* 'to cast aside, throw off', *ofbe:atan* 'to beat to death, kill', *ofcalan* 'to grow or make cold', *ofcuman* 'to spring from, be derived from', *ofdræ:dan* 'to fear, be afraid, terrified', *ofdrincan* 'to intoxicate', *ofdu:nesti:gan* 'to descend'

More importantly, this functional diversification is associated with the zero derivational function, which obtains when the simplex and the complex word have the same meaning, as in *ðringan/ofðringan* 'to throng'. If, instead of approaching the question from the point of view of affixes, we do so from the perspective of a given base of derivation, such as *(ge)beran* 'to bear', several patterns of interchangeability arise, involving the Group A prefixes *a:, ge-, be-, on-* and *to:-*: *beran/a:beran/geberan* 'to bear', *inberan/ina:beran* 'to carry in' and *onberan/to:beran* 'to carry off'.

(12)   *(ge)beran* 'to bear', *a:beran* 'to bear', *beberan* 'to carry to', *forðberan* 'to bring forth', *forberan* 'to forbear', *foreberan* 'to prefer', *ina:beran* 'to carry in', *inberan* 'to carry in', *oðberan* 'to bear away', *oferberan* 'to carry over', *onberan* 'to carry off', *to:beran* 'to carry off', *underberan* 'to endure', *ymbberan* 'to surround'

If Group A as a whole is analysed with respect to interchangeability and the zero derivational function, it turns out, firstly, that all the affixes in this group can be replaced with zero:

(14) a. *a:bacan/bacan* 'to bake'
      b. *begylpan/gielpan* 'to boast'
      c. *getredan/tredan 'tread'*
      d. *forcwolstan/cwolstan* 'to swallow'
      e. *oflinnan/linnan* 'to cease'
      f. *onblo:tan/blo:tan* 'to sacrifice'
      g. *to:sceacan/scacan* 'to shake off'

A significant generalization can be made at this point of the discussion: zero replacement implies full replacement, or, in other words, if an affix can be suppressed without change of meaning, it can also be replaced by any other affix in the group:

(15) a. *a:-/be-*   *a:dri:fan/bedri:fan* 'to follow up'
          a:-/ge-   *a:le:ogan/bele:ogan* 'to lie'
          a:-/for-   *a:meltan/formeltan* 'to melt away'
          a:-/of-   *a:sni:ðan/ofsni:ðan* 'to cut off'
          a:-/on-   *a:ho:n/onho:n* 'to crucify'
          a:-/to:-   *a:cna:wan/to:cna:wan*'to recognise'
      b. *be-/ge-*   *bele:ogan/gele:ogan* 'to lie'
          be-/for-   *befle:on/forfle:on* 'to flee from'
          be-/of-   *behre:osan/ofhre:osan* 'to overwhelm'
          be-/on-   *beha:tan/onha:tan* 'to promise'
          be-/to-:   *becuman/to:cuman* 'to come'
      c. *for-/ge-*   *forsweltan/gesweltan* 'to die'
          for-/of-   *fortredan/oftredan* 'to tread down'
          for-/on-   *forgieldan/ongieldan* 'to pay for'
          for-/to:-   *forhe:awan/to:he:awan* 'to hew in pieces'
      d. *ge-/of-*   *gele:ogan/ofle:ogan* 'to lie'
          ge-/on-   *gebe:odan/onbe:odan* 'to command'
          ge-/to:-   *gehelpan*/to:helpan 'to help'
      e. *of-/on-*   *ofmunan/onmunan* 'to remember'
          of-to:-   *ofsni:ðan/to:sni:ðan* 'to cut off'
      f. *on-/to:-*   *onhli:dan/to:hli:dan* 'to open'

An important consequence of the generalization I have just made is that, except for the pure prefixes (Group A), replacement requires full expression, zero being precluded. There follow some illustrations with the free forms in Group B below:

(16) a. *æt-/a:-*   *æthebban/a:hebban* 'to take away'
      b. *ofer-/for-*   *oferniman/forniman* 'to take away'
      c. *oð-/be-*   *oðcwelan/becwelan* 'to die'
      d. *oð-/on-*   *oðhri:nan/onhri:nan* 'to touch'
      e. *geond-/ge-*   *geondsci:nan/gesci:nan* 'to shine upon'
      f. *ofer-/of-*   *ofertredan/oftredan* 'to tread down'
      g. *oð-/of-*   *oðswerian/ofswerian* 'to abjure'
      h. *u:p-/on-*   *u:phebban/onhebban* 'to lift up'
      i. *oð-/to-*   *oðgli:dan/*to:gli:dan 'to glide away

j.	*u:pa:-/u:ta:-*	*u:pa:brecan/u:ta:brecan* 'to break out'
k.	*wið-/wiðer*	*wiðstandan/wiðerstandan* to resist

Patterns of interchangeability often come in triplets, rather than in pairs. Examples in point are:

(17)	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'

These triplets include basically the affixes *a-* and *ge-*, but also *be-, for-, of-, on-* and *to:-*. Hiltunen (1983: 84) points out that "in terms of interchangeability, *a-* and *ge-* form a group of their own." For this author the little semantic content of *a-* is due to the fact that, in some contexts, this prefix represents a weakened form of the prefixes *on-* and *of-*. Hiltunen (1983: 84) also notes that "*be-, for-, on-* and *to-* are often used instead of ge- most probably because of their greater expressivity", but considers that "semantic fading is more a feature of *ge-* and *a-* than of the other items." I concur with Hiltunen (1983) on the question of the formal indifferentation of *a-, on-* and *of-*, but a word of caution is necessary regarding the higher degree of interchangeability of *a-* and *ge-* because these affixes display the highest type frequency in the group and interchangeability could simply be a function of the type frequency of *ge-* (207), *a:-* (175), *be-* (149), *on-* (101), *for-* (90), *to:-* (89) and *of-* (55). Moreover, the analysis of affix variation has shown consistent patterns of behaviour in Group A and Group B: whereas the free forms in Group B cannot perform the zero function, the bound forms in Group A can be replaced by zero without meaning change and, moreover, can be replaced by any other affix in the group. In other words, *a-* and *ge-* do not constitute an independent group of affixes. Rather, they display the same behaviour properties as the other affixes in Group A to a different degree, which results from their higher type frequency.

