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LINGUISTICS

ALLOMORPHY IN THE PLURAL MORPHEME OF OLD ENGLISH DISYLLABIC NEUTER *A*-STEM NOUNS: ANALOGY AND TOKEN FREQUENCY[1]

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ABSTRACT

Many instances of plural number marking in Old English disyllabic neuter *a*-stem nouns appear uncertain. This is due partly to a want of additional empirical evidence regarding what appears to have been a tension between a high vowel deletion process, by which some disyllabic neuters containing a long root vowel failed to attach the nominative/accusative plural number marker *-u*, and several analogical extension processes which resulted in irregular attachments of the plural markers *-u*, *-ø*, and others. This apparent unpredictability, however, is also due to a lack of agreement about how best to subclassify many disyllabic *a*-neuters. Various scholars have addressed the problem of the allomorphy at issue here, but their grouping criteria have differed and no one scheme has proven truly satisfactory (cf. Brunner – Sievers 1965; Dahl 1938; Campbell 1959; Wełna 1996). Consequently, determining which disyllabic *a*-neuters attached the *u*-plural allomorph regularly and which attached it by analogy as well as which of these neuters suffixed the *ø*-allomorph regularly and which did so analogically is troublesome. In an attempt to augment our understanding of allomorphy in the plural morpheme of the Old English disyllabic neuter *a*-stems, this paper analyzes more than 300 plurals culled from both Early and Late Old English texts, and it proposes, unlike previous treatments, that token frequency was crucial to the analogical processes which so often determined plural marker selection in these nouns.

1. Introduction

Accounts of plural allomorphy in Old English disyllabic neuter *a*-stems reveal that plural number marking in these nouns was complex and problematic, measurably more so than it was in Old English nouns of some other paradigms.

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Brunner – Sievers's handbook account (1965: 199) discloses that plural allomorphy in these neuters was influenced by the number of syllables which originally (in Early Old English) composed them, and by the length of the root syllable. Members of a sub-set of originally trisyllabic nouns, those with a long root syllable, regularly marked the plural overtly by suffixing *-u* (e.g. *heafodu* and *nietenu*). The originally trisyllabic nouns with a short root syllable, as well as all originally disyllabic nouns, occurred regularly in zero-plural form; even so, nouns of both of these types also occurred sporadically in *u*-plural form.

Wright – Wright's description (1925: 181-182) includes the observation that disyllabic *a*-neuters which historically terminated in *n*, or *r*, and which contained a short root syllable, did not regularly undergo syncopation but did regularly delete inflectional *–u*, and the note that plural form variation was greater in Late Old English times than it was in Early Old English times.

Campbell's treatment (1959: 226-229) highlights that the nature of the base-final segment, whether the base ended in a liquid (*l*, *r*) or a nasal (*n*, *m*), or neither, was key in the sense that disyllabic neuters of this shape, regardless of root syllable length, typically contained an anaptyctic vowel in zero-inflected forms, like their regular nominative and accusative plural forms (cf. *tacen* and *tungol*), and commonly did not contain such a vowel in overtly inflected forms, seen, for instance, when they irregularly attached the *u*-plural marker (cf. *tacnu* and *tunglu*), although forms showing anaptyxis and overt inflection (cf. *wolcenu* and *wæteru*) are also seen.

Wełna's statement (1996: 21), succinct and synchronic, underscores that irregular plural forms, like *wætru*, were by no means uncommon in Old English.

Dahl's survey (1938: 65-72) examines numerous instances of disyllabic *a*-neuter plurals which occur in various Old English prose and verse texts, categorizing them as having reflected "regular apocope" (cf. *wolcen*), "analogical apocope" (cf. *heafod*), "regular ending" (cf. *nietenu*), or "analogical ending" (cf. *yfelu*), and concludes, importantly for the present study, that regular forms prevailed in two Mercian verse texts (the *Vespasian Psalter* and the *Vespasian Hymns*) but also that irregular forms prevailed in one West Saxon prose text (Ælfred's *Cura Pastoralis*), as well as that analogical modeling seems to have caused additional regular forms in Mercian and additional irregular forms in West Saxon.

Lass's review (1994: 100-102), embedded in an outline of High Vowel Deletion, offers the hypothesis concerning *u*-plural retention that forms like *heafodu*, a trisyllabic form consisting of a heavy (long) syllable followed by a light (short) syllable plus the syllabic plural marker *-u*, though irregular, occurred in Old English because the heavy syllable equaled a metrical foot itself, allowing the following light syllable, which did not condition deletion, to precede, in its own foot, the inflectional high vowel (cf. Kiparsky – O'Neil 1976; Hogg 2000; and Fulk 2010 for additional consideration of High Vowel Deletion).

