

SELF AS A NON-POSTPOSING ELEMENT IN OLD ENGLISH

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1. INTRODUCTION

The headedness of IP and VP¹ is in synchronic variation in Old English, a thesis known as the *Double Base Hypothesis* (Santorini 1992, Pintzuk 1993, Kroch & Taylor 1997). Through grammar competition (Kroch 1989, 1994), I-initial and subsequently V-initial grammar gradually become generalized. It is, however, difficult to measure the frequency of I-final and I-initial or of V-final and V-initial phrase structure directly because of verb or verb projection raising as well as various rightward postposition processes (e.g. Kemenade 1987, Haeblerli & Pintzuk 2011). For example, (1) illustrates an unambiguous case of verb raising across an auxiliary that must be I-final since it is preceded by two heavy arguments. Example (2) shows an unambiguous case of DP-postposition across an I-final modal.

(1) ... þæt his geferan twegen healicne martyrdom __ wæron [browiende].
 ... that his companions two glorious martyrdom were suffering
 '... that his two companions were suffering glorious martyrdom'
 (cobede,BedeHead:5.22.29.131)

(2) ... þæt hi __ geseon magon [mine beorhtnysse]
 ... that they see may my brightness
 '... that they may see my brightness' (coaelhom,ÆHom_11:526.1761)

Therefore, a clause with the word order *finite verb – nonfinite verb* can be generated either by an I-initial grammar or by an I-final grammar with verb (projection) raising. Similarly, the word order *verb – object* is ambiguous between I-initial phrase structure and I-final structure with DP-postposition.

In order to measure the development of the frequency of I- and V-initial phrase structure appropriately, one must therefore identify diagnostic elements that can never postpose. If these elements occur after a finite main verb, they indicate necessarily I-initial structure; if after a nonfinite main verb, necessarily V-initial structure. Various elements have been identified as non-postposing diagnostics, such as particles, stranded prepositions, non-subject pronouns or negatively quantified objects (e.g. Pintzuk 1999, 2005, Pintzuk & Haeberli 2008).

In this paper, I will argue that post-nominal *self* is a hitherto unidentified non-postposing element in Old English. First, a classification of different uses of post-nominal *self* will be presented. Next, I will show that *self* does not postpose in Old English, using the methodology first developed by Pintzuk (1999). Finally I will use *self* as a diagnostic to measure the frequency of I- and V-initial phrase structure. The conclusion follows.

¹ My syntactic assumptions about Old English are very simple: The lexical core of a clause is the VP. The VP is selected by the functional category I and projects IP. IP is selected by the functional category C and projects CP. The finite verb is normally placed in I and in certain V-to-C movement environments as high as C.

2. CLASSIFICATION OF POST-NOMINAL SELF

I distinguish between three types of post-nominal *self* in Old English: reflexive, intensifying, and pronominally reinforced (e.g. Gelderen 2000, Sinar 2006 et inter alia).

Reflexive *self* always occurs with a reflexive pronoun as a non-subject argument that is co-indexed with another argument in the same clause, usually the subject. In this function, *self* (3a) alternates with bare pronouns (3b). Hence, *self* is optional.

I also group into this category accusative pronominal subjects of small clauses (4a) or subject -to-object raising constructions (4b) emphasised with *self*. These pronouns can scramble into the higher clause (4c).

(4) a. [Se ealdormonn]; sceal lætan [[hine;_i selfne] gelicne his hieremonnum]
 the ruler shall consider him self same his subjects
 'The ruler must consider himself the same as his subjects'
 (cocura,CP:17.107.8.701)

b. he;_i gesyhb [[hine;_i sylfne] byrnan].
 he sees him self burn
 'he sees himself burning' (cogregdC, GDPref_and_4_[C]:30.304.5.4516)

c. ... [se hea Cyning]; [...] se [hine;_i sylfne] forlet [__ beon on rode ahangenne].
 ... the high king who him self let be on cross hanged
 '... the high king who let himself be hanged on the cross'
 (coblick,HomS_10_[BIHom_3]:33.110.436)

Rarely, reflexive *self* can get stranded, as in (5).

(5) se_i [hine_i] wile [__ selfne] bedælan ðære bledsunge
 the-one him will self deprive this blessing
 'he will deprive himself of this blessing' (cocura,CP:44.333.1.2249)

Intensifying *self* is not co-indexed with another argument in the same clause. It occurs with subjects (6a) but also non-subjects (6b).

Moreover, *self* can intensify non-pronominal phrases, again subjects (7a) and non-subjects (7b).

(7) a. & [þa burgware self] hit onbærndon
and the citizens self it burned
'and the citizens themselves burned it' (coorosiu,Or_3:11.78.27.1550)

b. ... þæt hy heanon of þisse weurlde magen [þa sunnan sylfe] geseon.
... that they hither from this world may the sun self see
'... that they may see the sun itself, from here, from this world'
(cosolilo,Solil_1:48.9.610)

Intensifying *self* can get stranded, as shown below.

(8) a. Ac [hie] woldon [__ selfe] fleon ða byrðenne sua micelre scylde,
but they wanted self flee the burden so great guilt
'but they themselves wanted to flee the burden of such great guilt'
(cocura,CP:2.31.14.140)

b. Æresð [him] ðuhte [__ selfum] ðæt ðæt he wäre suiðe unmedeme,
first him thought self that that he were very incompetent
'At first it might seem to him himself that he was very incompetent'
(cocura,CP:17.113.10.755)

Finally, pronominally reinforced *self* is always a pronoun+*self* cluster. This cluster is co-indexed with another argument in the same clause, and functions as an adjunct, either on the co-referential pronominal or non-pronominal constituent itself or as a clausal adjunct. In the former use, it is similar to intensifying *self* in that it somehow "emphasizes" a nominal constituent, similar to Modern English (9a). In the latter usage, it carries the semantic role 'benefactive' (9b).

(9) a. [[þa six gebroþra];i [hi sylfe];i] þa tihton [...]
the six brethren them self then testified
þæt hi sweltan woldon for Godes gesetnyssum,
that they die would for God's ordinances
'The six brothers themselves then testified that they would die for God's ordinances'
(coaelive,ÆLS_[Maccabees]:120.4888)

b. ... þæt man;i mid mandædum & mid synnum [him sylfum];i geearnige edwit
... that one with wickedness and with sins him self earns disgrace
'... that one earns disgrace for himself with wickedness and with sins'
(coblick,HomU_19_[BlHom_8]:101.85.1303)

Normally, the two uses cannot be differentiated. For example, (10) below is ambiguous between "emphasis" of the subject and a benefactive adjunct reading.