5. Recursivity

There are 127 recursive formations of strong verbs from other strong verbs. Recall that the total figures are 1,595 strong verbs in Old English, 1,372 of which are derived. In percentual terms, recursivity represents 9.2%. For a recursive formation to be identified, I have deemed it necessary that the two elements to the left are affixes or belong to the minor lexical classes adverb or adposition. This means that derived strong verbs like *geðicfyldan* 'to make dense', *geli:clæ:tan* 'to compare' *getwifealdan* 'to double' and *rihtgeha:tan* 'to swear' have not been considered. The list of recursive patterns in the formation of strong verbs includes the following ones (the figure between brackets corresponds to the number of occurrences of the pattern in question, but still represents type analysis):

(18)   *a:-be-* (1), *a:du:ne-a:-* (1), *a:ge:n-ge-* (1), *a:weg-ge-* (1), *an-be-* (2), *an-for-* (2), *beforan-ge-* (1), *du:ne-a-* (1), *efen-a-* (1), *efen-ge-* (2), *efne-for-* (1), *eft-a-* (4), *eft-be-* (1), *eft-ed-* (1), *eft-for-* (1), *eft-ge-* (1), *eft-on-* (1), *forð-a-* (1), *forð-be-* (1), *forð-ge-* (2), *fore-ge-* (3), *fram-a:-* (7), *fram-ge-* (1), *ge-a-* (1), *in-a-* (1), *in-be-* (5), *in-for-* (1), *in-ge-* (3), *niðer-a-* (2), *of-a-* (12), *of-du:ne-* (1), *ofer-a-* (1), *ofer-be-* (2), *ofer-ge-* (2), *on-a-* (7), *on-be-* (6), *on-ge-* (6), *onweg-a-* (2), *to:-a-* (1), *to:-be-* (4), *to:for-* (1), *to:-ge-* (2), *u:p-a-* (12), *u:p-ge-* (1), *u:t-a-* (12), *u:t-for-* (1), *under-ge-* (1)

There are 47 different patterns of recursive formations (type analysis), none of which involves double recursivity. Recursivity is always prefixal, in the sense of taking up the prefield of the word. Two elements to the left is the maximum degree of complexity allowed by strong verbs. The typical pattern is a free form of group B followed by a bound form of group A (closer to the base of derivation). The pure prefixes in group A are free to attach to members of group A or group B, but the bound forms, prepositions and adverbs in group B cannot attach to another member of the group, with the only exception of *eft-ed-*, which occurs only in *efedwi:tan* 'to reprove'. This is probably the case because the adjuncts in Group B convey a more specific meaning than those in Group A, which is in accordance with the data obtained from the analysis of affix variation.

The details affix by affix can be presented in the following way. *A:-* turns out in 16 recursive patterns, either as first or second element. When it comes first, it is followed by another pure prefix, as in *a:-be-*. Except in these instances, *a:-* is the second element of recursive patterns (closer to the base)*: a:du:ne-a:-, du:ne-a-, efen-a-, eft-a-, forð-a-, fram-a:-, ge-a-, in-a-, of-a-, ofer-a-, on-a-, onweg-a-, u:p-a-* and *u:t-a-*. The pure prefix *be-* turns out in 8 recursive patterns, always as second element: *a:-be-, an-be-, eft-be-, forð-be-, in-be-, ofer-be-, on-be* and *to:-be-*. The prefix *for-* turns out in 6 patterns of recursivity, always in the second position: *an-for-, efne-for-, eft-for-, in-for-, to:for-* and *u:t-for-*. The prefix *ge-* appears in 13 recursive patterns, in which it is the second element of the pattern, except when followed by the pure prefix *a:-*, i.e. *ge-a:- a:ge:n-ge-, a:weg-ge-, beforan-ge-, efen-ge-, eft-ge-, fore-ge-, in-ge-, ofer-ge-, on-ge-, to:-ge-, u:p-ge-* and *under-ge-*. The prefix *of* appears in 2 recursive patters, in the first position in both instances: it is followed by a pure prefix in the pattern *of-a-*, but not in *of-du:ne-*.The prefix *on-* shows up in 3 recursive patterns, always in the second position and followed by a pure prefix: *on-a-, on-be-* and *on-ge-*. Finally, the prefix *to-* is found in 4 recursive patterns, always in first position and followed by a pure prefix: *to:-a-, to:-be-, to:-for-* and *to:-ge-*.

If we approach the question from the point of view of word adjuncts, *a:gen-, eft-, fore-, forð-, fram-, in-, ofer-, on-, to:-, under-, u:p-* and *u:t-* can be prefixed to already prefixed forms. Typical instances are *fore-ge-sellan* 'to advance money' and *forð-a:-ci:gan* 'to call forth'. If the question is approached from the point of view of the bases of derivation, *a*-derived strong verbs combine with *eft-, fore-, forð-, fram-, in-, of-, ofer-, on-, to:-, u:p-*, and *ut-*. The most frequent patterns are *ut-a-, up-a-*, and *of-a:-*, in formations like *of-a-ceapian* 'buy off', *up-a-blawan* 'blow up' and *ut-a-windan* 'slip forwards'. *Be*-derived strong verbs combine with *a:gen-, eft-, forð-, in-, ofer-, on-, to:-* and *under-*. The most frequent combinations are *to-be-, on-be-* and *in-be-*, as is the case with *in-be-cweðan* 'inculcate', *on-be-stælan* 'convict of crime' and *to-be-limpan* 'belong'. Apart form *a-* and *be-*, the only prefix that, belonging in a derived word, combines with another prefix is *for-*. Three prefixes combine with *for*-prefixed verbal predicates: *in-, to:-,* and *ut-*. It is worth noticing, however,

that the basic predicate is the same in all three derivatives, *lættan* 'let': *in-for-lætan* 'let in', *to-for-lætan* 'leave to' and *ut-for-lætan* 'let out'.

