THE OLD ENGLISH STRONG VERBS AND SOUND CHANGES RELEVANT TO THEM

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1. INTRODUCTION

Old English parts of speech comprise two main groupings, the strong (athematic) and the weak (thematic). As regards verbs, Old English has two types of verbs – Strong and Weak. The strong verbs form their preterit and past participle by means of ablaut. The weak verbs form their preterit by the addition of a syllable containing a dental, and their past participle by means of a dental suffix.

The Old English verb has the following independent forms:

a. two tenses--present and preterit. Other tenses are either expressed periphrastically or are understood contextually;

b. indicative, subjunctive, and imperative moods, in addition to infinitives and participles;

c. two numbers–singular and plural;

d. three persons, but only in the singular of the present and preterit indicative. All plurals and the singular of the subjunctives are the same throughout;

e. one voice only--the active. Except for the only verb hātan, which has a passive form hātte, verbs in Old English have only an active voice.

1.1 Principal Parts of the Strong Verbs. The principal parts of a strong verb are: (1) the infinitive, (2) the preterit indicative first person singular, (3) the preterit indicative plural, (4) the past participle. Following are the principal parts of drīfan, 'drive'; bēodan, 'command'; singan, 'sing':

drīfan	drāf	drifon	drifen
bēodan	bēad	budon	boden
singan	sang	sungon	sungen

The personal endings of the preterit indicative of strong verbs are as follows:

Sing. 1 --

    2 - e   Plur 1, 2, 3   -on

    3 --

The conjugation of the preterit indicative of drīfan and singan is as follows:

Sing. 1 (iċ) drāf, 'I drove' Plur.   1 (wē) drifon, 'we drove'

    2 (ðū) drife, 'thou drovest'   2 (gē) drifon, 'you drove'

    3 (hē) drāf, 'he drove'   3 (hīe) drifon, 'they drove'

Sing. 1 (iċ) sang, 'I sang' Plur.   1 (wē) sungon, 'we sang'

    2 (ðū)sunge, 'thou sangest'   2 (gē) sungon, 'you sang'

    3 (hē) sang, 'he sang'   3 (hīe) sungon, 'they sang'

    1.2 Scope. This paper proposes to deal with an analysis and description of the phonology of Old English. Since the complete and detailed explanation for the sound changes and vowel shiftings occurring in the Old English period is a task of great magnitude, its contents are limited to studying the sound changes relevant to the principal parts of the strong verbs through the theory of generative phonology. Some rules will be worked out so as to transform the phonological deep structure into the phonetic surface structure of the Old English strong verbs. Old English has been regarded as a dead language, so the only material available is a corpus of written utterances.

    1.3 A Reclassification of the Old English Strong Verbs. The Old English strong verbs are traditionally classified into seven classes according to the historical considerations of original ablaut variation and reduplication. However, disregarding the strictly historical criterion of classification and using synchronic features as criteria, Levin (1964) proposes a much more adequate and simple system of strong verb classification. He reclassifies them according to the particular distribution of resonants and consonants in the original root structure, and ablaut alternation.

    The new classification, like the old, comprises seven classes. The criterion for class assignment is the vocalism of the preterit. The reclassification Levin (1964:159) proposes is listed as follows:

1a	ī	ā	i	i	bīdan	bād	bidon	biden	'await'
b	ēo	ā	i	i	wrēon	wrāh	wrigon	wrigen	'cover'
2a	ēo	ēa	u	o	bēodan	bēad	budon	boden	'command'
b	ū	ēa	u	o	brūcan	brēac	brucon	brocen	'use'
3a	i	a	u	u	bindan	band	bundon	bunden	'bind'
b	e	ea	u	o	helpan	healp	hulpon	holpen	'help'