(10) ... þonne he him sylfum reþne dom & heardne geearnaþ & begyteþ,
... when he him self relentless judgement and hard earns and obtains

i) when he himself earns and obtains relentless and hard judgement
ii) when he earns and obtains relentless and hard judgement for himself
(coblick,HomS_26_[BlHom_7]:95.238.1243)

The same ambiguity arises in (11) but with stranding of the pronoun+*self* cluster for the first reading.

(11) þa byrgene [...] , þe ic hæfde me sylf of stane aheawen
 the grave that I had me self of stone carved
 i) 'the grave that I myself had carved out of stone'
 ii) 'the grave that I had carved out of stone for myself'
 (covinsal, VSAL_1_[Cross]:21.4.166)

Therefore, I group all cases of pronominally reinforced *self* together as one type. It is not possible to differentiate between occurrences of *self* with subjects and non-subjects: If cases of direct adjunction of a pronoun+*self* cluster to its antecedent could be identified unequivocally, they should be categorised accordingly, i.e. usually as subject ((9a), (10), (11) reading i). On the other hand, if one could unambiguously discern benefactive adjunct readings, they should be classified as intensifying *self* with a non-subject ((9b), (10), (11) reading ii), cf. (6c)). By the same token, I cannot distinguish between stranded and non-stranded instances of pronominally reinforced *self*. Instead, I make a difference between local cases, if no material intervenes between antecedent and the pronoun+*self* cluster (9a), (10), and non-local cases, if some material does so intervene (9b), (11).

I do not consider any other cases of post-nominal *self*, for example in complements of prepositions (12a) or in possessors within another DP (12b).

(12) a. ure Drihten þas frecednyssa [ðurh [hine sylfne]] gefremme.
 our Lord this harm through him self accept
 'Our Lord accepts this harm through himself'
 (cocathom2, *ÆCHom_II*, 42:311.33.7035)

b. [[Cristes selfes] ðegnas]
 Christ's self servants
 'the servants of Christ himself'
 (cosolilo, *Solil_2*:62.1.832)

3. BAN ON POSTPOSITION OF POST-NOMINAL SELF

I will now show that the three types of post-nominal *self* described in the previous section do never postpose in Old English. In order to do this, I will compare contexts that can only be generated by an I-final grammar, i.e. *necessarily I-final contexts*, to contexts that could be either I-initial or I-final with verb (projection) raising or postposition, i.e. *potentially I-initial contexts*. If *self* is a non-postposing element, it should never occur after the verb in necessarily I-final contexts, but should sometimes do so in potentially I-initial contexts (cf. Pintzuk 1999 for this methodology).

3.1. Material

I consider two different types of I-final structures in root and subordinate clauses: Firstly, the surface word order *nonfinite verb – finite verb* indicates necessarily I-final structure as in (13).

(13) & ða he hi ðus gehalgod hæfde,
and when he them thus blessed had
'and when he had thus blessed them' (cootest,Lev:8.31.3739)

For I-final order, I require the finite and nonfinite verb to be immediately adjacent to each other in order to exclude cases of verbal topicalization. If *self* appears before the nonfinite main verb, it must occur in its base or a preposed position. Postverbal *self* must be derived through postposition. The reverse, potentially I-initial context is *finite verb – nonfinite verb*. For I-initial order, I ignored cases of V-to-C movement in root clauses since they obscure the headedness of IP (for V-to-C movement environments in Old English, see van Kemenade 1987, Pintzuk 1999, Haeberli 2000, Bergen 2003, et inter alia). I also excluded cases with two or more heavy elements preceding the finite verb as likely instances of verb (projection) raising. Preverbal *self* in I-initial contexts can either be preposed to the I-domain before the finite verb or be generated by an I-final grammar with verb (projection) raising or be sandwiched between finite and nonfinite verb, indicating a base or derived position within the VP. Postverbal *self* arises from either a head-initial VP or postposition. The four word order possibilities are summarized below:

(14) a. <i>self – nonfinite verb – finite verb</i>	necessarily I-final, preverbal <i>self</i>
b. <i>nonfinite verb – finite verb – self</i>	necessarily I-final, postverbal <i>self</i>
c. <i>self – finite verb – self – nonfinite verb</i>	potentially I-initial, preverbal <i>self</i>
d. <i>finite verb – nonfinite verb – self</i>	potentially I-initial, postverbal <i>self</i>

The second necessarily I-final context shows two or more heavy constituents before a finite main verb, as in (15). Heavy constituents are defined as phrases that do not dominate only a pronoun or only an adverb or dominate more than one word. I regard *self* itself as a heavy constituent.

(15) *Ðæt [ba ylcan bispapas] [Bryttum] [on gefeohte] [godcundne fultum] forgeafon;*
 that the same bishops Britons in fight divine help gave
 'That the same bishops gave divine help to the Britons in battle'
 (cobede,BedeHead:1.8.25.23)

If *self* plus at least one heavy constituent precede the finite verb, *self* must occur in its base or a preposed position. If *self* appears after two heavy constituents and the finite verb, it must have postposed. In root clauses, if one of the two heavy constituents is the subject, it must precede the second heavy constituent. Otherwise, one of the heavy constituents may have topicalized into the C-domain, potentially creating an I-initial verb third structure (e.g. Speyer 2008). As the reverse, potentially I-initial context, I investigate clauses with a finite main verb followed by at least one heavy DP. As before, instances of V-to-C movement are not considered in root clauses. If *self* appears before the finite verb in I-initial contexts, it has preposed to the I-domain or is found in an I-final clause with DP-postposition. Postverbal *self* is either found inside the VP or is postposed. (16) presents the four word order options, where XP and YP stand for any heavy constituent.