From the description given above it follows that the pure prefixes tend to take up the second position in patterns of recursivity. When the pure prefixes appear in the first position, they are followed by another pure prefix. The only exceptions are *of-dune-* and *to:-foran-*.[7] It is worth remarking that the only pure prefixes that appear in the second position preceded by another pure prefix in the first position are *a-, be-, for-, ge-* and *on-*; while the only pure prefixes that occupy the first position followed by another pure prefix are *a:-* and *ge-*. In this respect, the number of recursive patterns by affix is not a function of the type frequency of the affix. Rather, the two pure prefixes that can be followed by another pure prefix are the two most frequent ones in terms of type, namely *a:-* and *ge:-*. Similarly, the group of prefixes that can show up in the second position of recursive patterns preceded by another prefix nearly coincides with the most type-frequent prefixes. The only exception that arises is *on-* in the formation *eftoncna:wan* 'to percieve again'. Considering the recursivity pattern with *on-* in the second position, there is a single pattern (type) and a single occurrence (token). Moreover, the prefix may be a variant of *a:-*. In point of fact, the pattern of recursivity *eft-a* presents four tokens, *efta:ri:san* 'to rise again', *efta:dri:fan* 'to reject', *efta:ly:san* 'to redeem', *efta:stregdan* 'to sprinkle'.

There is an additional argument for not admitting the prefix *on-* in second position in a recursive pattern. If *eft-on-* is considered a variant of *eft-a:-,* it is the case that the prefixes *on-, to-* and *of-* behave as closing affixes in the formation of strong verbs. I use the term *closing affix* after Aronoff and Fuhrhop (2002) in the sense of affixes that do not allow for further affixation. It must be noted that these affixes close the derivation independently of their meaning. For example, *on-* is closing prefix with telic meaning in *onfindan* 'to find out' and reversative meaning in *onwri:ðan* 'to unwrap'. However, the remarkable issue arises that *to:-* and *un-* are closing affixes in the derivation of strong verbs, but not in the formation of weak verbs. There is just one instance of further attachment to *to:-*, *geto:namian* 'to name besides', but up to nine of recursivity with *un-* in the formation of weak verbs, as can be seen in (20):

(20) *geunðwæ:rian* 'to disagree', *geuna:rian* 'to dishonour', *geunblissian* 'to make unhappy', *geunfæstnian* 'to unfasten', *geunhæ:lan* 'to weaken', *geunlustian* 'to loathe', *geunmihtan* 'to deprive of strength, *geunso:ðian* 'to falsify', *geunstillan* 'to disturb'

One final comment on (20) is that it is the prefix *ge-* that is attached in these weak verbs, *ge-* qualifying as the most type-frequent not only in the derivation of verbs but in Old English word-formation in general. A summary of recursivity as type is offered in (21):

(21)

Affix	Type frequency	Position	Recursivity patterns
ge-	208	I/II	13
a:-	176	I/II	16
be-	149	II	8
on-	105	I	4
for-	90	II	6
to:-	89	I	4
of-	55	I	2

The low figure of recursivity can be interpreted as a resistance of the derivationally basic class of strong verbs to admit repeated derivation. In this respect, the fact that recursive patterns involve prefixes exclusively (verbal suffixes are not a widespread class in Old English) constitutes an additional argument in favour of a certain degree of opposition of strong verbs to recursive derivation. Given that prefixation seldom changes the lexical class of the base of derivation, the motivation for recursive derivation is lower if prefixes only are available.

So far, the recursivity in the formation of strong verbs has been dealt with in terms of type. Turning to token analysis, the situation is that the patterns of recursivity that appear in ten or more derived strong verbs consist of an adposition or an adverb followed by a pure prefix, as can be seen in (22), where the token appears after the recursive pattern, between brackets:

(22)   *of-a-* (12)
        ofa:ceorfan 'to cut off', *ofa:drincan* 'to quench', *ofa:he:awan* 'to cut off', *ofa:niman* 'to take away', *ofa:sceacan* 'to shake off', *ofa:sciran* 'to cut off', *ofa:se:oðan* 'to purify', *ofa:sle:an* 'to smite off', *ofa:sni:dan* 'to cut off', *ofa:sti:gan* 'to descend', *ofa:te:on* 'to pull out', *ofa:weorpan* 'to throw off'
        u:p-a- (12)
        u:pa:bla:wan 'to blow up', *u:pa:brecan* 'to break out', *u:pa:bregdan* 'to lift up', *u:pa:hebban* 'to raise up', *u:pa:ho:n* 'to hang up', *u:pa:lu:can* 'to eradicate', *u:pa:ri:san* 'to rise up', *u:pa:springan* 'to spring up', *u:pa:sti:gan* 'to rise', *u:pa:te:on* 'to draw up', *u:pa:weallan* 'to well up', *u:pa:wegan* 'to lift up'
        u:t-a- (12)
        u:ta:berstan 'burst out', *u:ta:brecan* 'break out', *u:ta:delfan* 'dig out', *u:ta:dri:fan* 'drive out', *u:ta:faran* 'to go out', *u:ta:flo:wan* 'to flow out', *u:ta:sce:otan* 'to pierce out', *u:ta:sle:an* 'to strike outwards', *u:ta:sli:dan* 'to slip forwards', *u:ta:spi:wan* 'to spew forth', *u:ta:te:on* 'to draw out', *u:ta:windan* 'to fall out'

As (22) and the examples above show, recursive formations of strong verbs involve free or bound forms that take up the prefield of the word and, in general, perform the functions of transitive/telic and directional. The tendency is for each adjunct (free form in compounds and bound forms in affixal derivatives) to occur only once, in such a way that the transitive/telic element is a bound form and aligns closer to the base of derivation, whereas the directional qualifies as a free form and precedes the transitive/telic affix. Aspectuals behave like directionals in being attached after transitive/telic elements, as, for instance in *a:gen-be-wendan* 'to return' and *eft-ed-witan* 'to reprove'. The negative affix *un-* does not combine with either transitive/telic or with directional elements. The only exceptions to the tendency of affixes to appear only once are *a-be-teon* 'to accuse', *ge-æ:-wierdlian* 'to injure', *on-ge-seon* 'to see', and *to:-be-fealdan* 'to fold together'. As for free forms, there turn up a few exceptional formations comprising two directionals: *of-dune-settan* 'to set down', *on-to-blawan* 'to blow on' and *ut-of-gan* 'to go out'.

It follows from the characterization I have just offered that the prototypical recursive formation of an Old English strong verb is best illustrated by instances such as *fram-a:-dri:fan* 'to drive away' and *in-for-lætan* 'to let in'. From these directional meanings, non-literal meanings evolve, such as *ofer-be-be:odan* 'to rule' and *under-be-ðe:odan* 'to subject'.

