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Fragmentation of Strong Verb Ablaut in Old English*

Keith Johnson

1. Introduction

It has recently been claimed (Janda & Joseph, 1986; Bybee, 1986) that the normal line of development for morphological processes of language is from simple to complex, from unitary processes to fragmented ones. This claim goes completely counter to the standard generative approach to language change in which change is viewed as a type of simplification (Kiparsky, 1968). Janda & Joseph cite several examples of fragmentation (among them are Sanskrit reduplication, the English adjectival suffixes *-al, -ar,* and *-able*, and German umlaut) which lead them to the conclusion that 'morpholexical fragmentation - of reduplication, of nonreduplicative affixation, and of morphological processes in general - is indeed the crosslinguistic norm, both as a synchronic state and as a diachronic change' (Janda & Joseph, p. 113). In their view and in the view expressed by Bybee (1986) fragmentation as a diachronic development is the normal, natural line of development for morphological processes.

In this paper I demonstrate another case of morphological fragmentation - strong verb ablaut in Old English (OE). The conclusion of the paper is that the process of ablaut which was inherited by OE from Indo-European (IE) was fragmented as the result of sound changes and that this fragmentation resulted in particularization of ablaut patterns to smaller and smaller sets of lexical items. One of the theoretical implications of this account is that sound change seems to normally work by changing lexical representations, not by adding, deleting or simplifying phonological rules. Also, the facts reported here seem to indicate that the synchronic result of fragmentation (in this case) is a pattern of relations within the lexicon not a set of rules (i.e. not a rule-constellation[1]). Finally, the study indicates that speakers/hearers focus on the signifying functions of specific lexical items rather than general structural patterns (Bybee's (1986) independent development vs. structural coherence)[2].

2. Strong Verb Ablaut in OE

Verbs in Germanic can be classed as weak or strong according to whether their past tense is characterized by an alternation in the stem vowel. Traditionally, the strong verbs are divided into seven classes according to the structure of their stems. The number and type of post-vocalic segments in the Germanic stem determined the ablaut pattern of the stem vowel. Typical examples of the strong verbs of classes I - VI are listed in table 1.

Sound changes have obscured the pattern of the post-root segments. The first two classes had the vowels *i* and *u*,

respectively, after the root vowel. Class III was characterized by a post-root sequence of a resonant followed by an obstruent. Class IV had a single resonant following the root vowel, while class V had a single obstruent in this position.

Table 1
The OE strong verb, classes I - VI
from Lass and Anderson (1975, p. 25)

Class	Pres.	Pret. Sg.	Pret. Pl.	Part.	
I	bīdan	bād	bidon	-biden	'wait'
II	beodan	bēad	budon	-boden	'command'
III(a)	helpan	healp	hulpon	-holpen	'help'
(b)	weorpan	wearp	wurpon	-worpen	'throw'
(c)	bindan	band	bundon	-bunden	'bind'
IV	beran	bǣr	bǣron	-boren	'bear'
V	sprecan	sprǣc	sprǣcon	-sprecen	'speak'
VI	bacan	bōc	bōcon	-bacen	'bake'

2.1 Origin of the ablaut patterns

In this section I will discuss the IE origins of the OE ablaut patterns. I will show that the patterns illustrated in table 1 are not derived historically from the same IE pattern, but constitute a mixture of several types of IE verb forms. This account is taken primarily from Prokosch (1939) and Campbell (1959).

The present tense of the Gmc. strong verbs of classes I - V was characterized by the vowel *e*. This vocalism comes down to OE unchanged in the class IV and V forms *beran* and *sprecan*. The class I sequence *ei* became *ī* in Gmc. The class II sequence *eu* was changed in OE to *ēo*. Two regular sound changes affect the vowel in class III. Breaking produces the diphthong *eo* before *r* in *weorpan*, and raising before nasals resulted in *i* in *bindan*. This latter change also affected some verbs in class IV (eg. *niman* 'to take').