c	eo	ea	u	o	weorpan	wearp	wurpon	worpen	'throw'
d	u	ea	u	o	spurnan	spearn	spurnon	spronen	'spurn'
e	e	æ	u	o	stregdan	strægd	strugdon	strogden	'strew'
4a	e	æ	ǣ	o	beran	bær	bǣdon	boren	'bear'
b	e	æ	ǣ	e	metan	mæt	mǣton	meten	'measure'
c	ēo	ea	ǣ	e	seon	seah	sǣgon	segen	'see'
d	i	æ	ǣ	e	biddan	bæd	bǣron	beden	'pray'
5a	a	ō	ō	a	faran	fōr	fōron	faren	'go'
b	ēa	ō	ō	a	slean	slōg	slōgon	slagen	'strike'
c	e	ō	ō	a	hebban	hōf	hōfon	hafen	'raise'
d	ie	ō	ō	ea	scieppan	scōp	scōpon	sceapen	'create'
e	æ	ō	ō	æ	stæppan	stōp	stōpon	stæpen	'step'
f	u	ō	ō	u	cuman	cōm	cōmon	cumen	'come'
g	i	ō	ō	u	niman	nōm	nōmon	numen	'take'
6a	ā	ē	ē	ā	hatan	hēt	hēton	haten	'call'
b	ǣ	ē	ē	ǣ	lætan	lēt	lēton	lætan	'let'
c	ō	ē	ē	a	fōn	fēng	fēngon	fangen	'seize'
7a	a	ēo	ēo	a	bannan	bēonn	bēonnon	bannen	'summon'
b	ea	ēo	ēo	ea	fealdan	feold	feoldon	fealden	'fold'
c	ā	ēo	ēo	ā	blawan	blēow	blēowon	blawen	'blow'
d	ēa	ēo	ēo	ēa	beatan	bēot	bēoton	beaten	'beat'
e	ō	ēo	ēo	ō	blotan	blēot	blēoton	bloten	'sacrifice'

By this criterion, the system falls into two divisions: in the first (1-4) the vowel of the preterit is different in the singular and the plural; in the second (5-7) it is the same. The vowels of the preterit, for the revised classes, are shown in the following: (The forms strægd, strugdon of 3e, and seah, sǣgon of 4c fall outside this scheme.)

1	ā	i	5	ō	ō
2	ēa	u	6	ē	ē
3	a/ea	u	7	ēo	ēo
4	æ	æ			

The Old English strong verbs in this paper is based on Levin's reclassification system. Levin (1964:161) assumes

The use of vowel gradation as the primary criterion, with root structure a subsidiary marker, greatly simplifies the system. By modifying the role of root structure as a class index, and by abandoning reduplica-

tion altogether, we achieve classes much more uniformly differentiated. There is little motivation, aside from diachronic considerations, for separating beran and metan, cuman and faran, verbs with such similar vocalism in their paradigms; at this point the traditional classification is overdifferentiated. On the other hand, only their common origin as reduplicatives could justify grouping in one class verbs with such different vocalism as hatan, het and blotan, bleot; this is a clear case of underdifferentiation. The reclassification, by disregarding historical differences and focusing on synchronic evidence, presents a system of Old English strong verbs which is properly motivated; the result is neater and more adequate than the traditional scheme.

2. SOUND CHANGES

2.1 Consonants. Most of the consonant changes concerning the Old English strong verbs can be described as follows:

(1) Grimm's Law

Grimm's law is an explanation of the changes occurring between consonants in the early Indo-European languages and the Teutonic or Germanic languages. It demonstrates that the Indo-European voiced aspirates, bh, dh, gh become respectively Germanic b, ð, g and later, in initial position at least, b, d, g. Then the Indo-European voiceless p, t, k, become respectively the voiceless spirants f, θ, x (later h in initial position) except when preceded by s. Finally, the voiced stops b, d, g become respectively the voiceless stops p, t, k.

a. Grimm's Law I: $\begin{bmatrix} -\text{cont} \\ +\text{asp} \\ +\text{voice} \end{bmatrix} \longrightarrow \begin{bmatrix} +\text{cont} \\ +\text{voice} \end{bmatrix}$

b. Grimm's Law II: $\begin{bmatrix} -\text{cont} \\ -\text{voice} \end{bmatrix} \longrightarrow [+\text{cont}] \ / \ \left\{ \begin{matrix} \# \\ [+\text{voice}] \end{matrix} \right\} \underline{\hspace{2cm}}$

c. Grimm's Law III: $\begin{bmatrix} -\text{cont} \\ +\text{voice} \end{bmatrix} \longrightarrow [-\text{voice}]$

d. Grimm's Law IV: $\begin{bmatrix} +\text{cont} \\ +\text{voice} \end{bmatrix} \longrightarrow [-\text{cont}]$