The directional meaning is also the source of the telic meaning, as can be seen in instances like *u:p-a:-brecan* 'to break out' and *u:t-for-læ:tan* 'to cast out'.

Another path of interpretation can be found in semantic compatibility (Lieber 2004). In this respect, a significant part of the patterns analysed in this study convey transitive/telic meaning and the affixes in Group A as well as the free forms in Group B frequently perform this derivational function. In other words, if the affix in Group A has not lost its meaning or, at least, such a meaning has not been faded, affixes in Group A are semantically redundant in the expression of the transitive/telic derivational function with respect to some directionals in Group B whose secondary derivational function is also transitive/telic.

In interpreting these data, I concur with de la Cruz (1975: 76) "that many of the values which may be regarded as locative do in fact approach those of grammatical oppositions." For Brinton and Closs-Traugott (2005: 127) "the rise of prepositional verbs is concurrent with the loss of verbal prefixes, which over the OE period had weakened, overextended, and lost information content." Brinton and Closs Traugott (2005: 124) take a step further and state that particles like *of-*, *u:p-* and *u:t-* "come to be grammaticalized as markers of verbal aspect." The evidence provided demonstrates that recursivity and grammaticalisation are overlapping processes, in such a way that the former is functional with respect to the latter. If the reasoning is correct, the grammaticalised particle reinforces the meaning of the pure prefix. Generally speaking, before the particles were prefixed to perform the telic function, the pure prefixes expressed telicity, thus instances like:

(22)   (de la Cruz 1975: 75)
        asingan 'sing to an end'/*singan* 'sing'
        beswælan 'scorch'/*swælan* 'burn'
        ofsceotan 'shoot down'/*sceotan* 'shoot'
        forgrindan 'grind to pieces'/*grindan* 'grind'

As Lieber (2004: 166) puts it, "repeating the same semantic content [by means of further affixation-JMA] is possible as long as the result is useful and interpretable". There is no restriction on redundancy in these formations because the meaning of the pure prefix is blurred and the particle manages to fill in the semantic gap. At the same time, recursive formations reinforce the grammaticalised character of the particles: they take on the grammatical function previously served by the prefix.

A final phenomenon relevant for this discussion is found in pairs like:

(23)   *forð**a:**te:on/forðte:on* 'to bring forth'
        *forð**be**cuman/forðcuman* 'to come forth'
        *ofer**ge**sa:wan/ofersa:wan* 'to sow'
        *under**be**ginnan/underginnan* 'to undertake'
        *u:p**a:**te:on/u:pte:on* 'to draw up'
        *u:t**a:**berstan/u:tberstan* 'to burst out'

Two possible interpretations can be advanced of these pairs of affix vs. zero in the context of a preceding particle: firstly, the loss of a non-functional pure prefix and, secondly, the attachment of a particle in order to reinforce the meaning of the original affix. Both interpretations point in the direction of the decay of the Old English prefix system, and if, accepted simultaneously, an intermediate stage can be identified in the path of

grammaticalisation proposed by Brinton and Closs Traugott (2005): prefix>prefix/prefix-particle>particle.

6. Concluding remarks

The research reported by this article has identified 47 different patterns of recursivity in the formation of strong verbs (type analysis). None of these patterns involves double recursivity or suffixation. In token analysis, 127 recursive formations have been found of strong verbs from other strong verbs (out of 1,595 strong verbs in Old English, 1,372 of which are derived). In percentual terms, recursivity represents the relatively low figure of 9.2%, which is in accordance with the status of strong verbs as primitives of word-formation.

This article has also shown that the pure affixes represent a coherent group in the derivation of strong verbs from strong verbs because they display the same properties of distribution and behaviour in word-formation. On the theoretical side, the analysis of recursivity that has been carried out has allowed to relate formal properties of affix combination to functional questions such as semantic compatibility and grammaticalisation.

Notes:

[1] This research has been funded through the project FFI2008-04448/FILO.

[2] On the concept of zero-derivation vs. conversion, see Bauer and Valera eds. (2005). See also Štekauer (1996) and Balteiro (2007a, 2007b).

[3] I avoid the terminological questions here and refer the reader to Brinton and Closs Traugott (2005) and Hohenhaus (2005).

[4] The colon represents vowel quantity.

[5] See García García (2005) on verbal causatives in Germanic.

[6] See Guarddon Anelo on the formation and function of Old English adpositions.

[7] Dieter Kastovsky (personal communication) points out to me that these recursive formations could be the result of literal translations from Latin into Old English. For example, there are just two occurrences of *toforansettan* 'set before' in *The Dictionary of Old English Corpus* (http://tapor.library.utoronto.ca/doecorpus), both corresponding to Old English glosses: [**0305 (7.44)**] *Alibi dicitur quotiens orantes non cito exaudimur nostra nobis facta in oculis proponamus* Elles hwar ys gesæd swa oft gebiddende na ra∂e beo∂ gehyrede ure us dæda on eagum we **toforansettan**; and [**0445 (57.1392)**] *Et si fratrem inuenerit somno oppressum, anteponat illi laternam et reuertatur* & gif he bro∂or fint mid slæpe ofsetne **toforansette** him ∂æt leohtfæt & cyrre ongean.

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Appendix 1: Old English strong verbs by inflectional affix or adjunct of compounding (from www.nerthusproject.com).

The figures between brackets correspond to type frequency and include the numbered predicates of the lexical database of Old English *Nerthus*, i.e. *a:se:on 1/a:se:on 2*, although one predicate is listed below for both numbered predicates, i.e. *a:se:on*.