However, to the author's knowledge, no single account to date has demonstrated how syllabification, root syllable length, base-final segment, foot structure, and token frequency interacted in Old English to produce the allomorphic patterns we observe in extant texts. This paper attempts to clarify our picture of allomorphy in the plural morpheme of the Old English disyllabic *a*-neuters, and may be seen to contribute to the discussion of allomorphy generally, by (1) considering all five of these factors in a single treatment, (2) stressing the factor of token frequency (i.e. the incidence of a particular form in a portion of textual material; cf. Smith 2001: 362-363), and (3) adducing a relatively significant number of data. The analysis will scrutinize noun plurals attested in 9 Old English prose texts, which together represent the West Saxon dialect of Early Old English as well as all of the four major dialects of Late Old English, and which constitute approximately 475,000 words of textual material.

2. Design of the study

The study hinges on two corpora, a corpus of neuter *a*-stem nouns and a corpus of Early and Late Old English texts. The noun corpus consists of 15 Old English disyllabic neuter *a*-stems, each of which is categorized as such by Brunner – Sievers (1965: 199-200), Wright – Wright (1925: 181-182), and Campbell (1959: 226-229) and is known to be attested in Old English in the nominative plural or the accusative plural on at least one occasion (cf. *The Oxford English Dictionary* 1989). Needless to say, many nouns of this subclass of neuter *a*-stems do not satisfy these, or similarly reasonable, criteria for inclusion, which increases the significance of the total of 15 items in the noun corpus (a number otherwise debatably small). The text corpus comprises 9 comparatively lengthy and, in the main, evidentially indispensable Old English prose texts (cf. Ker 1957; Campbell 1959; Taylor et al. 2003) three of which (taking in approximately 175,000 words) represent Early Old English (c. 850 – c.950), more specifically Early West Saxon (Ælfred's *Boethius*, *Cura Pastoralis*, and *Orosius*), and six of which (taking in some 300,000 words) represent Late Old English (c. 950 – c.1100), three standing for Late West Saxon (Ælfric's *Catholic Homilies First Series*), the *West Saxon Gospels*, and the *Anglo-Saxon Chronicle* (MS D)) and one each standing for Late Northumbrian (the gloss on the *Lindisfarne Gospels*), Late Mercian (the gloss on the *Rushworth Gospel of St. Matthew*), and Late Kentish (glosses to the *Proverbs*). Because 8th century and 9th century non-West Saxon prose text materials are exiguous, Early Old English representation is limited to the West Saxon dialect. That greater relevant allomorphic variation typified Late Old English warranted the deeper sampling of Late Old English textual materials (cf. Wright – Wright 1925: note 181). The examination of prose texts only was justified in view of the poetical concerns for meter

which routinely characterize verse and more than occasionally effectuate irregular inflectional forms. The token data culled embody all occurrences of these 15 nouns in nominative plural form and accusative plural form in the materials of the text corpus.

3. Token evidence in detail and overview

The Early Old English textual materials yielded 115 tokens, and the Late Old English textual materials yielded 205 tokens. Thus, the present data total 320, including 246 tokens (77%) containing a vocalic-plural marker, the marker *-u* in 114 instances (36% of the vocalic-plural tokens), and 69 tokens (23%) containing a zero-plural marker.

3.1 Token evidence in detail

The token evidence culled is presented below, primarily by group, according to the original number of syllables and to root syllable length, and secondarily by individual lexical item, descendingly ordered by frequency of occurrence in the nominative plural and the accusative plural in the textual materials examined.

3.1.1 Group 1: originally disyllabic, long root syllable

Nouns of this group regularly attached the allomorph *-ø* in the nominative plural and the accusative plural (cf. Wright – Wright 1925: 181; Campbell 1959: 226-227), and the nominative plural and accusative plural tokens representing them in the text corpus materials number to 156, including 124 vocalic-plural tokens (27 in *–u*), 27 zero-plural tokens, 2 *s*-plural tokens, and 3 *n*-plural tokens.

3.1.1.1 **wundor** (62 tokens) takes zero and vocalic forms: EOE *wundor*, *wundru*; LOE *wundru*, *wundra*, *uundra*. The zero form dominates in EOE and the vocalic form dominates in LOE.

3.1.1.2 **tacen** (44 tokens) takes zero, vocalic, and *s*-plural forms: EOE *tacen*; LOE *tacen*, *tacn*, *taceno*, *tacnu*, *tacna*, *tacnas*. The zero form dominates in EOE and the vocalic form dominates in LOE.

3.1.1.3 **tungol** (15 tokens) takes zero, vocalic, *s*-plural, and *n*-plural forms: EOE *tungul*, *tungl*, *tunglu*; LOE *tungcla*, *tunglas*, *tunglan*. The vocalic form dominates in EOE and the *n*-plural form dominates in LOE.

3.1.1.4 **beacen** (14 tokens) takes vocalic form: LOE *beceno*, *becena*, *becno*. The vocalic form dominates in LOE.