(2) Verner's Law

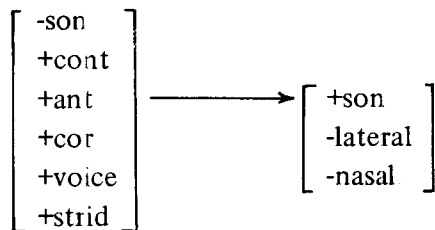In 1874, Karl Verner gave an explanation of certain exceptions to Grimm's

Law. The Law states that Germanic voiceless spirants remained voiceless if the preceding syllable had the Indo-European accent, but became voiced in voiced surroundings if the preceding syllable had been unstressed in Indo-European times. For example, in Old English, the singular of the preterit tense of cweθan 'to stay' is ic cwaeθ, but the plural is we cwaēdon. Originally the accent was on the ending in the latter from, as in the past participle, cweden, where a d is also found. These interchanges between voiceless and voiced spirants often denote distinctions between different grammatical forms of the same root. The phenomenon is known as grammatical change which is responsible for the consonantal shifts in the last two principal parts of the Old English strong verbs.

a. Verner's Law I: $[+cont] \longrightarrow [+voice]$ / $\begin{bmatrix} V \\ -stress \end{bmatrix}$ $\underline{\quad\quad}$ $[+voice]$

b. Verner's Law II: $[+cont] \longrightarrow [+voice]$ / $\begin{bmatrix} \text{------------} \\ \begin{Bmatrix} +past\ part \\ +past\ plural \end{Bmatrix} \end{bmatrix}$

(3) Rhotacism
The shift from intervocalic voiced /z/ to /r/ is characteristic of both Latin and most of the Germanic languages.

$$\begin{bmatrix} -son \\ +cont \\ +ant \\ +cor \\ +voice \\ +strid \end{bmatrix} \longrightarrow \begin{bmatrix} +son \\ -lateral \\ -nasal \end{bmatrix}$$

(4) Intervocalic consonantal voicing
A consonant is voiced when it occurs between two vowels.

$$\begin{bmatrix} +cons \\ -son \end{bmatrix} \longrightarrow [+voice] \ / \ \begin{bmatrix} +syl \\ -cons \end{bmatrix} \underline{\quad} \begin{bmatrix} +syl \\ -cons \end{bmatrix}$$
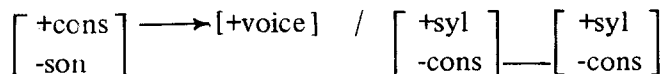
(5) Consonant doubling
All single consonants are doubled after a short vowel before a following j. This j is generally dropped in Old English.

$$\begin{bmatrix} +cons \\ \alpha \end{bmatrix} \rightarrow \begin{bmatrix} +cons \\ \alpha \end{bmatrix} \quad \begin{bmatrix} +cons \\ \alpha \end{bmatrix} \quad / \quad \begin{bmatrix} +syl \\ -cons \\ -long \end{bmatrix} \longrightarrow \begin{bmatrix} -cons \\ -syl \\ -back \\ +high \end{bmatrix}$$

where α = feature environment of [+cons]

(6) Loss of consonants

    (a) Loss of intervocalis χ (h)

        Medial χ (h) disappears between vowels.

$$\chi \longrightarrow \phi \quad / \quad \begin{bmatrix} +syl \\ -cons \end{bmatrix} \underline{\hspace{2cm}} \begin{bmatrix} +syl \\ -cons \end{bmatrix}$$

    (b) Loss of the phoneme /j/

        Germanic medial j disappears after syllables which become long by the West Germanic gemination of consonants.

$$/j/ \longrightarrow \phi \quad / \quad \begin{bmatrix} +cons \\ \alpha \end{bmatrix} \quad \begin{bmatrix} +cons \\ \alpha \end{bmatrix} \underline{\hspace{2cm}}$$

(7) /bb/ alternates with /f/

The phoneme /b/ contrasts with /f/ only in initial position. In medial and final positions except after nasals only /f/ occurs, after nasals only /b/.

    /bb/ ⟶ /f/ in medial or final position.

(8) Extension of Verner's Law

For Old English, the following interchanging pairs of consonants due to Verner's Law are listed:

a. h or loss of h (=prim. Germ. x)—g   } the same as
b. h or loss of h (=prim. Germ. xw)—g,w (=prim. Germ. g̲w) } Verner's Law
c. h or loss of h (=prim. Germ. ŋx)—ng. (Only used in the sound changes of
                                            some contracted verbs.