a:- **(175):** *a:bacan, a:bannan, a:be:atan, a:be:odan, a:belgan, a:beornan, a:beran, a:berstan, a:bete:on, a:bi:dan, a:bi:tan, a:biddan, a:bla:wan, a:bli:can, a:blinnan, a:bre:oðan, a:bre:otan, a:brecan, a:bregdan, a:bru:can, a:bu:gan, a:calan, a:ce:osan, a:ceorfan, a:cle:ofan, a:cna:wan, a:crimman, a:cuman, a:cweðan, a:cwelan, a:cweorran, a:cwi:nan, a:delfan, a:dragan, a:dre:ogan, a:dre:opan, a:dre:osan, a:dri:fan, a:drincan, a:dwi:nan, a:etan, a:faran, a:feallan, a:feohtan, a:findan, a:fle:an, a:fle:ogan, a:fle:on, a:fle:otan, a:flo:wan, a:fo:n, a:fre:oðan, a:galan, a:gangan, a:ge:otan, a:giefan, a:gieldan, a:gli:dan, a:gni:dan, a:grafan, a:gri:san, a:gro:wan, a:gylpan, a:ha:tan, a:he:awan, a:healdan, a:hebban, a:helpan, a:hladan, a:hle:apan, a:hliehhan, a:hlo:wan, a:hne:apan, a:hni:gan, a:ho:n, a:hri:nan, a:hweorfan, a:iernan, a:læ:tan, a:le:odan, a:le:ogan, a:le:on, a:lesan, a:licgan, a:limpan, a:lu:can, a:lu:tan, a:ma:wan, a:melcan, a:meltan, a:metan, a:niman, a:ræ:dan, a:ri:dan, a:ri:san, a:rinnan, a:sa:wan, a:sce:adan, a:sce:otan, a:sceacan, a:sceafan, a:sci:nan, a:scieppan, a:sciran, a:screpan, a:scri:fan, a:scu:fan, a:se:oðan, a:se:on, a:seolcan, a:si:can, a:si:gan, a:sincan, a:singan, a:sittan, a:slæ:pan, a:sle:an, a:sli:dan, a:sli:tan, a:slu:pan, a:smu:gan, a:sni:ðan, a:spanan, a:spannan, a:spi:wan, a:spinnan, a:spornan, a:sprecan, a:springan, a:spru:tan, a:stæppan, a:standan, a:steorfan, a:sti:gan, a:stingan, a:stregdan, a:stri:can, a:su:can, a:swa:pan, a:swellan, a:sweltan, a:sweorcan, a:sweorfan, a:swerian, a:swi:can, a:swi:fan, a:swindan, a:swingan, a:swo:gan, a:te:on, a:teran, a:tredan, a:wacan, a:wascan, a:weallan, a:weaxan, a:wefan, a:wegan, a:weorðan, a:weorpan, a:windan, a:winnan, a:wre:on, a:wrecan, a:wri:ðan, a:wri:tan, a:wringan, a:ðerscan, a:ðindan, a:ðra:wan, a:ðre:otan, a:ðringan, a:ðrintan*; *a:ð-* **(5):** *a:ðswerian, a:ðwe:an, a:ðweran, a:ðwi:nan, a:ðwi:tan*; *æfter-* **(3):** *æftercweðan, æfterro:wan, æftersprecan*; *a:ge:n-* **(3):** *a:ge:ncuman, a:ge:ngehweorfan, a:ge:niernan*; *adu:n-* **(5):** *a:du:nea:sti:gan, adu:nesti:gan, adu:nfeallan*; *æt-* **(19):** *ætcli:ðan, ætfe:olan, ætfeohtan, ætflo:wan, ætfo:n, ætgangan, ætgifan, æthebban, æthweorfan, ætlicgan, ætlimpan, ætniman, ætsittan, ætsla:pan, ætsli:dan, ætspringan, ætstæppan, ætstandan, ætwegan*; *a:n-* **(5):** *a:nforlæ:tan, anbestingan, anbeweorpan, ancuman, anforlæ:tan*; *and-* **(4):** *andcweðan, andhweorfan, andspurnan, andswerian*; *a:weg-* **(3):** *a:wegcuman, a:wegfle:on, a:weggewi:tan*; *be-* **(149):** *bebe:odan, bebeorgan, beberan, bebi:tan, bebindan, bebla:wan, bebrecan, bebregdan, bebringan, bebru:can, bebu:gan, bece:owan, beceorfan, beclingan, becna:wan, becnedan, becre:opan, becuman, becweðan, becwelan, bedelfan, bedo:n, bedragan, bedre:osan, bedri:fan, bedrincan, bedu:fan, befaran, befe:olan, befealdan, befeallan, befeohtan, befle:an, befle:ogan, befle:on, beflo:wan, befo:n, befri:nan, begalan, begangan, bege:otan, begi:nan, begiellan, begietan, beginnan, begli:dan, begnagan, begni:dan, begrafan, begre:osan, begri:pan, begrindan, begro:wan, begylpan, beha:tan, behe:awan, behealdan, behelan, behle:apan, behle:otan, behli:dan, behli:gan, behlyhhan, beho:n, behre:osan, behro:pan, behweorfan, beiernan, bela:can, bele:an, bele:ogan, bele:osan, beli:ðan, beli:fan, belicgan, belu:can, bemetan, bemi:ðan, bemurnan, bene:otan, beniman, beræ:dan, bere:ocan, bere:ofan, bere:otan, beri:dan, beri:san, berinnan, bero:wan, besa:wan, besce:adan, besce:otan, besceafan, besci:nan, besci:tan, bescieran, bescrepan, bescu:fan, bese:oðan, bese:on, besi:gan, besincan, besingan, besittan, beslæ:pan, besle:an,*