3.1.1.5 **wæpen** (14 tokens) takes zero and vocalic forms: EOE *wæpn*, *wæpeno*, *wæpnu*, *wæpna*; LOE *woepeno*, *wæpnu*, *wæpna*. The vocalic form dominates in EOE and in LOE.

3.1.1.6 **wolcen** (7 tokens) takes zero and vocalic forms: EOE *wolcnu*, *wolc*; LOE *wolcn*, *wolcnu*. Neither form dominates in EOE and the vocalic form dominates in LOE.

3.1.2 Group 2: originally disyllabic, short root syllable

Nouns of this group regularly attached the allomorph *-ø* in the nominative plural and the accusative plural (cf. Wright –Wright 1925: 182; Campbell 1959: 226-227), and the nominative plural and accusative plural tokens representing them in the text corpus materials number to 16, all of which are vocalic-plural tokens (10 in *–u*).

3.1.2.1 **wæter** (15 tokens) takes vocalic form: EOE *wæteru*, *wætru*; LOE *wæteru*, *weteru*, *wætro*, *wætra*, *uætro*. The vocalic form dominates in EOE and the vocalic form dominates in LOE.

3.1.2.2 **weder** (1 token) takes vocalic form: EOE *wedera*. The vocalic form dominates in EOE.

3.1.3 Group 3: originally trisyllabic, long root syllable

Nouns of this group regularly attached the allomorph *-u* in the nominative plural and the accusative plural (cf. Brunner – Sievers 1965: 199; Campbell 1959: 227-228), and the nominative plural and accusative plural tokens representing them in the text corpus materials number to 67, including 64 vocalic-plural tokens (51 in *-u*) and 3 zero-plural tokens.

3.1.3.1 **nieten** (44 tokens) takes vocalic form: EOE *nietenu*, *nytenu*, *nitenu*, *netenu*, *neotena*; LOE *nytenu*, *neteno*, *netna*. The vocalic form dominates in EOE and in LOE.

3.1.3.2 **heafod** (18 tokens) takes zero and vocalic forms: EOE *heafudu*, *heafdu*, *heafda*; LOE *heafdu*, *heafda*, *heafod*, *heafud*. The vocalic form dominates in EOE and in LOE.

3.1.3.3 **lenden** (4 tokens) takes vocalic form: LOE *lendenu*, *lendu*. The vocalic form dominates in LOE.

3.1.3.4 **mægden** (1 token) takes vocalic form: EOE *mædena*. The vocalic form dominates in EOE.

3.1.4 Group 4: originally trisyllabic, short root syllable

Nouns of this group regularly attached the allomorph *-ø* in the nominative plural and the accusative plural (cf. Brunner-Sievers 1965: 199; Campbell 1959: 227-228), and the nominative plural and accusative plural tokens representing them in the text corpus materials number to 81, including 42 vocalic-plural tokens (26 in *-u*) and 39 zero-plural tokens.

3.1.4.1 **yfel** (39 tokens) takes zero and vocalic forms: EOE *yfel*, *yfelu*, *yfelo*, *yflu*; LOE *yfel*, *yfelu*, *yfelo*, *yfele*, *yflo*, *wyflo*. The zero form dominates in EOE and the vocalic form dominates in LOE.

3.1.4.2 **mægen** (24 tokens) takes zero and vocalic forms: EOE *mægen*, *mægenu*, *mægno*; LOE *mægen*, *mægenu*, *menegu*, *mægnu*, *mægno*, *mægna*, *mægne*. The vocalic form dominates in EOE and in LOE.

3.1.4.3 **werod** (18 tokens) takes zero and vocalic forms: EOE *werode*; LOE *werod*, *weored*, *worado*. The vocalic form dominates in EOE and the zero form dominates in LOE.

3.2 Overview

At the onset of reviewing the evidence presented above, a word should be said about the many plurals in *-o* or *-a*. These, it has long been recognized, reflect a sound change, a lowering from /*-u*/ to /*-o*/ to /*-a*/ (cf. Brunner – Sievers 1965: 196; Campbell 1959: 19-20, 156-157). It has also been noticed that the graphemes <u>, <o>, and <a> may alternately represent the same sound in a single text (Campbell 1959: 19). Although it has been suggested that in some instances a final *-a* may have an analogical source (cf. Liuzza 2000: 152), we will proceed for immediate purposes on the assumption that the non-*u*-form vocalic endings together with the *u*-ending represent, as a set, one plural inflection, a vocalic-plural inflection, which contrasts with the zero-plural inflection.

As regards allomorphic patterns related to the original number of syllables of these nouns and the length of their root syllables, these data present an image somewhat similar to that which Dahl (1938: 70-71) observed in evidence culled from Ælfred's *Cura Pastoralis* (a text examined in this study as well). In the evidence of three of the four groups, irregularity prevails, even in the data of EOE. Here, vocalic-plural forms rival zero-plural forms in Group 1 tokens

(15:18), the former outnumber somewhat the latter in Group 4 tokens (22:17), and the first type stands unopposed in Group 2 tokens (9:0). However, in Group 3 tokens we find the regular vocalic-plural forms (taking in *a*-forms as well as *u*-forms) standing unopposed. In LOE, the analogical, irregular forms of nouns of groups 1, 2, and 4 only multiply, and the variation only increases.