The preterite singular in classes I - V is a continuation of IE perfect (cf. Grk λέ(πω , λέλοι πα)[3] and has the IE ablaut vowel **o* > Gmc. *a*. The ablaut forms of the first five classes are thus: (I) **ai* > *ā* (Campbell, 1959, 134); (II) *au* > *ēa* [æ:a] (Campbell, 1959, § 135); (III) **a* > æ (Campbell, § 131) except before nasals, then æ*LC* > *eaLC* ([æa]) (Campbell, § 143-144); (IV, V) **a* > æ (Campbell, § 131).

The preterite plural[4] in the first three classes of strong verbs had reduced grade (hence IE *i,u,R* > Gmc *i,u,uR*), while classes IV and V have Gmc *ǣ*[5] from IE *ē*. In OE this developed as æ except before nasals where it became *ō*. The 2sg ending in W.Gmc. was *-iz* > OE *-e*. This ending is probably from an IE

aorist of the type of Grk. ἔ-λιπ-ε. Since some IE aorist formations were also characterized by reduced grade ablaut it is possible that the OE pret. 2sg. is the later development of an IE aorist rather than an IE perfect. An IE aorist origin is also likely for the pret. pl. endings, of which Prokosch (1939) says, 'the Gmc. 3pl. in *-un* cannot be perfect endings, and the 1pl. in *-um* need not be one; the 2pl. in *-uþ* is surely analogical' (p. 163). (OE generalized the 3pl. ending to all pl. forms.) Thus, it is possible that the reduced grade of the vowel in the pret. pl. of classes I - III reflects an IE aorist rather than an IE perfect. These considerations led Prokosh to attribute the pret. pl. of classes IV and V in *ē* to an IE aorist which he also sees in Grk. ἔβην and Lat. *vēn-* and *sēd-* (§ 57). Because these Grk. and Lat. forms have other, more probable origins it is perhaps better to consider the *ē* form as a later development and peculiar to Gmc., although it must have been present at a very early stage of development (all of the Gmc. languages show a reflex of it in class IV & V verbs).

The Michels-Streitburg theory[6] of the origin of a long vowel in classes IV and V is dismissed by Campbell (1959) - 'This theory involves many difficulties (especially with regard to the simplification of consonant groups) and is better abandoned' (p. 305, n. 1). Another objection to this theory is that it provides no principled explanation for the preservation of reduplication in classes IV and V while the reduplicated syllables in the other classes were simply haplologized.

Lass and Anderson (1975) proposed that the long vowels result from a grammatically conditioned rule such as (1) which

(1) Pret. pl. lengthening: from Lass and Anderson (1975)

$$V \rightarrow \left\{ \begin{array}{l} [-long] \\ [+long] / \underset{Pret2}{\_\_\_\_} \; CV \end{array} \right\}$$

lengthens pret. pl. vowels when they are followed by only one consonant (i.e. classes IV and V in Gmc.). This requires that underlying representations be quite abstract. The arguments below in favor of surfacy representations also constitute arguments against this view of the origin of the long vowel in classes IV and V pret. pl. forms.

Wherever the pret. pl. in classes IV and V originated these considerations indicate that 'the Gmc. strong preterite is not a homogeneous development from one source, but a combination of several types' (Prokosch, 1939, p. 164). This is one indication that the strong verbs in OE started out fragmented to some degree. As will be indicated below classes VI and VII present further complications.

The passive participle[7] in the first three classes had the same form as the pret. pl. in Gmc. In classes IV and V instead of being completely reduced (as in I - III) the root vowel was 'schwa

secundum'. In Gmc. this IE sound became *u* before resonant consonants and *e* before obstruents. Thus, pass. part. forms had *u* in class IV and *e* in class V. The *u* which was present in the pass. part. stems of classes II, III, and IV was changed to *o* presumably due to the influence of the vowel in the pass. part. suffix.[8] The sound change was that *u* > *o* before mid and low vowels. 'There are, however, many exceptions in OE' (Campbell, p. 43). The fact that there are very few, if any, exceptions among the pass. part. forms of strong verbs will be discussed below.