(16) a. <i>XP – self – finite verb</i>	necessarily I-final, preverbal <i>self</i>
b. <i>XP – YP – finite verb – self</i>	necessarily I-final, postverbal <i>self</i>
c. <i>self – finite verb – XP</i>	potentially I-initial, preverbal <i>self</i>
d. <i>finite verb – self – XP – self</i>	potentially I-initial, postverbal <i>self</i>

3.2 Procedure

The data was extracted from the electronic, syntactically parsed corpus YCOE (Taylor et al. 2003) using CorpusSearch2 (Randell 2004). Every relevant instance was subsequently

classified according to 1. type of *self* (reflexive, intensifying, pronominally reinforced), 2. stranding (stranded, non-stranded and for pronominally reinforced *self*, local, non-local), 3. clause type (root, subordinate clauses), 4. for intensifying *self*: grammatical function (subjects, non-subjects), 5. for intensifying and pronominally reinforced *self*: the constituent *self* modifies (pronoun, non-pronoun), 6. context (with a nonfinite verb, with two heavy constituents), as well as 7. the word order pattern *self* is found in (I-final, I-initial; preverbal, postverbal).

3.3. Results and Discussion

The results of this investigation are as follows: Firstly, with nonfinite verbs, non-stranded reflexive and intensifying non-subject *self* never occur in I-final postverbal position but in all other word order patterns. This is illustrated for non-stranded reflexive *self* in (17).

(17) a. *I-initial, preverbal self*

... ðæt we sceoldon urra selfra waldan mid ðære geðylde.
 ... that we should our self control with this patience
 '... that we should control ourselves with this patience'
 (cocuraC,CP_[Cotton]:33.220.4.48)

b. *I-initial, postverbal self*

... for þam [...] he sceal gearcian hine sylfne
 ... because he shall prepare him self
 '... because he shall prepare himself'
 (cochdrul,ChrodR_1:79.41.968)

c. *I-final, preverbal self*

... þæt he uneaðe hine sylfne aberan mihte,
 ... that he hardly him self bear could
 '... that he could hardly bear himself'
 (cogregdC,GD_1_[C]:4.36.18.399)

d. * *I-final, postverbal self*

The overall numbers for each word order pattern in this context are presented below in table 1 for subordinate clauses and in table 2 for root clauses.

	<i>self</i> before the verb	<i>self</i> after the verb
I-initial	42 (86%)	7 (14%)
I-final	24 (100%)	0 (0%)

Table 1: Distribution of reflexive and non-subject intensifying *self*, non-stranded, with a non-finite verb, in subordinate clauses

	<i>self</i> before the verb	<i>self</i> after the verb
I-initial	24 (86%)	4 (14%)
I-final	2 (100%)	0 (0%)

Table 2: Distribution of reflexive and non-subject intensifying *self*, non-stranded, with a non-finite verb, in root clauses

I-initial and I-final preverbal *self* can serve as a base figure to calculate the frequency of expected I-final, postverbal *self*. The reason for this is that the majority of both I-initial and I-

final preverbal *self* are plausibly analysed as elements within a head-final VP. In particular, I-initial, preverbal *self* is most commonly found between finite and non-finite verb, as in (17a). It is true that there are some cases of *self* appearing before the finite verb, for example under topicalisation in root clauses or in subject relatives. But overall, only 7 of 42 (17%, see table 1) subordinate clauses and only 2 of 24 (8%, see table 2) root clauses with potentially I-initial word order show *self* before the finite verb. If all instances of I-initial, postverbal *self* were derived through postposition, the expected number of I-final, postverbal *self* would correspond to the product of preverbal, I-final *self* and the ratio of post- to preverbal I-initial *self*. With this calculation, 4 instances of I-final, postverbal *self* would be expected in subordinate clauses ($7/42 \times 24$) when 0 are attested. Thus, it seems likely that in fact none of the instances of postverbal, I-initial *self* are generated by postposition but rather that they are all cases of head-initial VPs. However, with the same calculation, only 0.3 instances of postverbal I-final *self* would be expected in root clauses ($4/24 \times 2$) because I-final structure is quite infrequent in this clause type. Thus, the fact that there are in fact 0 instances is much less relevant. Nevertheless this finding is not completely meaningless since, in theory at least, there could have been an instance of an I-final, postverbal *self* in a root clause and so the hypothesis that *self* cannot postpose has survived another falsification attempt.

Secondly, with two heavy constituents before the finite verb, non-stranded reflexive and intensifying non-subject *self* cannot occur in I-final, postverbal position either. Illustrative examples of intensifying *self* in root clauses are given in (18).

(18) a. *I-initial, preverbal self*

þe sylf soðlice ne genealecæð nan yfel.
you self truly not approaches no evil
'truly, no evil will approach you'(coaelive,ÆLS[Lucy]:111.2238)

b. *I-initial, postverbal self*

ures Drihtnes apostolas ahsadan hine sylfne ymbe þisre worulde geendunge.
our Lord's apostles asked him self about this world's ending
'Our Lord's apostles asked him about the end of the world'(cowulf,WHom_5:8.164)

c. *I-final, preverbal self*

efne ge þæt me sylfum doð.
equally you that me self do
'you do that equally to me'(coverhom,LS_17.2_[MartinVerc_18]:74.2284)

d. * *I-final, postverbal self*

The overall numbers for each word order pattern in this context are presented below in table 3 for subordinate clauses and in table 4 for root clauses.

	<i>self</i> before the verb	<i>self</i> after the verb
I-initial	3 (4%)	64 (96%)
I-final	74 (100%)	0 (0%)

Table 3: Distribution of reflexive and non-subject intensifying *self*, non-stranded, with two heavy constituents, in subordinate clauses

	<i>self</i> before the verb	<i>self</i> after the verb
I-initial	8 (7%)	111 (93%)
I-final	37 (95%)	2 (5%)

Table 4: Distribution of reflexive and non-subject intensifying *self*, non-stranded, with two heavy constituents, in root clauses

There are a small number of apparent counterexamples to the assumption that *self* cannot postpose, which I will briefly discuss now. The first example comes from the Old English *Chrodegang of Metz* (Latin from Napier 1916: 56):

(19) a. [xp Pa sangeras] þonne [yp þurh þa gife þe him is gegyfen],
 the singers then through the gift which them is given
 ne læton ætforan oðrum hi sylfe þurh modignysse,
 not consider before others them self through pride
 ‘The singers, then, through the gift that is given to them, should not consider
 themselves before others through pride’ (cochdrul, ChrodR_1:48.9.624)

b. [xp Cantores] itaque non [yp propter donum sibi collatum]
 singers therefore not through gift self given
 se ceteris superbiendo preferant
 self others taking-pride prefer
 ‘The singers, therefore, through the gifts given to them, do not prefer themselves
 over others, by taking pride’