Although all but two corpus nouns feature either a base-final liquid or a nasal, one discernable pattern regarding base-final segments appears if we focus solely on liquid-final bases (in *-r* or *-l*) and the nouns of Groups 1, 2, and 4 (the nouns regular in *-ø*): with syncope, or rather without anaptyxis, nouns with such bases, as a set, attach the *u*-plural much more frequently in the EOE data than do nouns with other base types. The liquid-final bases are observed 19 times in *-u* with syncope, whereas the non-liquid-final bases are observed 6 times in *-u* with syncope. Five of the latter instances involve Group 1 nouns. Thus, forms like *wæpnu* and *wolcnu* do occur, but those like *tunglu*, *wundru*, *wætru*, and *yflu* appear to reflect a far more striking pattern. Of course the strength of this allomorphic pattern depends on syncope.

The plurals in evidence which may support the supposition about foot structure and the retention of the *u*-plural in originally trisyllabic long root syllable neuters (Lass 1994: 100-101), *netenu* (x7 in BOE), *nytenu* (x2 in BOE, x2 in OR, x15 in CH(I), x1 in WSG), *neotena* (x1 in BOE), *nietenu* (x11 in CP, x1 in OR), *nitenu* (x1 in CP), *neteno* (x1 in LG), and *heafudu* (x1 in CP) as well as *lendenu* (x3 in WSG) and, with loss of *-Z-* but root vowel lengthening, *mædena* (x1 in OR), are plentiful enough. Still, counterexamples containing single long-syllable bases do occur in *heafdu* (x1 in BOE, x1 in CP, x1 in WSG), *heafda* (x1 in CP, x1 in OR, x4 in CH (I), x3 in LG), *netna* (x1 in LG), and perhaps *lendu* (x1 in RGM). The zero-forms *heafud* (x1 RGM) and *heafod* (x2 in WSG) can be added to these. The ratio of the former type to the latter type is 11:4, which lends support to the hypothesis.

On the matter of token frequency specifically, we observe that the sub-group of disyllabic *a*-neuters represented by the greatest number of tokens is Group 1, followed in order by Group 4, Group 3, and Group 2. The most frequently occurring noun in each group is *wundor* for the first group, *wæter* for the second group, *nieten* for the third group, and *yfel* for the fourth group. The vocalic-form to zero-form comparisons of these nouns in EOE are, respectively, 1:11 tokens (including 1 in *-u*), 8:0 tokens (including 8 in *-u*), 26:0 tokens (including 25 in *-u*), and 13:16 tokens (including in 12 in *-u*). Nouns with the greatest incidence of *u*-attachment with syncope in EOE are *tungol* in Group 1, *wæter* in Group 2, *heafod* in Group 3, and *yfel* in Group 4. The *a*-form *heafda* occurs beside the *u*-form *heafdu*, though in a minority of instances. To the extent that token frequency is indeed relevant to the allomorphic patterns observed in these nouns, we should expect to find the higher frequency nouns, or forms, leading change,

after initially resisting it (Bybee 2001: 113; see also Bybee 2007 and Bybee – Hopper 2001). If the nouns *wæter* and *yfel*, as high frequency representatives of Groups 2 and 4, were targets of analogical plural number marking, and they began to take the irregular forms *wætru* and *yflu*, other nouns of those groups should have been susceptible to that irregular plural-marking pattern. While the Group 2 noun *weder*, fellow to *wæter*, is encountered only once in the text corpus materials, though irregularly with a vocalic plural inflection, the two other Group 4 nouns *mægen* and *werod*, fellows to *yfel*, are encountered several more times in those materials, but, in the case of neither of these nouns, in vocalic-plural form more than approximately half as often as *yfel* is encountered there in an irregular vocalic-plural form. These data could indicate analogical modeling, and suggest that nouns of Groups 2 and 4 may have begun to fall in with the vocalic-marking nouns of Group 3 as a result of such modeling. If the high frequency Group 1 representative *wundor* began to take a vocalic-plural form (and in fact the irregular form *wundru* is attested in the EOE text CP), its fellow neuters in that group should have been susceptible to the same irregular vocalic inflection. The Group 1 vocalic plurals *tunglu*, *wæpnu*, *wæpna*, *wæpeno*, and *wolcnu* are also attested in EOE text materials (certain of these forms attested there even more often than the plural *wundru*). More than just token frequency may have been responsible for some of these plurals, but certainly these forms, as forms of the neuters of the highest frequency group, could well have been targeted for analogical modeling.

4. Conclusions

Analysis of the allomorphic patterns evident in the data culled has led to several conclusions.