For the purposes of this paper it is enough to quote Campbell concerning classes VI and VII. 'The verbs of Classes VI and VII are of a different type' (p. 305). The IE origins of the forms for these classes are not very clear at all (see Prokosch, §§60 - 62 for a

Table 2
Origin of the ablaut patterns: summary.

	pres.	pret. sg.	pret. pl.	pass. part.
Classes:				
I	*e-i>ī	*o-i>ai>ā	*ø-i>i	*ø-i>i
II	*e-u>ēo	*o-u>au>ēa	*ø-u>u	*ø-u>u>o
III	*e>e/_lO >eo/_rO >i/_NO	*o>a>ea/_LO >a/_NO	*øL>L>uL *øN>N>uN	*øL>L>uL>oL *øN>N>uN
IV	*e>e >i/_N	*o>a> æ >o/_N[1]	*ē>ǣ >ō/_N	*$_{þ}$R>uR>oR
V	*e>e	*o>a> æ	*ē>ǣ	*$_{þ}$O>eO
VI	*a	*ō	*ō	*a
Endings				
Sg. 1	*-ōm>-æ>-e	*-a>-ø		
2	*-isi>-st		*-es>-iz>-e	
3	*-i$_{þ}$i>-t	*-e>-ø		
pl.	*-an$_{þ}$i>-a		*-un >-un>-on	
part.				*-ono>-on> -an>-æn>-en
prefix				ge-

[1] ō by analogy.

O = obstruent consonants
L = liquid consonants
N = nasal consonants

discussion of the posibilities). Class VI verbs have two likely IE sources (1) thematic presents with suffix accent (also called 'aorist presents') and (2) 'weak presents' with a j-suffix as is common with weak verbs in OE. Class VII includes some vestiges of IE reduplication along with a number of verbs of uncertain etymology. The formal characteristics of the class VI and VII verbs include: (1) the pres. stem and the pass. part. normally have the same vowel, while the pret. sg. and pl. have the same vowel, (2) class VI has *ō* in the pret. sg. and pl., (3) class VII has either *ē* or *ēo* in the pret. sg. and pl. (4) the vowel of class VI pres. and pass. part. is *a* for a large number of cases but there is more variety here than in the pret. forms, (5) class VII pres. and pass. part. forms are most often in *ǣ, ā, ēa*.

Table 2 is a summary of this section which illustrates the point that OE ablaut was never a unified phenomenon. The Gmc. background of the strong verb forms was a mixture of several different patterns from IE. So, from the very beginning of OE there was not just one ablaut pattern but several.[9]

2.2 Further fragmentation within the classes

This section discusses further types of fragmentation which occur in the OE strong verbs. In table 3 which is a summary of this section 28 different ablaut patterns are listed.

Contract verbs in class I formed an alternate ablaut pattern to the usual one. When Gmc. [χ] occurred intervocalically it was deleted in OE. Thus, from the Gmc. present tense form **wrīhan* 'cover' (h=[χ]) OE has *wrēon* as the result of regular sound changes. This resulted in the ablaut pattern: *ēo ā i i*. Other class I verbs which have this pattern are: *lēon* 'grant', *þēon* 'thrive', *sēon* 'sieve', and *tēon* 'accuse'.

There is a fairly large set of verbs (13 out of 51 basic class II verbs in Borden, 1982) in class II which show a present in *ū* instead of the expected *ēo*. These verbs probably originally had a reduced grade present stem (Prokosch, § 58,b calls these aorist presents). Campbell suggests that the lengthening of *u* may have been by analogy with class I 'verbs with *ai* in the past had *ī* in the present system, those with *au* in the past might develop *ū* in the present system' (§ 736,b). At any rate, another ablaut pattern for class II verbs exists.

Class III is already represented by three different ablaut patterns according to the resonant following the stem vowel. To complicate matters a little more we also note that there are some aorist presents which are normally included in this class also (*spurnan*, 'spurn', *spearn, spurnon, sporneN*). Also, there is a set of verbs which were originally class V (with one post-root obstruent) but 'their presents were extended by the addition of a dental element, e.g. OE *streg-d-an* strew, *feoh-t-an* fight,

Table 3

Ablaut patterns in OE strong verbs,
from Levin (1964).