The two heavy constituents, labelled XP and YP, mirror precisely the order in the Latin original. Even a light adverb, *bonne*, is found in exactly the same place between the two constituents as its Latin source, *itaque*. Therefore, it seems likely that the apparently I-final clause is just a reflex of the Latin word order or that the second heavy constituent is “appositive”, outside of the core syntactic structure, as indicated in the translation. The second example comes from a far more reliable text, the second series of *Ælfric’s second series of Catholic Homilies*:

(20) and þæt bearn sylf æfter mihte þære godcundnysse forgeaf us him sylfum.
and that child self by virtue the Godhead gave us him self
'and that very same child – by virtue of the Godhead – gave himself to us.'
(cocathom2,ÆCHom_II,_25:210.129.4642)

Sentence (20) involves the postverbal pronoun *us*, which has already been established as a non-postposing element in Old English. This fact casts serious doubt on the assumption that (20) is an example of an I-final clause. Rather, it is possible that the second heavy constituent should be read “appositively”, with its own intonational phrase, as indicated in the translation. There are only another two, seemingly genuine examples of I-final, postverbal *self*, which have been included as such in the counts in table 4.

Thirdly, subject intensifying *self* does not contradict the hypothesis that *self* cannot postpose either: If the intensified constituent is a subject pronoun, it cannot occur within the VP or postpose, but must be placed at least as high as Spec,IP. This is exactly the same distribution as for bare subject pronouns. Thus, there are no instances of this type of *self* in any postverbal position.

(21) a. *I-initial, preverbal subject intensifying self with pronoun*

... þa þa he sylf [I, wæs geseted in þam tintregum].
 ... when he self was set in that torture
 '... when he himself was set in that torture'

(cogregdC, GDPref_and_4_[C]:34.310.28.4641)

b. * *I-initial, postverbal subject intensifying self with pronoun*

c. *I-final, preverbal subject intensifying self with pronoun*

and he sylf [I mid hwitum gyrlum befangen wæs].
 and he self with white dresses enveloped was
 'and he himself was enveloped in white dresses'

(cocathom2, ÆCHom_II,_10:82.30.1632)

d. * *I-final, postverbal subject intensifying self with pronoun*

If the intensified constituent is a full subject, it is usually placed at least as high as Spec,IP, but can also rarely occur in the VP. This mirrors the distribution of common full subjects. However, there are still no instances of postposed subject intensifying *self* in I-final contexts.

(22) a. *I-initial, preverbal subject intensifying self with full subject*

Dauid sylf [I nemde hine Drihten],
 David self called him Lord
 'David himself called him Lord'

(cowsgosp, Mk_[WSCp]:12.37.3183)

b. *I-initial, postverbal subject intensifying self with full subject*

ðam [I bebead God sylf þæt he sceolde faran]
 the-one ordered God self that he should go
 'God himself ordered him that he should go'

(cootest, Judg:6.14.5680)

c. *I-final, preverbal subject intensifying self with full subject*

& ure Drihten sylf [I hire eft ut of þam temple ber].
 and our Lord self her again out of the temple carried
 'and our Lord himself carried her again out of the temple'

d. * *I-final, postverbal subject intensifying self with full subject*

Table 5 shows the overall numbers for intensifying *self* with pronominal subjects, table 6 for intensifying *self* with full subjects.

	<i>self</i> before the verb	<i>self</i> after the verb
I-initial	94 (100%)	0 (0%)
I-final	84 (100%)	0 (0%)

Table 5: Distribution of intensifying *self* with pronominal subjects, non-stranded, with a nonfinite verb or two heavy constituents, in subordinate or root clauses

	<i>self</i> before the verb	<i>self</i> after the verb
I-initial	60 (87%)	9 (13%)
I-final	26 (100%)	0 (0%)

Table 6: Distribution of intensifying *self* with full subjects, non-stranded, with a nonfinite verb or two heavy constituents, in subordinate or root clauses

If all 9 I-initial, postverbal instances of *self* in table 6 were derived through postposition of the subject DP, one would expect 3.9 such instances for I-final contexts when in actuality 0 are attested. Thus, it seems probable that none of these subjects have postponed but are in fact all positioned in a lower subject position in the VP.

Cases of intensifying *self* with subjects are very common. However, on account of the fact that this type of *self* only rarely occurs in any postverbal position, its actual usability as a diagnostic element for initial phrase structure is limited.

Fourthly, *self* does not appear in I-final, postverbal position even if it is stranded. Since stranding of *self* is relatively rare, I extended the definition of potentially I-initial clauses. For the context with two heavy constituents, I considered all clauses that show *self* and the constituent it modifies separated, not just those with a postverbal DP. Some relevant examples are shown in (23).

(23) a. *I-initial, preverbal stranded self*

... ðætte [...] hie ne wurdon self ofslægene mid ðam sueorde ðære gitsunge,
 ... that they not were self slain with the sword of-the greed
 '... that they themselves were not slain with the sword of greed'

(cocura,CP:18.137.21.937)

b. *I-initial, postverbal stranded self*

ac he eode sylf to þam yttran gete,
 but he went self to the outer gate
 'But he himself went to the outer gate'

(coaelive,ÆLS_[Martin]:1166.6740)

c. *I-final, preverbal stranded self*

Totilla ða sylf to mynstre eode.
 Totilla then self to minster went
 'Totilla himself went to a minster'

(cocathom2,ÆCHom_II,_11:99.247.2074)

d. * *I-final, postverbal stranded self*

The overall numbers for stranded *self* are presented in table 7.