It may be best to begin with a conclusion regarding the regular retention of the *u*-plural marker in Group 3 nouns and foot structure. Lass (1994: 100-101) seems to be correct in supposing that the long root syllable in each of these nouns was analyzed as one foot in itself and that the *u*-plural, because it followed a short syllable in the second foot, was not affected by High Vowel Deletion. However, a limit on the applicability of High Vowel Deletion must have been imposed by the lowering of inflectional *-u*, a process which is in fact evident in a few of the supportive forms, such as *neteno* and *mædena*. Where that lowering occurred, High Vowel Deletion would not have applied. Therefore, if the hypothesis is correct, the process might have been more obvious in a slightly earlier stage of the language (pre-850).

A second conclusion pertains to what appear to be significant patterns in the EOE data, patterns that have primarily to do with the analogical attachment of the *u*-plural in Group 1 nouns, those which were originally disyllabic and fea-

tured a long root syllable. From a synchronic point of view, leaving aside acknowledgement of these neuters' original number of syllables, a certain instance of analogical targeting is conceivable, and if it happened it would have afforded some of these neuters a means of overt plural inflection- which is generally preferable- and played an instrumental role in a portion of the irregular attachment of the *u*-plural in disyllabic *a*-neuters in EOE. Preceding inflection, syncope would have given certain Group 3 nouns, like *heafod*, and certain Group 1 nouns, like *tacen*, *wæpen*, and *beacen*, similar base shapes. *Heafd-*, *tacn-*, *wæpn*, and *beacn-* all feature long root syllables containing a long vowel followed by a two-consonant cluster. The first and the third of these take syncopated *u*-plural form already in EOE, and all of them take syncopated vocalic-plural form in LOE. According to the unlemmatized *Dictionary of Old English* concordance listings (Venezky – diPaolo Healey 1980), the forms *heafod*, *tacen*, *wæpen*, and *beacen* occur 786 times, 197 times, 36 times, and 22 times, respectively. Also, the forms *heafdu*, *tacnu*, *wæpnu*, and *beacnu* occur 50 times, 44 times, 25 times, and 1 time, respectively. Even though the listings are unlemmatized, few other words or case-number forms of these words employed these series of graphemes (cf. *The Oxford English Dictionary* 1989), thus the figures here, at least the more extreme figures, could well indicate that *heafod* occurred frequently enough, particularly in syncopated *u*-plural form, to have served as an analogical target causing *u*-plural attachment. Also, it should not be ignored that two other Group 1 nouns, *wundor* and *tungol*, if presented a suitable analogical target within Group 1, were susceptible to *u*-attachment on grounds of vowel harmony, and perhaps also, with syncope, liquid-final conditioning. Presumably lowered forms, in <-o> or <-a>, do not occur in the EOE texts examined. As noted above, the form *tunglu* is comparatively frequent in present EOE data, and the form *wundru*, also occurring in these data, appears as many as 172 times in EOE texts and LOE texts combined (cf. Venezky – diPaolo Healey 1980). These forms must have added analogical momentum to *u*-pluralization in Group 1 nouns, and likely also in nouns of Groups 2 and 4 since they, Group 1 nouns as a set, show relatively high plural-token frequencies. When the EOE forms *wætru* and *yflu* began to appear, due either to the effects of that analogical momentum, or to a vulnerability based on liquid-final conditioning, or to both, Groups 2 and 4 then hosted high frequency nouns which were susceptible to *u*-pluralization, and were capable of analogical modeling within their groups. Though outnumbered by non-syncopated *u*-forms, the forms *wætru* and *yflu* are recorded 35 times and 20 times in OE, respectively (cf. Venezky – diPaolo Healey 1980). If these developments reached any level of advancement before the lowering of *-u*, once that lowering began, the vocalic inflection was assured a healthy level of frequency through the remainder of Old English times.

A third conclusion relates to the generalization of the vocalic-plural (graphemically represented as <-o>, <-a>, and still <-u>, in nouns of Groups 1, 2, and 4), the specific key to which was the lowering of inflectional *-u* to /-o/ and /-a/, even if this generalization took over where the analogical processes just discussed left off. This lowering, evident already in EOE plurals like *yfelo* in CP, *mægno* in BOE, *wedera* in OR, and *heafda* in CP and OR (non-*u*-form marking amounting to as much as 14% of EOE vocalic marking in present data), would have prevented High Vowel Deletion from operating on the final inflectional vowel in these neuters, allowing overt plural marking in the form of vocalic inflection, and should have increased the incidence of vocalic inflection in these nouns. Although clearly the *o*-forms as well as some significant number of the *a*-forms reflect this lowering, it has been claimed that in the WSG *-a* is often seen in strong neuters in place of plural marking *-u* but *-a* is rarely seen in that text in place of other instances of inflectional /-u/, which suggests an alternative cause for those *a*-forms, namely the extension of the feminine nominative and accusative *a*-plural marker (Liuzza 2000: 152).