I	1a	ī	ā	i	i	bīdan	bād	bidon	biden	'await'
I	b	ēo	ā	i	i	wrēon	wrāh	wrigon	wrigen	'cover'
II	2a	ēo	ēa	u	o	bēodan	bēad	budon	boden	'command'
II	b	ū	ēa	u	o	brūcan	brēac	brucon	brocen	'use'
III	3a	i	a	u	u	bindan	band	bundon	bunden	'bind'
III	b	e	ea	u	o	helpan	healp	hulpon	holpen	'help'
III	c	eo	ea	u	o	weorpan	wearp	wurpon	worpen	'throw'
III	d	u	ea	u	o	spurnan	spearn	spurnon	spornen	'spurn'
III	e	e	æ	u	o	stregdan	strægd	strugdon	strogden	'strew'
IV	4a	e	æ	ǣ	o	beran	bær	bǣron	boren	'bear'
V	b	e	æ	ǣ	e	metan	mæt	mǣton	meten	'measure'
V	c	ēo	ea	ǣ	e	seon	seah	sǣgon	segen	'see'
V	d	i	æ	ǣ	e	biddan	bæd	bǣdon	beden	'pray'
VI	5a	a	ō	ō	a	faran	fōr	fōron	faren	'go'
VI	b	ēa	ō	ō	a	slean	slōg	slōgon	slagen	'strike'
VI	c	e	ō	ō	a	hebban	hōf	hōfon	hafen	'raise'
VI	d	ie	ō	ō	ea	scieppan	scōp	scōpon	sceapen	'create'
VI	e	æ	ō	ō	æ	st ppan	stōp	stōpon	stæpen	'step'
IV	f	u	ō	ō	u	cuman	cōm	cōmon	cumen	'come'
IV	g	i	ō	ō	u	niman	nōm	nōmon	numen	'take'
VII	6a	ā	ē	ē	ā	hatan	hēt	hēton	hāten	'call'
VII	b	æ	ē	ē	æ	lætan	lēt	lēton	læten	'let'
VII	c	ō	ē	ē	a	fōn	fēng	fēngon	fangen	'seize'
VII	7a	a	ēo	ēo	a	bannan	bēonn	bēonnon	bannen	'summon'
VII	b	ea	ēo	ēo	ea	fealdan	fēold	fēoldon	fealden	'fold'
VII	c	ā	ēo	ēo	ā	blāwan	blēow	blēowon	blāwen	'blow'
VII	d	ēa	ēo	ēo	ēa	bēatan	bēot	bēoton	bēaten	'beat'
VII	e	o	ēo	ēo	ō	blotan	blēot	blēoton	blōten	'sacrifice'

Traditional class identifications are given in the first column, followed by the reclassification suggested by Levin based on the preterite vocalism.

frig-n-an ask' (Campbell, § 736,b). Thus, new patterns are added for *stregdan (e,æ,u,o)*, and *frignan (i,æ,u,o)*.

The pattern *i,ō,ō,u* for the class IV verb *niman* 'take' can be derived from Table 2 (although not specifically discussed in the previous section). The aorist present verb *cuman* 'come' has almost the same pattern: *u,ō,ō,u*. Thus, two more ablaut patterns must be added to those already identified for class IV.

There are some contract verbs in class V which result in a different ablaut pattern (*sēon*, see, *seah, sægon, segen* or in Angl. *sēon, seah, sāwon, sewen*). There is also a set of weak presents which have present forms resembling class I weak verbs. Otherwise they have ablaut forms like normal class V verbs (*biddan*, 'ask, pray', *bæd, bǣdon, beden*).

These same two types of variation in ablaut are found in class VI verbs. Contract verbs such as *slēan*, 'slay' have a pattern different from the normal class VI ablaut pattern (*slēan*, slay, *slōg, slōgon, slagen*). There are also weak presents of three different types -- *hebban*, 'raise' has the pattern: *e,ō,ō,a; scieppan*, 'create' has the pattern: *ie,ō,ō,a*;[10] and *stæppan* 'step' has the pattern: *æ,ō,ō,æ*.[11]

Class VII verbs are divided into two basic categories according to the vocalism of the pret. forms (*ē* and *ēo*). There are three different patterns with pret. forms in *ē*, and five different patterns with pret. in *ēo*.