	<i>self</i> before the verb	<i>self</i> after the verb
I-initial	37 (51%)	35 (49%)
I-final	50 (98%)	1 (2%)

Table 7: Distribution of stranded *self*, with a nonfinite verb or two heavy constituents, in subordinate or root clauses

I found one apparent counterexample to the assumption that stranded *self* cannot postpone, shown in (24) below:

(24) ... þeah þe þæt hus ufan open sy sylf & unoferhrefed
 ... although that house overhead open is self and un-over-roofed
 '... although that house itself is overhead open and not covered'
 (coblick, HomS_46_[BlHom_11]:125.180.1565)

Example (24) shows a full subject and the first conjunct of a predicative adjective in preverbal position. It thus appears as if both postverbal *self* and the second conjunct have postposed. However, there are parallel cases where a predicative adjective must have preposed to preverbal position as evidenced by the fact that a non-postposing diagnostic element (underlined) follows the verb:

(25) ... for ðam ðe se ælmihtiga God swa mildheort wæs us þæt he his Sunu asende
 ... because the almighty God so mild-hearted was us that he his son sent
 '... because Almighty God was so compassionate to us that he sent his son.'
 (coaelhom, ÆHom_3:124.484)

Thus, in (24), the first conjunct adjective could have preposed rather than the second conjunct having postposed. Until it has been proven that *self* is a non-postposing element, however, this analysis remains speculative. Therefore, I included this counterexample in table 7.

The majority of stranded *self* modifies the subject (116 of 123 instances). I found 4 instances of stranded reflexive *self*, cf. (5), and 3 examples of non-subject intensifying *self*, cf. (8b), none of them in late texts. All 3 instances of stranded, non-subject intensifying *self* involve oblique experiencers in broadly impersonal contexts. Since otherwise only nominative constituents can strand *self*, this fact may support the proposition that Old English had quirky subjects (e.g. Allen 1995).

The numbers in table 7 combine the contexts with a nonfinite verb and two heavy constituents. In the former context, virtually all instances of I-initial *self* are preverbal, sandwiched between finite and nonfinite verb (cf. (23a), 31 of 32 instances). The only counterexample is shown in (26):

(26) he sceal losian sylf.
 he shall be-lost self
 'he shall be lost himself' (colwstan2, ÆLet_3_[Wulfstan_2]:140.205)

In the second context, almost all instances of I-initial *self* are postverbal (cf. (23b), 34 of 40 instances). Preverbal examples can be found if *self* gets stranded under subject relativization (27a) or subject across the board extraction under conjunction (27b).

(27) a. ... [Godes sunu], [cp ðe [IP [__ sylf] come to mannum]]
 ... God's son who self came to men
 '... God's son who himself came to men'
 (coaelive, ÆLS_[Abdon_and_Sennes]:94.4783)

b. [Se biscop] þa ferde bodigende geond eall Norðhymbra lande geleafan
 the bishop then left preaching through all Northumbrians' land belief
 [...] and [cp [__ sylf] swa leofode swa swa he lærde oðre]
 and self so lived so as he taught others
 'The bishop then left, preaching the faith throughout Northumbria and lived
 himself so as he was teaching others' (coaelive, ÆLS_[Oswald]:70.5426)

Apart from reflexive *self* and high stranding, forms of stranded *self* can plausibly be assumed to occur in a lower subject position inside the VP. For the majority of cases, this analysis works well, independently of the headedness of IP. Stranded *self* occurs immediately after verbal adjuncts (italics) that presumably mark the VP boundary in I-initial (28a) as well as in I-final contexts (28b).

(28) a. he ongan *þa* [vp sylf weopan for his deaðe]
 he began then self weep for his death
 ‘he himself began to weep for his death’ (cogregdC, GD_1_[C]:10.84.16.965)
 b. ... on ðæm londum [...] be he *aer* [vp self gehergad] hæfde.
 ... in the lands that he earlier self harried had
 ‘...in the lands that he himself had harried before’ (coorosiu, Or_3:11.78.10.1539)

However, a closer look at the material shows that roughly 19% of all instances of stranded *self* (21 of 113 relevant examples) cannot readily be assumed to be elements in the lower subject position inside the VP. Two of them are examples (24) and (26) above. 3 examples present various other difficulties, such as a missing extracted constituent that would leave *self* stranded. Most importantly, however, there are 16 instances that show a non-subject argument in front of *self* (29a). If *self* was placed unvaryingly in Spec,VP, these arguments would sometimes be placed above VP (29b) and sometimes in the I-domain (29c), judging from adverb placement.

Object preposing inside the VP might be more frequent than is commonly assumed since diagnostic elements indicating the VP boundary, like *self*, are not usually present. It is easy to find examples of arguments that are separated from their main verb, for example by adverbs (30). This may indicate that these arguments are placed in a preposed position.

(30) ... þæt he ne mihte [ðone halgan wer] lichamlice __ acwellan.
 ... that he not could the holy man bodily kill
 '... that could not bodily kill the holy man'
 (cocathom2,ÆCHom_II,_11:96.153.1992)

Furthermore, it is known independently that object preposing to the I-domain does at least sometimes occur. The examples in (31) show a preverbal argument in a necessarily I-initial clause, as evidenced by postverbal diagnostics (underlined).

(31) a. Gif þu [wætan] dest __ to
 if you fluid do to
 'If you add some fluid' (colaece,Lch_II_[1]:73.1.2.1980)

b. & þa oðre [ða dura] bræcon þær __ adune
 and the others the doors broke there down
 'And the others broke the doors' (cochroN,ChronE_[Plummer]:1083.23.2787)

It is therefore possible to maintain the hypothesis that stranded subject *self* is placed unvaryingly in the lower subject position inside the VP – c. 80% of the data is compatible with this hypothesis straightforwardly; most of the remaining c. 20% can be accounted for through syntactic mechanisms that are independently needed. If every instance of I-initial, postverbal *self* in table 7 was generated by postposition, there should be 47 cases of I-final postverbal *self* when in reality only one dubious case can be found. Thus it seems likely that all instances of stranded *self* are in fact placed in the lower subject position and that none have postposed.

Finally, pronominally reinforced *self* never appears in I-final, postverbal position. Examples are given in (32) for DP antecedents in root clauses.

(32) a. *I-initial, preverbal self*

þa þwangas þara scona ongunnon heom sylfe toslupan mid mycelre hrædnesse
 the straps of-the shoes began them self open with great quickness
 'The straps of the shoes began themselves to open quickly'
 (cogregdC,GPref_and_3_[C]:20.221.22.3009)

b. *I-initial, postverbal self*

On þære ylcan nihte æteowode Crist hine sylfne Martine on swefne
 in the same night appeared Christ him self Martin in dream
 'In the same night, Christ himself appeared to Martin in a dream'
 (cocathom2,ÆCHom_II,_39.1:289.38.6542)

c. *I-final preverbal self*

Swa eac Paulus þurh his mæran bodunge him sylfan nanes lofes ne tilade,
 so also Paulus through his great preaching him self no praise not aimed-at
 'Likewise, Paulus did not aim at praise through his great preaching for himself'
 (cobenrul,BenR:4.4.42)

d. * *I-final, postverbal self*

The numbers for each word order pattern in this context are presented below in table 8.