A last conclusion concerns the analogical attachments of the neuter *ø*-plural marker, the masculine *s*-plural marker, and the weak *n*-plural marker. Analogical *ø*-plural inflection in Group 3 nouns, those neuters which regularly attached the *u*-plural rather than the *ø*-plural, was apparently quite limited. Two instances of *heafod* and one instance of *heafud* are recorded in the LOE data. *Werod*, which occurs in zero-plural form in these data relatively frequently, and which contains a base-final /-d/, may have proven an analogical target in these instances. The *s*-plural forms *tacnas* and *tunglas*, both attested in LG, indicate an increase in the productivity, and likely the incidence, of the masculine *s*-form plural marker in Late Northumbrian, just as the *n*-plural form *tunglan*, attested in CH (I), points to similar circumstances regarding the weak *n*-form plural marker in Late West Saxon.

The allomorphy in the plural morpheme of Old English disyllabic neuter *a*-stems which is revealed in the corpus texts is characterized by (1) unfailing regular vocalic-plural marking (if with and without syncope) in originally trisyllabic *a*-neuters with long root syllables in EOE, (2) very limited irregular zero-plural marking in these neuters in LOE, (3) routine irregular vocalic-plural marking in originally disyllabic *a*-neuters with long root syllables or short root syllables as well as originally trisyllabic *a*-neuters with short root syllables in EOE (already at a ratio of 4:3 irregular to regular), (4) extensive irregular vocalic-plural marking in these neuters in LOE, (5) very limited irregular *s*-plural marking and irregular *n*-plural marking in originally disyllabic *a*-neuters with long root syllables in LOE. The extent to which the identification of these general patterns in those textual materials clarifies our picture of allomorphy in the plural morpheme of the Old English disyllabic *a*-neuters is of course arguable.

Nevertheless, the data analyzed suggest that foot structure played a part in the first of these general patterns, that the sound change of lowering was instrumental in the third and fourth patterns, and that analogy propelled by token frequency was causal to those bold third and fourth patterns as well as the less prominent second and fifth patterns.

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APPENDIX A

Corpus of Old English Disyllabic Neuter *a*-Stem Nouns
(listed alphabetically)

1. **beacen** ‘beacon, sign’
2. **heafod** ‘head’
3. **lenden** ‘loin’
4. **mægden** ‘maiden’
5. **mægen** ‘strength, power, virtue’
6. **nieten** ‘animal, beast of burden’
7. **tacen** ‘token, sign’
8. **tungol** ‘star, heavenly body’
9. **wæpen** ‘weapon’
10. **wæter** ‘water’
11. **weder** ‘weather’
12. **werod** ‘host, troop, band’
13. **wolcen** ‘cloud’
14. **wundor** ‘wonder, marvel, miracle’
15. **yfel** ‘evil’

APPENDIX B

Corpus of Early Old English and Late Old English Textual Sources
(listed by dialect and date, with abbreviations)

Early West-Saxon (c. 850 - c. 950)

BOE ÆLFRED'S BOETHIUS
(MS: London, British Museum, Cotton Otho A vi)

CP ÆLFRED'S CURA PASTORALIS
(MSS: Oxford, Bodleian, Hatton 20; London British Museum, Cotton Tiberius B. xi)

OR ÆLFRED'S OROSIUS
(MS: London, British Museum, Additional 47967)

Late West-Saxon (c. 950 - c. 1100)

CH (I) ÆLFRIC'S CATHOLIC HOMILIES I
(MS: Cambridge, University Library, Gg. 3.28)

WSG WEST SAXON GOSPELS
(MS: Cambridge, Corpus Christi College, 140)

ASC ANGLO-SAXON CHRONICLE (D)
(MS: London, British Museum, Cotton Tiberius B. iv)

Late Northumbrian (c. 950)

LG LINDISFARNE GOSPELS
(MS: Cotton Nero D. iv)

Late Mercian (c. 975)

RGM RUSHWORTH GOSPELS: MATTHEW
(MS: Auct. D. ii. 19)

Late Kentish (a. 1000)

KGL GLOSSES TO THE PROVERBS
(MS: Cotton Vespasian D. vi)

APPENDIX C

Token Data
(listed alphabetically by lexical item)

beacen ‘beacon’

LG
<becena> x2 acc. pl. [pp. 133 (Mt.), 121 (Jn.)]
<beceno> x2 nom. pl. [pp. 201 (Lk.), 203 (Lk.)]; x9 acc. pl. [pp. 197 (Mt.), 107 (Mk.), 43 (Jn.), 53 (Jn.), 59
(Jn.), 73 (Jn.), 91 (Jn.), 111 (Jn.), 181 (Jn.)]
<becno> x1 acc. pl. [p. 27 (Jn.)]

heafod ‘head’

BOE
<heafdu> x3 acc. pl. [pp. 102, 127]

CP
<heafudu> x1 nom. pl. [p. 105]
<heafdu> x1 acc. pl. [p. 139]
<heafda> x1 nom. pl. [p. 131]

OR
<heafda> x1 nom. pl. [p. 86]; x1 acc. pl. [p. 40]

CH (I)
<heafda> x4 acc. pl. [pp. 524, 526, 527]

WSG
<heafod> x2 acc. pl. [pp. 234 (Mt.), 126 (Mk.)]
<heafdu> x1 acc. pl. [p. 202 (Lk.)]