besli:tan, besmi:tan, bespanan, besprecan, bestæppan, bestandan, bestelan, bestingan, bestre:dan, bestri:can, bestri:dan, bestru:dan, beðerscan, beðra:wan, beðringan, beðurfan, beðwe:an, besu:pan, beswa:pan, beswelgan, beswi:can, beswincan, beswingan, bete:on, beteldan, betredan, bewa:wan, bewadan, bewe:pan, bewealcan, beweallan, beweaxan, bewefan, bewegan, beweorpan, bewindan, bewitan, bewli:tan, bewre:on, bewrecan, bewri:ðan, bewri:tan; **beforan-** **(3):** *beforancuman, beforancweðan, beforangecuman;* **betwux-** **(3):** *betwe:ohceorfan, betwuxcuman, betwuxlicgan;* **du:ne-** **(2):** *du:nea:sti:gan, du:nesti:gan;* **dyrn-** **(1):** *dyrnlicgan;* **ed-** **(3):** *edginnan, edgyldan, edwi:tan;* **efen-** **(9):** *efena:metan, efencuman, efenetan, efengefe:on, efengemetan, efenmetan, efenweaxan, efenwri:tan, efneforcuman;* **eft-** **(13):** *efta:dri:fan, efta:ri:san, efta:stregdan, eftbecweðan, eftcuman, eftdragan, eftedwi:tan, eftflo:wan, eftfordri:fan, eftgemetan, efthweorfan, eftoncna:wan, eftsittan;* **for-** **(90):** *forbe:odan, forbelgan, forbeornan, forberan 1, forberstan, forbi:tan, forbindan, forbla:wan, forbre:dan, forbrecan, forbu:gan, force:owan, forceorfan, forcinnan, forclingan, forcuman, forcweðan, forcwolstan, fordelfan, fordri:fan, fordrincan, fordwi:nan, forfaran, forfeallan, forfle:on, forfo:n, forgangan, forgiefan, forgieldan, forgielpan, forgietan, forgnagan, forgni:dan, forgri:pan, forgrindan, forgrindan, forgro:wan, forha:tan, forhe:awan, forhealdan, forhelan, forhweorfan, forla:can, forlæ:tan, forle:an, forle:ogan, forle:osan, forli:ðan, forlicgan, formeltan, forniman, forræ:dan, forri:dan, forsacan, forsce:adan, forsce:otan, forsceorfan, forscieppan, forscri:fan, forscrincan, forscu:fan, forse:oðan, forse:on, forsittan, forsle:an, forsli:tan, forspanan, forsprecan, forstandan, forstelan, forstregdan, forsu:can, forswa:pan, forswelan, forswelgan, forsweltan, forsweorcan, forsweorfan, forswerian, forte:on, fortredan, forweallan, forweaxan, forwegan, forweorðan, forweorpan, forwre:on, forwrecan, forwri:ðan, forwri:tan;* **fore-** **(23):** *foreðe:on, foreberan, forebræ:dan, forece:osan, forecweðan, forefle:on, forefo:n, foregangan, foregebiddan, foregece:osan, foregeha:tan, foregielpan, foreiernan, foresacan, forese:on, foresittan, foresprecan, forestæppan, forestandan, foresti:gan, foreswerian, foreweorðan, forewitan;* **forð-** **(28):** *forððe:on, forða:te:on, forðbecuman, forðberan, forðbese:on, forðbla:wan, forðcuman, forðerscan, forðfaran, forðflo:wan, forðgangan, forðge:otan, forðgefaran, forðgewi:tan, forðhealdan, forðhebban, forðhni:gan, forðhre:osan, forðindan, forðlæ:tan, forðlu:tan, forðringan, forðsacan, forðstæppan, forðte:on, forðweaxan, forðwegan, forðyrnan;* **fram-** **(10):** *frama:dri:fan, frama:dry:fan, frama:scæcan, frama:scu:fan, frama:te:on, frama:teran, frama:weorpan, frambringan, framcuman, framgewi:tan;* **ful-** **(9):** *fulbrecan, fulfaran, fulfealdan, fullberstan, fullcuman, fullfle:on, fullgro:wan, fullsle:an, fullweaxan;* **ge-** **(207):** *(ge)ðe:on, (ge)ðerscan, (ge)ðicgan, (ge)ðra:wan, (ge)ðringan, (ge)ðwe:an, (ge)ðweran, (ge)a:ri:san, (ge)bannan, (ge)be:atan, (ge)be:odan, (ge)belgan, (ge)belimpan, (ge)beran, (ge)berstan, (ge)bi:dan, (ge)bi:tan, (ge)bindan, (ge)bla:wan, (ge)blandan, (ge)blo:wan, (ge)bræ:dan, (ge)bre:owan, (ge)brecan, (ge)bringan, (ge)bu:an, (ge)bu:gan, (ge)ce:osan, (ge)ce:owan, (ge)ceorfan, (ge)cna:wan, (ge)cra:wan, (ge)cre:opan, (ge)crimman, (ge)cringan, (ge)cuman, (ge)cweðan, (ge)deorfan, (ge)dragan, (ge)dre:ogan, (ge)dre:opan, (ge)dre:osan, (ge)drepan, (ge)dri:fan, (ge)drincan, (ge)du:fan, (ge)etan, (ge)faran, (ge)fe:olan, (ge)fe:on, (ge)fealdan, (ge)feallan, (ge)feohtan, (ge)findan, (ge)fle:ogan, (ge)fle:on, (ge)fli:tan, (ge)fo:n, (ge)fre:osan, (ge)frignan, (ge)galan, (ge)ge:otan, (ge)gieldan, (ge)gri:pan, (ge)grindan, (ge)gro:wan, (ge)ha:tan, (ge)he:awan, (ge)healdan, (ge)hebban, (ge)helan, (ge)helpan, (ge)hladan, (ge)hle:apan, (ge)hle:otan, (ge)hliehhan, (ge)hre:osan, (ge)hre:owan, (ge)hri:nan, (ge)hweorfan, (ge)iernan, (ge)læ:tan, (ge)le:ogan, (ge)le:on, (ge)li:ðan, (ge)licgan, (ge)limpan, (ge)lu:can, (ge)lu:tan, (ge)melcan, (ge)meltan, (ge)mi:gan, (ge)munan, (ge)nesan, (ge)ni:pan, (ge)niman, (ge)ræ:dan, (ge)recan,*