	<i>self</i> before the verb	<i>self</i> after the verb
I-initial	29 (30%)	68 (70%)
I-final	29 (100%)	0 (0%)

Table 8: Distribution of pronominally reinforced *self*

I found one apparent example of I-final, postverbal *self* in this context, shown in (33).

(33) Se man þe for gilpe hwæt to goode deð: **him sylfum to herunge:**
 the man that for pride something to good does him self to praise
 'The man who does any good for pride, to his own praise'
 (cocathom1,ÆCHom_I,_11:274.221.2173)

In (33), post-verbal *self* is interpreted as a benefactive adjunct on a following predicative PP headed by *to*. Thus, appropriate translations of *him sylfum to herunge* could be ‘as praise for himself’ or ‘to receive praise for himself.’ Importantly, the same construction can postpose with a bare pronoun as well. In (34), a pronoun postposes along with *to* and a stative noun complement, *him to gode* ‘as a good for them.’ Other cases involve eventive nouns, e.g. *him to plegan* ‘to play for them’ or *to* and an inflected infinitive complement, originally perhaps a deverbal noun, as in *him to brucanne* ‘as use for them.’ This usage may be one of the sources for the grammaticalization of *to* towards a nonfinite marker.

(34) ... þæt gyldene cealf, þe hi geworht hæfdon **him to gode**
 ... that golden calf that they worked had them to good
 ‘... the golden calf that they had produced for their own benefit’
 (cootest,Exod:32.19.3466)

The parallel between the counterexample in (33) and cases such as (34) strongly suggest that *self* is contained inside a PP, which is a type of *self* that lies outside the scope of this paper, and may in fact postpose. Therefore, example (33) was not included in the counts for table 8.

Owing to the inherent ambiguity of pronominally reinforced *self* – between subject and non-subject *self*, stranding and non-stranding – it is not easily possible to untangle the different environments in which *self* appears post- and preverbally. However, it does not seem implausible that conclusions from the previous contexts carry over to the present one. Thus, non-stranded subject *self* with a pronominal antecedent only occurs preverbally, while subject *self* with a full subject antecedent may also be placed postverbally in a lower subject position (32b). Stranded subject *self* is likely to be placed in a lower subject position. Stranded and benefactive *self* should virtually always appear preverbally in I-initial clauses with a nonfinite verb (32a) but should usually appear postverbally in I-initial clauses in the context with two heavy constituents.

If one assumes that all these factors are distributed roughly equally over the entire sample of pronominally reinforced *self*, it would follow that there are far fewer I-final, postposed instances than would be expected: By accident, the number of examples of I-initial and I-final, preverbal *self* in table 8 are identical, namely 29. Therefore, for each case of I-initial, postverbal *self* that is generated by postposition, there should be one such corresponding case in I-final clauses, but 0 are attested. Ergo, it seems likely that in fact none of the examples of I-initial, postverbal *self* have postposed but that they all follow the structural constraints outlined above.

3.4. Summary

I have shown that *self* cannot appear after the verb in necessarily I-final contexts. The number of potential counterexamples is vanishingly small and some conflicting cases are dubious to begin with. This finding holds for reflexive and intensifying non-subject *self* with a non-finite verb and with two heavy constituents, for subject intensifying *self*, all forms of stranded *self* as well as pronominally reinforced *self*. Therefore, it seems highly likely that these forms of *self* are non-postposing elements in Old English and can be used as a diagnostic for initial phrase structure.

4. USING *SELF* AS A DIAGNOSTIC

I will now use *self* as a diagnostic element to measure the development of IP and VP headedness. If *self* is a non-postposing element, it should reveal an increase in I- and V-initial phrase structure in parallel with other diagnostics.

4.1 IP-headedness

Since *self* cannot postpose (35a), postverbal *self* with a finite main verb must indicate I-initial phrase structure (35b).

(35) a. * [IP [I [VP __] [I finite verb]]] *self* b. [IP [I [I finite verb] [VP *self*]]]

Thus, measuring the percentage of postverbal *self* with a finite main verb of all clauses with a finite main verb and *self* yields a lower bound of necessarily I-initial phrase structure. The results can then be compared to the numbers obtained from the same measurement with “old diagnostics”: pronouns, particles, negatively quantified objects and stranded prepositions (e.g. Pintzuk & Haeberli 2008). On account of the fact that non-stranded, subject intensifying *self* occurs postverbally only very rarely, I excluded this type as a diagnostic. Furthermore, I differentiated between main (MC), conjoined main (CC) and subordinate clauses (SC) since the former exhibit less I-final word order than the latter (e.g. Traugott 1992). In order to avoid cases of V-to-C movement, I required an overt subject to occur before the finite main verb in MCs and CCs. The data was collected with the YCOE (Taylor et al. 2003).

The results of this investigation are shown in table 9.

		EARLY			LATE		
		postverbal	N	%I-initial	postverbal	N	%I-initial
MC	particles	31	423	7.3	123	540	22.8
	pronouns	149	1031	14.5	699	1949	35.9
	neg. objects	9	23	39.1	28	35	80.0
	stranded prep.	11	23	47.8	85	93	91.4
	SELF	28	56	50.0	55	69	79.7
CC	particles	47	470	10.0	145	621	23.3
	pronouns	111	1057	10.5	505	1750	28.9
	neg. objects	19	62	30.6	58	105	55.2
	stranded prep.	18	36	50.0	54	69	78.3
	SELF	23	66	34.8	34	44	77.3
SC	particles	54	1422	3.8	57	1233	4.6
	pronouns	120	3586	3.3	330	3650	9.0
	neg. objects	35	226	15.5	60	154	39.0
	stranded prep.	27	391	6.9	31	358	8.7
	SELF	54	179	30.2	53	122	43.4