LG
<heafda> x3 acc. pl. [pp. 235 (Mt.), 127 (Mk.), 203 (Lk.)]

RGM
<heafud> x1 acc. pl. [p. 235]

lenden ‘loin’

WSG
<lendenu> x1 nom. pl. [p. 132 (Lk.)]; x2 acc. pl. [pp. 34 (Mt.), 8 (Mk.)]

RGM
<lendu> x1 acc. pl. [p. 35]

mægden ‘maiden’

OR
<mædena> x1 nom. pl. [p. 26]

mægen ‘strength, power’

BOE
<mægno> x1 nom. pl. [p. 72]

CP
<mægen> x1 acc. pl. [p. 465]
<mægenu> x4 nom. pl. [pp. 87, 311, 463, 467]; x3 acc. pl. [pp. 220 (Cotton MS), 311]

WSG
<mægenu> x2 nom. pl. [pp. 196 (Mt.), 44 (Mk.)]
<mægnu> x2 nom. pl. [pp. 92 (Mt.), 94 (Mt.)]
<menegu> x1 nom. pl. [p. 108 (Lk.)]

LG
<mægna> x1 nom. pl. [p. 107 (Mk.)]
<mægno> x2 nom. pl. [pp. 65 (Lk.), 203 (Lk.)]; x1 acc. pl. [p. 119 (Mt.)]
<mægne> x1 nom. pl. [p. 119 (Mt.)]

RGM
<mægen> x4 nom. pl. [pp. 93, 95, 119, 197]; x1 acc. pl. [p. 119]

nieten ‘animal, beast of burden’

BOE
<netenu> x6 nom. pl. [pp. 5, 42, 70, 81, 146]; x1 acc. pl. [p. 117]
<nytenu> x2 nom. pl. [pp. 32, 93]
<neotena> x1 nom. pl. [p. 31]

CP
<nietenu> x6 nom. pl. [pp. 109, 155, 351]; x5 acc. pl. [pp. 109, 349]
<nitenu> x1 acc. pl. [p. 109]

OR
<nietenu> x1 nom. pl. [p. 123]
<nytenu> x2 nom. pl. [pp. 25, 26]; x1 acc. pl. [p. 25]

CH (I)
<nytenu> x10 nom. pl. [pp. 182, 184, 239, 251, 269, 318, 321, 349, 484]; x5 acc. pl. [pp. 181, 182, 335]

WSG
<nytenu> x1 nom. pl. [p. 36 (Jn.)]

LG
<neteno> x1 nom. pl. [p. 37 (Jn.)]
<netna> x1 acc. pl. [p. 8 (Mt.)]

tacen ‘token’

OR
<tacen> x1 acc. pl. [p. 131]

CH (I)
<tacnu> x3 nom. pl. [pp. 348, 350, 352]
<tacna> x5 nom. pl. [pp. 254, 351, 352, 524, 525]; x15 acc. pl. [pp. 175, 198, 275, 351, 356, 375, 487, 504, 524, 525, 528]

WSG
<tacen> x1 acc. pl. [p. 180 (Jn.)]
<tacn> x5 acc. pl. [pp. 196 (Mt.), 26 (Jn.), 90 (Jn.), 110 (Jn.), 120 (Jn.)]
<tacnu> x1 nom. pl. [p. 134 (Mk.)]; x2 acc. pl. [pp. 132 (Mt.), 58 (Jn.)]
<tacna> x3 nom. pl. [pp. 198 (Lk.), 200 (Lk.), 202 (Lk.)]; x3 acc. pl. [pp. 26 (Jn.), 42 (Jn.), 52 (Jn.)]

LG
<taceno> x1 nom. pl. [p. 105 (Mk.)]; x1 acc. pl. [p. 27 (Jn.)]
<tacnas> x1 acc. pl. [p. 9 (Mt.)]