Table 3 is a collection of the different ablaut patterns which have been discussed in this section and the previous one. Levin (1964) chose to class the verbs by their pret. forms and so the traditional classes are spread out to some degree among Levin's classes. The degree to which speakers of OE made such identifications is unknown. The issue will be addressed briefly in section 4 below.

3. Lexicographical evidence concerning the strong verbs

In a survey of the strong verbs listed in Borden (1982) and their corresponding forms in Middle English (Stratmann and Bradley, 1891)[12] I found that they were productively used in word formation processes in OE and that they survived into ME at uniformly high rates.

Table 4 summarizes the results of this survey. The first row indicates the total number of verbs in each class listed in Borden(1982). The second row shows the number of these verbs which are not the result of derivational processes (ie. *helpan* 'help' vs. *āhelpan* 'support'). The percentage of the total which are underived forms (third row) indicates that although their absolute values are quite different all of the classes have roughly the same ratio of basic forms to derivations. These percentages indicate that there are approximately four derivations for every basic form in the strong verbs. This is evidence for a certain degree of productivity.

Table 4

Lexicographic evidence concerning OE strong verbs.

	I	II	III	IV	V	VI	VII	explanation
1.	283	270	423	100	171	192	290	Tot. # of verbs
2.	61	52	85	15	30	27	55	# of basic forms
3.	22%	19%	20%	15%	18%	14%	19%	% basic forms of tot.
4.	8	14	12	4	8	7	17	# of anom. basic fms
5.	13%	27%	14%	27%	27%	26%	31%	% anom. of basic fms
6.	42	40	60	11	22	21	42	# of basic fms in ME
7.	69%	77%	71%	73%	73%	78%	76%	% ME of basic fms

The fourth row in table 4 is the number of basic forms (as listed in the dictionary - ie. present tense form) which do not match the forms predicted by table 2. The percentage (row 5) of the total number of basic forms (row 2) which are anomalous in this sense indicates the degree of fragmentation. With the exception of classes I and III the percentage of each class which does not fit the basic description of the class is about 28%. This is an indication that the fragmentation discussed in section 2.2 is more than just an occasional exception to an otherwise overwhelmingly stable pattern.

Row six is the number of basic forms which came down to ME as strong verbs (as found in Stratmann and Bradley, 1891). In all cases the percentage of OE basic forms which survive into ME is quite high (row 7, $\bar{x}$=74%). This indicates that the fragmentation of OE strong verbs did not cause speakers to avoid using them. They do not seem to be particularly difficult for speakers.[13]

This survey of lexicographical evidence indicates then that although strong verbs were indeed fragmented to a substantial degree they were nevertheless included in word formation processes and were not abandoned over the period from OE to ME.

4. Evidence against abstractness

If the lexical representations of strong verbs were sufficiently abstract then the fragmentation which was demonstrated in section 2 would indicate nothing more about OE than that there were a number of interesting synchronic rules which caused the surface forms of strong verbs to have some variety. It is my claim in this paper that fragmentation resulted in variation in the lexical representations of strong verbs -- not just variation in their surface forms. In order to establish the claim that fragmentation results in changes in lexical representations it is necessary to show that the lexical representations involved are not abstract. There is a wealth of

evidence in the OE strong verbs which rules out abstract representations. Some of this evidence will be presented in this section.

4.1 Analogies

Lexical representations are the representations in memory of the words that speakers/hearers use. They are memories, and like other memories they have varying degrees of strength.[14] When our memory for a word is weak we may rely on the pattern of a similar word which is more clearly remembered.[15] This is analogy. The point is that analogy is from one lexical representation to another in this sense of 'lexical representation'.

There are some cases of analogy in the OE strong verbs (to be discussed below) in which surface forms such as those listed in table 3 are the basis for analogy. This indicates that the lexical representations for these forms are like their surface forms.

The analogical lengthening of the aorist present in class II (table 3, 2b) verbs in Gmc. has already been mentioned. Crucial to this analogy is that the class I present form is *ī* in the lexicon (*ai:ī::au:X*).