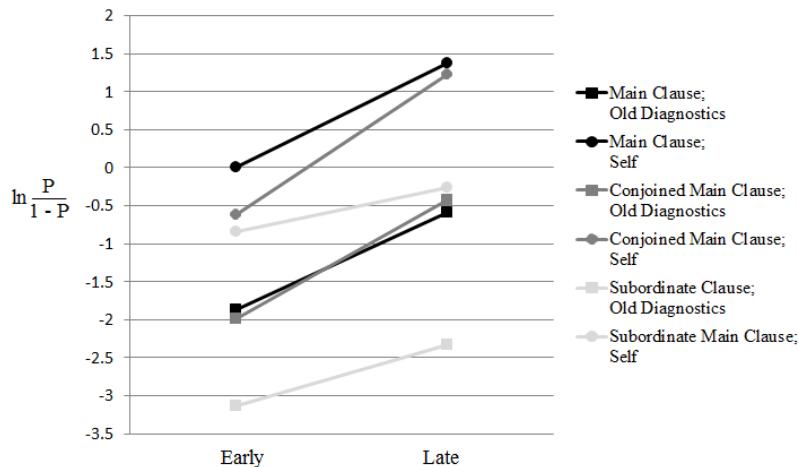
Table 9: The development of I-initial phrase structure as measured by *self* and old diagnostics

Self shares all the crucial distributive characteristics of the old diagnostics: there is a coherent increase in I-initial phrase structure across the three clause types from early to late Old English (dividing line c. 975A.D.), from 50.0% to 79.7% in MCs, 34.8% to 77.3% in CCs and 30.2% to 43.4% in SCs. The same coherent development can be observed for all the other

diagnostic elements. Furthermore, there is a coherent clause type effect. In both the early and late Old English periods, MCs are the most innovative, SCs the most conservative clause type, and CCs pattern in between (early 50%, 34.8% and 30.2%, late 79.7%, 77.3% and 43.4% for MCs, CCs and SCs respectively). Again, the same is true for the old diagnostics. While *self* is not nearly as common as particles or pronouns, its frequency roughly compares with negative objects or stranded preposition and can therefore be regarded as practicable. Finally, I-initial headedness is, on average, more common when measured with *self* than with the old diagnostics (e.g. in late subordinate clauses, 43.4% vs. 4.6% when measured with particles).

The question now becomes whether the parallel developments are accidental or if *self* and the old diagnostics do indeed measure the same change, i.e. the rise in I-initial headedness. If so, the replacement of I-final by I-initial phrase structure should progress at the same rate of change irrespective of whether it is measured by the old diagnostics or *self*. In other words, the development of I-initial headedness should exhibit the Constant Rate Effect (Kroch 1989) with respect to the diagnostic element.

It is possible to explore this hypothesis visually as follows: Linguistic change can be modelled as an s-shaped, logistic curve, where rate of use is indicated as a probability between 0 and 1 as the dependent and time as the independent variable. Its equation includes the predictor t , time, the constants k , determining the mid-point of change, and s , its slope or rate of change. The logit transform of the rate of use divided by 1 minus the rate of use equals these three terms in a linear equation. It is straightforward to calculate these logits for early and late Old English and plot them on a chart.



Graph 1: Logits of rate of use divided by 1 minus rate of use of I-initial headedness for early and late Old English by diagnostic element and clause type

As graph 1 shows, the rate of change from I-final to I-initial headedness does indeed seem to be identical since the graphs for *self* (round marker) and old diagnostics (square marker) run approximately parallel to each other for MCs (black line), CCs (dark grey line) and SCs (light grey line). The intercept of the graph modelling the rise in I-initial headedness is consistently closer to 0 for *self* than for the sum of the old diagnostics, which indicates that the former is more innovative than the latter.

Furthermore, the presence of the Constant Rate Effect can be demonstrated analytically as follows: The logistic regression technique makes it possible to assess which predictors have a significant effect on the outcome of the dependent variable. If both old diagnostics and *self* measure the same change, their effect on the distribution of I-initial and I-final phrase structure should not change over time but remain constant. To show this, I fitted the data in

table 9 to a logistic regression and ran an Analysis of Deviance on the resulting model in R. The result is shown in table 10².

	Df	Deviance	Resid. Df	Resid. Dev	Pr(>Chi)
Null			11	2295.89	
Period	1	708.5	10	1587.39	<0.001
Diagnostic	1	351.62	9	1235.77	<0.001
ClauseType	2	1201.78	7	33.99	<0.001
Period:Diagnostic	1	0.01	6	33.98	0.92007
Period:ClauseType	2	25.35	4	8.63	<0.001
Diagnostic:ClauseType	2	5.3	2	3.34	0.07075
Period:Diagnostic:ClauseType	2	3.34	0	0	0.18855

Table 10: Analysis of Deviance summary of logistic regression model for the data in table 9

As table 10 shows, the interaction between Period and Diagnostic is not significant. This confirms the hypothesis that I-initial headedness increases at the same rate when measured by *self* or the old diagnostics. Diagnostic emerges as a significant predictor since I-initial headedness is overall more likely if measured with *self* than with the old diagnostics.

4.2 VP-headedness

The exact same reasoning used to evaluate the development of the headedness of IP can be employed for the headedness of VP as well. Since *self* cannot postpose (36a), *self* following a nonfinite main verb necessarily indicates a head-initial VP (36b).

(36) a. * [IP [I finite verb] [VP [V₀— [V nonfinite verb]]]]] *self*
 b. [IP [I finite verb] [VP [V₀ [V nonfinite verb] *self*]]]]

Therefore, measuring the percentage of postverbal *self* with a nonfinite main verb, as in (37), of all clauses with a nonfinite main verb and *self* yields a lower bound of necessarily V-initial phrase structure.

(37) *Necessarily V-initial clause, based on self as a diagnostic*

Rufinus wolde habban him self þone anwold þær east
 Rufinus wanted have him self the power there east
 'Rufinus wanted to have the power himself there in the east'
 (coorosiu,Or_6:37.155.18.3304)

As before, the results can then be related to numbers obtained from the same measurement with the old diagnostics. Non-stranded, subject intensifying *self* was excluded as a diagnostic. Unfortunately, clauses with a nonfinite main verb and a diagnostic element are not very frequent. I therefore collapsed main and conjoined main clauses into one category,

² In order to assess the model fit, I measured the significance of the overall model with insignificant predictors removed. I ran a chi-square test on the difference between the null deviance and residual deviance and the difference between their respective degrees of freedom. The very small p-value ($p \approx 0$) indicates that the model has explanatory value. To satisfy the criterion of overdispersion, the ratio of the residual deviance to the residual degrees of freedom should not be much larger than 1. Here the ratio of the residual deviance of 8.7827 to 5 degrees of freedom is 1.76, an acceptable result (cf. Baayen 2008: 198-9).