(ge)ri:san, (ge)ri:san, (ge)rinnan, (ge)ro:wan, (ge)sa:wan, (ge)scafan, (ge)sce:otan, (ge)sceð∂an, (ge)sceorpan, (ge)scieppan, (ge)scieran, (ge)scri:fan, (ge)scrincan, (ge)se:can, (ge)se:oðan, (ge)se:on, (ge)si:gan, (ge)sincan, (ge)singan, (ge)sittan, (ge)slæ:pan, (ge)sli:tan, (ge)sni:ðan, (ge)spanan, (ge)spannan, (ge)spinnan, (ge)spo:wan, (ge)sprecan, (ge)springan, (ge)spurnan, (ge)stæppan, (ge)standan, (ge)stelan, (ge)sti:gan, (ge)stri:can, (ge)stru:dan, (ge)su:pan, (ge)swa:pan, (ge)swelgan, (ge)swellan, (ge)sweltan, (ge)sweorcan, (ge)sweorfan, (ge)swi:can, (ge)swimman, (ge)swincan, (ge)te:on, (ge)teldan, (ge)teran, (ge)tredan, (ge)twifealdan, (ge)unnan, (ge)wadan, (ge)we:pan, (ge)wealcan, (ge)wealdan, (ge)weallan, (ge)weaxan, (ge)wefan, (ge)weorðan, (ge)weorpan, (ge)wi:can, (ge)wi:tan, (ge)windan, (ge)witan, (ge)wre:on, (ge)wri:ðan, (ge)wri:tan, geðicfyldan, geðingan, gebiddan, gebla:wan, gebregdan, gebringan, gecna:wan, gecuman, gedri:tan, gedu:fan, geetan, gefaran, gefealdan, gefeohtan, gefetan, geflo:wan, gefne:san, gefricgan, gegangan, geiernan, geli:clæ:tan, gelu:tan, geniman, gere:osan, geri:dan, geri:nan, geri:pan, gerinnan, gesceorfan, gesci:nan, gese:on, gesittan, gesle:an, gesneorcan, gesprecan, gesprintan, gestincan, getingan, gewegan, gewinnan, gewri:ðan; ***ge:an-*** **(2):** *ge:anhweorfan, ge:ansprecan;* ***geond-*** **(18):** *geondbla:wan, geondbræ:dan, geondfaran, geondfe:olan, geondflo:wan, geondgangan, geondge:otan, geondhweorfan, geondla:can, geondsa:wan, geondsci:nan, geondscri:ðan, geondse:on, geondspringan, geondspru:tan, geondwadan, geondwli:tan, geondyrnan;* ***hearm-*** **(1):** *hearmcweðan;* ***in-*** **(31):** *ina:beran, inbecweðan, inbelu:can, inberan, inbesle:an, inbestingan, inbewindan, inbla:wan, inbre:dan, inbrecan, incuman, indri:fan, indrincan, infaran, infeallan, infindan, infle:on, inforlæ:tan, ingangan, inge:otan, ingebringan, ingedrincan, ingefeallan, inlæ:tan, inscu:fan, instandan, insteppan, insti:gan, inswo:gan, inwegan, inweorpan;* ***ma:n-*** **(2):** *ma:nswerian, mansle:an;* ***mæ:g-*** **(1):** *mæ:ggieldan;* ***mis-*** **(14):** *misðe:on, misbe:odan, misbregdan, miscweðan, misfaran, misfo:n, mishealdan, mislimpan, misræ:dan, misspo:wan, missprecan, misweaxan, misweorðan, miswri:tan;* ***niðer-*** **(4):** *niðera:scu:fan, niðera:sti:gan, niðerlæ:tan, niðersti:gan;* ***nyd-*** **(1):** *ny:dniman;* ***oð-*** **(33):** *oððicgan, oððringan, oðberan, oðberstan, oðbre:dan, oðcli:fan, oðcwelan, oðfaran, oðfeallan, oðfle:ogan, oðfle:on, oðfli:tan, oðgli:dan, oðgri:pan, oðhealdan, oðhebban, oðhle:apan, oðhri:nan, oðiernan, oðri:dan, oðrinnan, oðro:wan, oðsacan, oðscacan, oðsce:otan, oðscu:fan, oðspurnan, oðstandan, oðswerian, oðswimman, oðte:on, oðwi:tan, oðwindan;* ***of-*** **(55):** *ofði:nan, ofðringan, ofa:ceorfan, ofa:drincan, ofa:he:awan, ofa:niman, ofa:sceacan, ofa:sciran, ofa:se:oðan, ofa:sle:an, ofa:sni:dan, ofa:sti:gan, ofa:te:on, ofa:weorpan, ofbe:atan, ofcalan, ofcuman, ofdræ:dan, ofdrincan, ofdu:nesti:gan, offaran, offeallan, offle:ogan, ofge:otan, ofgiefan, ofhealdan, ofhni:tan, ofhre:osan, ofhre:owan, ofirnan, oflæ:tan, ofle:ogan, oflicgan, oflinnan, ofmunan, ofniman, ofri:dan, ofsacan, ofscacan, ofsce:otan, ofse:on, ofsittan, ofsle:an, ofsli:tan, ofsni:ðan, ofstæ:nan, ofstæppan, ofstandan, ofsti:gan, ofstingan, ofswelgan, ofswerian, ofswingan, ofunnan, ofweorpan;* ***ofer-*** **(64):** *oferðe:on, ofera:hebban, oferbebe:odan, oferbecuman, oferberan, oferbi:dan, oferbrecan, oferbregdan, oferclimban, ofercuman, oferdri:fan, oferdrincan, oferfaran, oferfeallan, oferfeohtan, oferfle:on, oferfli:tan, oferflo:wan, oferfo:n, ofergangan, oferge:otan, ofergesa:wan, ofergestondan, ofergietan, ofergli:dan, ofergro:wan, oferhealdan, oferhebban, oferhle:apan, oferhli:fan, oferhre:osan, oferli:ðan, ofermagan, oferniman, oferræ:dan, oferreccan, oferri:dan, oferro:wan, ofersa:wan, ofersce:adan, ofersci:nan, oferse:on, ofersittan, ofersle:an, ofersmi:tan, ofersprecan, oferstæppan, oferstandan, ofersti:gan, oferswimman, oferswingan, oferswo:gan, oferte:on, oferteldan, ofertredan, oferwadan, oferwealdan, oferweaxan, oferweorpan, oferwi:gan, oferwinnan, oferwre:on, oferwrecan, oferyrnan;* ***oft-*** **(3):** *oftacan, ofte:on, oftredan;* ***on-*** **(101):** *onðe:on,*