Also, the lengthening of *o* in pret. sg. in class IV verbs with post-vocalic nasals (table 3, 5f & g) has been attributed to analogy (in the note to table 2). There are two possible models for this analogy. If the class IV pret. pl. is the model this would indicate that (1) the sound change $\bar{e} > \bar{o}/\_N$ was a change in lexical representations, and (2) that the pret. pl. was a lexical representation - not derived form the pres. form. If the class VI pret. sg. served as the model for this analogy the lexical status of the pret. sg. form is indicated.

A variant which occurs beside *nōm* pret. sg. of *niman* (table 3, 5g) is *nam*. This variant 'is due to analogy of nasal verbs of class III' (Campbell, p. 313, n. 1). The formula: *bindan:band::niman:X* indicates once again that the pret. sg. (*band*) is stored in the lexicon.

There is a tendency for contract verbs of class I in *ēo* to shift to class II. Thus, *tēon* 'accuse' has *tēah, tugon* in addition to *tāh, tigon*. About four percent of the class I basic forms shifted to class II in this way. This analogy illustrates the sufficiency of surface identity (*ēo, ēo*) for the occurrence of analogy. It also illustrates the structural coherence of the ablaut pattern. The pattern is productive in the sense that it can be extended to new verbs in the class. Note also that it is the surface pattern that is extended.

Finally, the possibility of analogical forces involved in the form of the pass. part. in classes II,III, and IV should be mentioned. As was mentioned earlier the sound change lowering *u*

before a following mid or low vowel was somewhat erratic in application. (Note the exceptions: *ufan* 'over', *ufor* 'higher', *pusa* 'bag', *sugga* 'a kind of fish', and *tube* 'trumpet'.) The fact that it was not eratic in the case of the pass. part. of strong verbs may be an indication of analogy. The *o* vocalism may have taken on some grammatical/semantic value that helped the sound change take place in all pass. part. forms.[16] Once again, separate lexical representations (and non-abstract ones) are suggested by the evidence.

4.2 Non-application of sound changes

Breaking did not apply to *berstan* 'burst' or *þerscan* 'thresh'. These words were originally class V verbs formed by the addition of an infix with a dental consonant (*stregdan* was given earlier as an example). They have also undergone a metathesis. Thus, the Gmc. forms were **bres-t-* and *þre-sk-*.

The non-application of breaking could be taken quite simply as an indication of rule ordering. The derivations would be something like (2).

(2)

	/bres-t-an/	/þre-sk-an/
breaking	----	----
metathesis	berstan	þerscan

Campbell (§ 459,1) has metathesis in this case as *rV* > *Vr/_s* or *n*. Exceptions include: *hrespan* 'to strip, spoil', *cranic* 'record', *cranoc* 'crane', *cristalla* 'crystal', *bresne* 'mighty', *brȳsian* 'to do work in brass', *brastlian* 'to roar, rustle', *restan* 'to rest', *rendan* 'to rend', *scrind* 'swift course', *strand* 'sea-shore', *þrosm* 'smoke', *trandende* 'precipitous, steep', *trendon* 'to turn around', *þrines* 'Trinity', *þrintan* 'to swell', *þryscan* 'to wiegh down'.

The order of the 'rules' in (2) has a phonetically motivated 'low level' rule followed by a lexically specific 'high level' rule.[17] A simpler theory of phonology is possible if we treat breaking as a sound change which changed the lexical representations of the words to which it applied (ie. */werpon/* > */weorpan/* 'throw'). After this sound change had ceased to be active another sound change (metathesis) produced lexical representations which could have undergone breaking if they had existed when breaking was active.

Metathesis also affected the class III verb *brinnan* 'burn' which with metathesis had the forms: *birnan, barn, burnon, burnen* (Campbell, § 741 - compare table 3, 3a). In this case we expect breaking before *r* (like *weorpan*, table 3, 3c) but instead the ablaut pattern does not change at all. In addition to the non-application of breaking, the preservation of the effects of raising before a nasal consonant is interesting. This rule is

formalized by Lass & Anderson (1975, p. 29) as (3).

$$(3) \qquad \begin{matrix} V \\ -low \end{matrix} \text{ --> } +high \; / \; \_\_ +nasal$$

Thus, *bindan* and *brinnan* are derived from *bendan* and *brennan* respectively. The rule also blocks the application of back umlaut in the pass. part. forms *bunden* and *brunnen*. The stages of development for *birnan* were thus:

(4)	Gmc	bren-
	raising	brin-
	metathesis	birn-

As in the case of the interaction of breaking and metathesis, the historical order of these changes is not the preferred synchronic order. If the lexically specific 'higher level' rule (metathesis) is ordered before the 'lower level' phonetically motivated rule (raising), then metathesis would bleed raising, giving *bernan* instead of *birnan*. It seems preferable in this case to view raising before nasals as a sound change which had run its course before metathesis took place. In this view, (3) is not a synchronic process, but represents the lexicalized results of a sound change.[18] This is more clear evidence against abstract lexical representations.

4.3 Borrowing a Latin verb

Finally, the borrowing of the Lat. verb *scrībere* as a class I strong verb *scrīfan* 'decree' is evidence for the non-abstract representation of class I verbs. Here, as in several of the cases of analogy mentioned earlier, surface identity is enough to associate the verb with class I verbs with present stem vowel *ī*.[19] The borrowing also indicates the synchronic salience of the ablaut pattern, although the fact that this was the only verb borrowed into the strong verb system (while many were borrowed as weak verbs) is evidence of the tendency to generalize the weak verb pattern at the expense of the strong verb pattern.

5. Conclusion

Thus, the synchronic result of the fragmentation described in section 2 existed in the lexical representations of the words involved, not in morphological or phonological processes in the synchronic grammar of OE. The evidence presented in this paper is consistent with a view of language in which the lexicon (as words stored in memory) takes a central position. Although there is evidence (some of it presented in this paper) for the reality and potential for active use of patterns within the lexicon which might be described using process notation, the conclusion to which the evidence points is that these 'processes' are actually patterns in the lexicon. The appearance of behavior which indicates that some sort of association has been made (for instance, the analogy of class I verbs like *wrēon* with class II verbs like *bēodan*) cannot be taken as evidence for the existence of a morphological process. (In fact the evidence in this particular case indicates that a pattern

among some lexical items has been extended to some other lexical entries.)

The overall view of language sound systems which is indicated by the evidence in this paper is that language is rich in the lexicon and poor in the grammar - that most of the information needed to pronounce words is available in their representations in memory and that the modifications which they undergo between lexical retrieval and articulation are quite limited. Along with this view (and also indicated by the evidence presented here) is a view of sound change in which the lexicon is central. Sound change is seen as primarily change in lexical represention rather than grammar change. This view helps to explain why fragmentation occurs and why it is a common, even normal, situation: for each particular sound change some lexical representations have the appropriate conditions for change while others don't; therefore fragmentation can result from a series of sound changes.

Notes

*Many thanks to Brian Joseph. He is the one who told me that the only thing my paper needed was to be written, and his knowledge and eye for linguistic detail has saved me from some embarrassing mistakes. Some of my fellow students at Ohio State have also provided useful comments and valuable discussion -- Brad Getz, Peter Lasersohn, Joyce Powers, Jane Smirniotopoulous and Debbie Stollenwerk. Thanks also to the Crusaders for musical assistance.

[1]Janda and Joseph (1986) found that the synchronic result of fragmentation in Sanskrit reduplication was a rule-constellation, i.e. 'a group of formally similar morphological processes sharing at least one characteristic property of form but distinguished by individual formal idiosyncrasies which prevent their being collapsed with one another' (p. 104).

[2]The point is that speakers/hearers do not feel compelled to preserve generalizations in morphological processes. Fragmentation can be seen as replacing one generalization with several as the result of sound changes which obscure the original generalization. The fact that sound changes are not resisted when they threaten a generalization can be taken as evidence for one of two accounts of sound change. (1) The generalization is not really threatened because the lexical representations are abstract enough to preserve the general pattern, or (2) speakers/hearers do not need big generalizations, because little ones (particularized to sets of lexical items) will do just as well. This last view (which will be argued for in this paper) entails that lexical items are more important semiotically than are morphological processes.

[3]So Prokosch 1956 'essentially a direct continuation of the IE perfect tense.' The singular endings in Gmc. are reconstructed as: *-a, -tha, -e* (compare Grk. perfect forms οἶδα, οἶσθα, οἶδε). The 2sg. in W. Gmc. probably comes from a different IE source and will be considered in the next section with the pret. pl. forms.