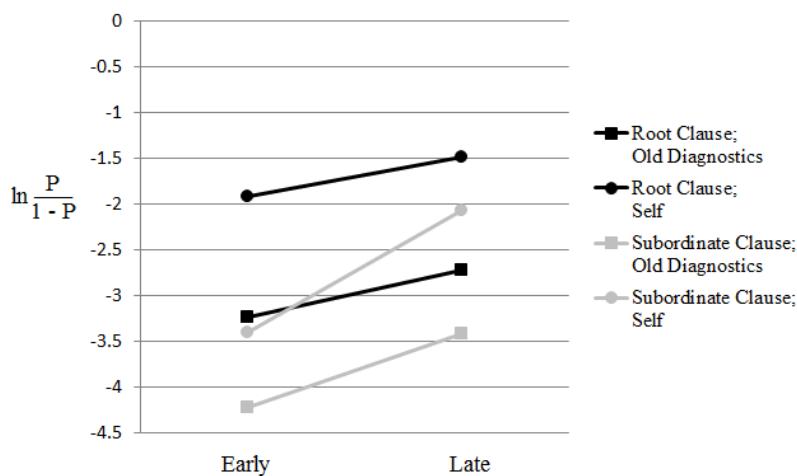
root clauses. Since nonfinite verbs appear in their base position almost unvaryingly, it is not necessary to avoid cases of V-to-C movement in root clauses. Once again, the data was collected with the YCOE (Taylor et al. 2003). Table 11 shows the results of this study:

		EARLY			LATE		
		postverbal	N	% V-initial	postverbal	N	% V-initial
ROOT	particles	12	335	3.6	12	302	4.0
	pronouns	23	753	3.1	59	987	6.0
	neg. objects	6	101	5.9	10	85	11.8
	stranded prep.	5	27	18.5	4	10	40
	SELF	5	39	12.8	9	49	18.4
SC	particles	10	437	2.3	5	277	1.8
	pronouns	6	1209	0.5	27	848	3.2
	neg. objects	6	104	5.8	7	37	18.9
	stranded prep.	6	191	3.1	1	98	1.0
	SELF	2	62	3.2	5	45	11.1

Table 11: The development of V-initial phrase structure as measured by *self* and old diagnostics

With a nonfinite verb, too, *self* distributes exactly as expected. V-initial phrase structure increases for both root clauses, from 12.8% to 18.4%, and subordinate clauses, from 3.2% to 11.1%. In this respect, *self* may even be a better diagnostic than particles and stranded prepositions, for which I did not find such a coherent development. Furthermore, root clauses are more frequently V-initial than subordinate clauses in early as well as late Old English when measured with *self*. Here, *self* outperforms negatively quantified objects as a diagnostic, which do not exhibit this clause type effect. Finally, the headedness of VP is, on average, more innovative when *self* is used as the diagnostic element (e.g. in late subordinate clauses, 11.1% vs. 1.8% when measured with particles).

In order to determine whether the rise in V-initial headedness proceeds at the same rate when measured with *self* and the old diagnostics, I calculated the logits of the rate of use divided by 1 minus the rate of use. The resulting graph is shown below:



Graph 2: Logits of rate of use divided by 1 minus rate of use of V-initial headedness for early and late Old English by diagnostic element and clause type

Although there does seem to be some divergence between *self* and the old diagnostics in subordinate clauses, by and large, the graphs for *self* (round marker) and the old diagnostics (square marker) run parallel to each other for root (black line) and subordinate clauses (grey line). Thus, the headedness of VP changes roughly at the same rate for the two contexts. The intercepts of the graphs are closer to 0 for *self* than for the old diagnostics, which indicates the relative innovativeness of VP headedness when measured with *self*.

To show analytically that the old diagnostics and *self* measure the same change, I fitted the data in table 11 to a logistic regression and ran an Analysis of Deviance on the resulting model in R. Table 12 shows the result³.

	Df	Deviance	Resid. Df	Resid. Dev	Pr(>Chi)
Null			7	82.279	
Period	1	28.257	6	54.022	<0.001
Diagnostic	1	19.14	5	34.882	<0.001
ClauseType	1	33.114	4	1.768	<0.001
Period:Diagnostic	1	0.073	3	1.695	0.7866
Period:ClauseType	1	1.348	2	0.347	0.2456
Diagnostic:ClauseType	1	0.043	1	0.305	0.8365
Period:Diagnostic:ClauseType	1	0.305	0	0	0.5809

Table 12: Analysis of Deviance summary of logistic regression model for the data in table 11

The interaction between Period and Diagnostic in table 12 is not significant. This confirms the hypothesis that V-initial headedness increases at the same rate when measured by *self* or the old diagnostics. Diagnostic emerges as a significant predictor because V-initial headedness is overall more likely if *self* is used as the diagnostic element.

In summary, there is good reason to believe that *self* is essentially distributed just like other diagnostic elements and that it reliably indicates I-initial phrase structure if it occurs after a finite main verb and V-initial phrase structure if after a nonfinite verb.

5. CONCLUSION

In this paper, I showed that three types of postnominal *self*, reflexive, intensifying and pronominally reinforced, never postpose in Old English since they cannot follow a finite verb in an I-final clause. Therefore, *self* can function as a diagnostic element to identify head-final phrase structure in postverbal position, just like particles, non-subject pronouns, stranded prepositions or negatively quantified objects. Indeed, the rate of change of IP and VP headedness is identical when *self* or the other elements are used as diagnostics.

Self can be used as a diagnostic in future studies exploring phenomena that require the identification of initial phrase structure. Relevant topics might include the development of Spec,IP into a rigid subject position or the loss of high pronominal scrambling. Thus, the conclusions of this paper may not only have merit in their own right, but can potentially help to advance the study of Old English syntax in other respects as well.

³ A chi-square test on the difference between the null deviance and residual deviance and the difference between their respective degrees of freedom of a model without insignificant predictors yields a very small p-value ($p \approx 0$), which indicates a good model fit. The criterion of overdispersion is satisfied because the ratio of the residual deviance of 1.7687 to the residual degrees of freedom, 4, is not much larger than 1, namely 0.4421.

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