onðicgan, onðrecan, onðringan, onðwe:an, ona:ge:otan, ona:hebban, ona:ho:n, ona:ri:san, ona:sa:wan, ona:sli:dan, ona:winnan, onbe:odan, onbebla:wan, onbebringan, onbecuman, onbefeallan, onbeornan, onberan, onbesce:ofan, onbesmi:tan, onbi:dan, onbi:tan, onbindan, onbla:wan, onblandan, onblo:tan, onbregdan, onbu:gan, oncna:wan, oncuman, oncunnan, oncweðan, ondrǣ:dan, ondrincan, onfealdan, onfeohtan, onfindan, onfo:n, ongalan, ongangan, onge:otan, ongefealdan, ongehre:osan, ongeniman, ongese:on, ongesle:an, ongespanan, ongieldan, ongietan, ongifan, onginnan, onha:tan, onhealdan, onhebban, onhli:dan, onhni:gan, onho:n, onhre:odan, onhre:osan, onhri:nan, onhwelan, onhweorfan, oniernan, onlǣ:tan, onle:on, onlu:tan, onmeltan, onmunan, onniman, onri:dan, onsa:wan, onsacan, onsce:otan, onsceacan, onse:on, onsi:can, onsi:gan, onsittan, onsittan, onslǣ:pan, onsli:dan, onslu:pan, onsni:ðan, onspringan, onspurnan, onstæppan, onstingan, onstregdan, onswa:pan, onswi:fan, onte:on, onwacan, onwadan, onwealcan, onweorpan, onwi:can, onwinnan, onwri:ðan; **onge:an-** (2): *onge:anfealdan*, *onge:anstandan*; **onweg-** (2): *onwega:dri:fan, onwega:scu:fan*; **ðri-** (1): *ðrifyldan*; **riht-** (1): *rihtgeha:tan*; **to:-** (89): *to:ðerscan, to:ðindan, to:ðringan, to:ðwi:nan, to:a:te:on, to:be:atan, to:befealdan, to:beflo:wan, to:begietan, to:belimpan, to:beran, to:berstan, to:bla:wan, to:brecan, to:bregdan, to:bringan, to:ce:owan, to:ceorfan, to:ci:nan, to:cle:ofan, to:cna:wan, to:cuman, to:cweðan, to:dre:osan, to:dri:fan, to:faran, to:fealdan, to:feallan, to:fle:ogan, to:fle:on, to:fle:otan, to:flo:wan, to:fo:n, to:forlǣ:tan, to:gangan, to:ge:otan, to:gelan, to:gesce:adan, to:gete:on, to:gi:nan, to:gli:dan, to:he:awan, to:helpan, to:hladan, to:hle:otan, to:hli:dan, to:hre:osan, to:hweorfan, to:iernan, to:lǣ:tan, to:li:fan, to:licgan, to:lu:can, to:lu:tan, to:metan, to:niman, to:sa:wan, to:sce:adan, to:sce:otan, to:sceacan, to:scri:ðan, to:scu:fan, to:se:oðan, to:si:gan, to:sittan, to:sle:an, to:sli:fan, to:sli:tan, to:slu:pan, to:sni:ðan, to:springan, to:standan, to:stincan, to:stingan, to:stregdan, to:swa:pan, to:swellan, to:sweorcan, to:swi:fan, to:te:on, to:teran, to:tredan, to:weaxan, to:wegan, to:weorpan, to:wi:tan, to:wrecan, to:wri:ðan, to:wri:tan*; **twi-** (1): *twisprecan*; **u:p-** (27): *u:pa:bla:wan, u:pa:brecan, u:pa:bregdan, u:pa:hebban, u:pa:ho:n, u:pa:lu:can, u:pa:ri:san, u:pa:springan, u:pa:sti:gan, u:pa:te:on, u:pa:weallan, u:pa:wegan, u:pbre:dan, u:pcuman, u:pfle:ogan, u:pfle:on, u:pge:otan, u:pgebre:dan, u:phebban, u:phladan, u:pniman, u:psci:nan, u:psittan, u:psti:gan, u:pte:on, u:pweallan, u:pyrnan*; **u:t-** (25): *u:ta:berstan, u:ta:brecan, u:ta:delfan, u:ta:dri:fan, u:ta:faran, u:ta:flo:wan, u:ta:sce:otan, u:ta:sle:an, u:ta:sli:dan, u:ta:spi:wan, u:ta:te:on, u:ta:windan, u:tberstan, u:tdragan, u:tdri:fan, u:tfaran, u:tfe:olan, u:tflo:wan, u:tforlǣ:tan, u:tgangan, u:tri:dan, u:tsce:otan, u:tscu:fan, u:tsi:on, u:tweallan*; **un-** (6): *unbindan, unfealdan, unlu:can, unspannan, unwindan, unwre:on*; **under-** (31): *underbeginnan, underberan, underbrǣ:dan, underbu:gan, undercre:opan, undercuman, underdelfan, underetan, underfealdan, underflo:wan, underfo:n, undergangan, undergestandan, undergietan, underginnan, undergri:pan, underhebban, underhni:gan, underiernan, underlicgan, underlu:tan, underniman, undersce:otan, undersingan, undersittan, undersmu:gan, understandan, understingan, underweaxan, underweorpan, underwri:tan*; **ðurh-** (31): *ðurhbla:wan, ðurhbrecan, ðurhbregdan, ðurhbru:can, ðurhcre:opan, ðurhdelfan, ðurhdre:ogan, ðurhdri:fan, ðurhdu:fan, ðurhetan, ðurhfaran, ðurhfle:on, ðurhfo:n, ðurhgangan, ðurhge:otan, ðurhiernan, ðurhrǣ:dan, ðurhsce:otan, ðurhsci:nan, ðurhscri:ðan, ðurhse:on, ðurhsle:an, ðurhsmu:gan, ðurhstandan, ðurhstingan, ðurhswimman, ðurhswo:gan, ðurhte:on, ðurhwadan, ðurhwli:tan, ðurhwrecan*; **wið-** (29): *wiðbla:wan, wiðbregdan, wiðce:osan, wiðcweðan, wiðdri:fan, wiðfaran, wiðfe:olan, wiðfeohtan, wiðfo:n, wiðgangan, wiðgri:pan, wiðlicgan, wiðmetan, wiðre:otan, wiðsacan, wiðscu:fan, wiðse:on, wiðsle:an, wiðsprecan,*

wiðspurnan, wiðstæppan, wiðstandan, wiðte:on, wiðweorpan, wiðwinnan; **wiðer- (4):** *wiðercweðan, wiðermetan, wiðerstandan, wiðerwinnan*; **wyrg- (1):** *wyrgcweðan*; **ymb- (28):** *ymbðringan, ymbberan, ymbbindan, ymbceorfan, ymbfaran, ymbfo:n, ymbgangan, ymbhealdan, ymbho:n, ymbhweorfan, ymbiernan, ymbli:ðan, ymblicgan, ymbsci:nan, ymbscri:ðan, ymbse:on, ymbsittan, ymbsni:ðan, ymbspannan, ymbsprecan, ymbstandan, ymbstri:can, ymbswa:pan, ymbswi:fan, ymbweaxan, ymbweorpan, ymbwindan, ymbwri:tan.*

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