[4]In W. Gmc. the pret. 2sg. form also has the ablaut vowel which appears in the pret. pl. forms.

[5]'It is tempting to assume, though not definitely demonstrable, that Prim. Gmc. *ǣ > ā* in the form of West Gmc. from which OE and OFris. were derived ... and that this *ā* was then subject to change in two directions, becoming *ā* before nasal consonants, *ǣ* (or *ē*) elsewhere. Such a double development of *ā* would be parallel to the OE and OFris. treatment of *a'* (Campbell, 129). *ā > ō* is also more phonetically plausible than *ǣ > ō*.

[6]According to this theory the long vowel is the result of a conflation of two syllables which result from reduplicaton (which is a typical marker of perfect forms in IE). 'Thus from the root *sed*, sit, the IE perf. pl. would be **sesed- > *sēsd- > *sēzd-* > Gmc. **sǣt-*' (Campbell, 1959, p. 305, n. 1).

[7]'It expresses pure passivity, not necessarily passivity in past time' (Campbell, 727).

[8]The pass. part. suffix in Gmc. was *-on*. The three other suffixes which occur on stems with *u* (pret. sg. *-iz*, pret. pl. *-unþ* and subj. pret. pl. *-inþ*) all had high vowels in Gmc. If the sound change (*u > o* before a low or mid vowel) occurred before these suffix vowels were lowered then the appropriate environment existed only for the pass. part.

[9]One has to wonder if any stage of any language can be found for which there is <u>not</u> evidence of fragmentation. Of course there can be local unity (ie. groups of lexical items which are treated similarly) but the trend seems always to be toward lexical specificity rather than morphological generality. From a diachronic perspective it seems to be fragmentation all the way down.

[10]*ie* in the present is the result of the influence of the palatal consonant *c*.

[11]*æ* in the present results from a failure of umlaut across the cluster *pp*. The pass. part. form may be due to analogy with the present.

[12]This dictionary is more concise than the OE dictionary that I used and so there may have been a bit higher rate of retention than I am reporting here. The concise dictionary was more convenient to use and gives a good general idea of retention rate.

[13]Moder(1986) seems to indicate that the vestiges of strong verb ablaut patterns are still salient and extendable.

[14]In this view of what a lexical representation is it would be surprising if there weren't lexical representations for all of the forms in a paradigm. This is because each separate form (as it is encountered in language use) is an event to be remembered. That the

memories of the forms in a paradigm are related to each other is a given. Exactly how this is done is a matter for future research. Also, note that this view of the lexicon is similar to Bybee's (1985, pp. 111 ff.) 'dynamic model'.

[15]The evidence presented in Esper (1973, chapter 6) indicates also that a pattern of relations among words can lead to the invention of new forms. He points out the necessity of treating both the analogical creation of new forms and the analogical revision of old ones as instances of the same type of process. As regards the conception of lexical representation which I am adopting here, I am sure that he would reject my 'subjective mentalism' and prefer to talk only about those aspects of language that are observable (ch. 7).

[16]This reinterpretation of o-vocalism as a marker of pass. part. is an instance of abductive change (Andersen, 1972).

[17]This order, if kept, would require a substantial revision of phonological theory.

[18]It could be salvaged as a synchronic rule by complicating it with an optional *r* between the vowel and the nasal. However, counterexamples of this revision can be found from *forma* 'first' to *terma* 'end'.

[19]This raises the whole issue of speech perception with abstract representations. The counter-argument to my claim here is that upon hearing Lat. *scrībere* OE hearers 'heard' /screib-/ and thus identified the verb as class I. The problem with this is that with abstract lexical representations OE hearers had to sometimes 'hear' [ī] as /ei/ and sometimes as /ī/. Now, if they had a paradigm for *scrībere* in which there was evidence for a stem like /scr_ib-/ it might be possible to claim that they 'heard' /ei/ in the present tense. In the absence of such evidence we must assume that they 'heard' /ī/ and thus that their lexical representations for class I verbs also had /ī/.

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