RGM
<tacen> x2 acc. pl. [pp. 133, 197]

tungol ‘star’

BOE
<tungl> x1 acc. pl. [p. 69]
<tunglu> x3 nom. pl. [p. 126]; x4 acc. pl. [pp. 10, 131, 135]

OR
<tungul> x2 nom. pl. [pp. 28, 58]

CH (I)
<tunglan> x2 nom. pl. [pp. 229, 269]; x1 acc. pl. [p. 229]

LG
<tungcla> x1 acc. pl. [p. 133 (Mt.)]
<tunglas> x1 acc. pl. [p. 10 (Lk.)]

wæpen ‘weapon’

BOE
<wæpnu> x1 nom. pl. [p. 40]

OR
<wæpn> x1 nom. pl. [p. 79]; x1 acc. pl. [p. 75]
<wæpna> x1 acc. pl. [p. 29]
<wæpeno> x2 acc. pl. [pp. 111, 112]

CH (I)
<wæpnu> x1 nom. pl. [p. 437]
<wæpna> x1 nom. pl. [p. 522]; x1 acc. pl. [p. 438]

WSG
<wæpnu> x1 acc. pl. [p. 118 (Lk.)]

ASC
<wæpnu> x1 acc. pl. [p. 80]
<wæpna> x2 acc. pl. [pp. 83, 91]

LG

<woepeno> x1 acc. pl. [p. 119 (Lk.)]

wæter ‘water’

BOE
<wætru> x1 nom. pl. [p. 53]

CP
<wæteru> x1 acc. pl. [p. 413]
<wætru> x6 acc. pl. [pp. 373, 375]

WSG
<wæteru> x1 acc. pl. [p. 124 (Mt.)]
<wætro> x1 nom. pl. [p. 30 (Jn.)]

LG
<wætra> x1 acc. pl. [p. 125 (Mt.)]
<wætro> x1 acc. pl. [p. 71 (Mk.)]
<uætro> x2 nom. pl. [pp. 31 (Jn.), 73 (Jn.)]

KGL
<weteru> x1 nom. pl. [p. 64]

weder ‘weather’

OR
<wedera> x1 nom. pl. [p. 19]

werod ‘host, troop’

BOE
<werode> x1 acc. pl. [p. 116]

CH (I)
<werod> x9 nom. pl. [pp. 179, 180, 372, 374, 376, 406, 479, 487]; x6 acc. pl. [pp. 179, 180, 295, 372, 373, 490]
<weored> x1 nom. pl. [p. 526]

LG
<worado> x1 nom. pl. [p. 143 (Lk.)]

wolcen ‘cloud’

BOE
<wolcnu> x1 nom. pl. [p. 14]; x2 acc. pl. [pp. 18, 105]

CP
<wolc> x1 acc. pl. [p. 285]

CH (I)
<wolcnu> x1 nom. pl. [p. 511]; x1 acc. pl. [p. 512]

WSG
<wolcn> x1 nom. pl. [p. 140 (Mt.)]

wundor ‘wonder, marvel’

CP
<wundru> x1 acc. pl. [p. 103]

OR
<wundor> x9 nom. pl. [pp. 3, 4, 24, 86, 98, 100, 123]; x2 acc. pl. [pp. 23, 24]

CH (I)
<wundru> x1 acc. pl. [p. 351]
<wundra> x12 nom. pl. [pp. 254, 259, 277, 295, 308, 350, 351, 469, 524, 526]; x25 acc. pl. [pp. 175, 177, 187, 214, 215, 259, 280, 325, 344, 347, 350, 351, 375, 430, 453, 456, 487, 488, 504, 508]

WSG
<wundru> x1 nom. pl. [p. 118 (Mt.)]; x2 acc. pl. [pp. 168 (Mt.), 58 (Lk.)]

LG
<wundra> x2 nom. pl. [pp. 5 (Mk.), 235 (Lk.)]; x3 acc. pl. [pp. 21 (Mt.), 169 (Mt.), 59 (Lk.)]
<uundra> x1 nom. pl. [p. 8 (Jn.)]; x3 acc. pl. [pp. 43 (Jn.), 111 (Jn.)]

yfel ‘evil’

BOE
<yfel> x2 acc. pl. [pp. 7, 134]
<yflu> x1 acc. pl. [p. 27]

CP
<yfel> x1 nom. pl. [p. 449]; x5 acc. pl. [pp. 197, 211, 225, 261, 293]
<yfelu> x8 acc. pl. [pp. 79, 159, 397, 413, 419, 461, 467]
<yfelo> x1 acc. pl. [p. 431]
<yflu> x3 acc. pl. [pp. 222 (Cotton MS), 393, 439]

OR
<yfel> x2 nom. pl. [pp. 28, 66]; x6 acc. pl. [pp. 27, 28 31, 49, 70, 80]

CH (I)
<yfelu> x1 acc. pl. [p. 522]

WSG
<yfelu> x1 nom. pl. [p. 56 (Mk.)]
<yfele> x1 acc. pl. [p. 30 (Jn.)]

ASC
<yfel> x1 acc. pl. [p. 53]

LG
<yfelo> x1 nom. pl. [p. 57 (Mk.)]
<yflo> x4 acc. pl. [pp. 75 (Mt.), 103 (Mt.), 10 (Lk.), 51 (Jn.)]
<wyflo> x1 acc. pl. [p. 165 (Lk.)]