(9) Identical consonant reduction

$$\begin{bmatrix} +cons \\ \alpha_1 \end{bmatrix} \begin{bmatrix} +cons \\ \alpha_2 \end{bmatrix} + \begin{bmatrix} +syl \\ -cons \end{bmatrix} \begin{bmatrix} +con \\ +cor \\ +nasal \end{bmatrix} \rightarrow \begin{bmatrix} +cons \\ \alpha_1 \end{bmatrix} + \begin{bmatrix} +syl \\ -cons \end{bmatrix} \begin{bmatrix} +cons \\ +cor \\ +nasal \end{bmatrix}$$

where $\alpha_1 = \alpha_2$, + = stem boundary

(10) lθ (West Gmc.) becomes ld (OE).

In West Gmc. medial $\underline{l\theta}$ becomes $\underline{ld}$, and final $\underline{l\theta}$ becomes replaced in OE by $\underline{ld}$ from inflected forms.

$$
\begin{bmatrix} +son \\ +ant \\ -nasal \end{bmatrix}
\begin{bmatrix} +ant \\ +cor \\ +cont \\ -voice \\ -strid \end{bmatrix}
\longrightarrow
\begin{bmatrix} +son \\ +ant \\ -nasal \end{bmatrix}
\begin{bmatrix} +ant \\ +cor \\ -cont \\ +voice \\ -nasal \end{bmatrix}
\Big/
\begin{bmatrix} +syl \\ -cons \end{bmatrix} \underline{\qquad} +
$$
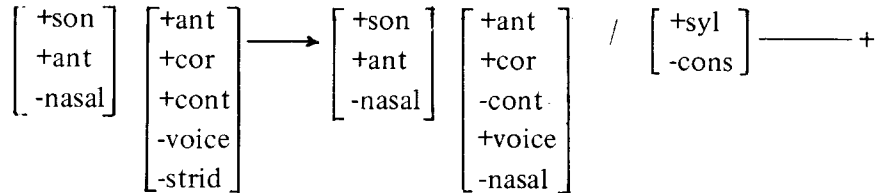
2.2 **Practical applications.** The infinitive inflection in Old English is marked uniformly by -an affixed to the nonpast root form. The root syllables of the strong verbs experience vowel mutation in the preterit tense, and often shift their vowels even in the present tense. The strong verbs form their past participle in -en. The derivations of each infinitive form concerning the consonant changes listed in the Levin reclassification chart can be stated by the above-mentioned rules.

1b. wrēon 'cover', derived form wrīhan (Goth)

Inf.	UR (Underlying representation)	wrīh + an
	Breaking	wrēoh + an
	Loss of /h/	wrēo + an
	Vowel contration	wrēon
	SR (Surface representation)	wrēon

Ist Pret.	UR	wrVh + an	
	Inf. suffix delation		wrVh
	SR	wrVh (=wrāh)	

2nd Pret.	UR	wrVh + on
	Verner's Law II	wrVg + on
	SR	wrVgon (=wrigon)

Past Ptc.	UR	wrVh + en
	Verner's Law II	wrVg + on
	SR	wrVgen (=wrigen)

4c sēon 'see', derived from sehan (OHG)

Inf.	UR	seh+an	1st Pret.	UR	sVh+an
	Breaking	seoh+an		Inf. suffix deletion	sVh
	Loss of /h/	seo+an		SR	sVh (=seah)
	Vowel contraction	sēon			
	SR	sēon			
2nd Pret.	UR	sVh+on	Past Ptc.	UR	sVh+en
	Verner's Law II	sVg+on		Verner's Law II	sVg+en
	SR	sVgon (=sǣgon)		SR	sVgen (=segen)

5b. slēan 'strike', derived from slæhan (Goth)

Inf.	UR	Slæh+an
	Breaking	sleah+an
	Loss of /h/	slea+an
	Vowel contraction	slēan
	SR	slēan

1st	Pret. UR	slVh+an
	Inf. suffix deletion	slVh
	Verner's Law I	slVg̣
	Grimm's IV	slVg
	SR	slVg̣ (=slōg)

slōh is another pret. form of the verb.

2nd	Pret. UR	slVh+on
	Verner's II	slVg+on
	SR	slVgon (=slōgon)

Past	Ptc. UR	slVh+en
	Verner's II	slVg+en
	SR	slVgen (=slagen)

From the above three examples, it stands to reason that a verb with internal g frequently has -h in the preterit singular.

5c. hebban 'raise', derived from hafjan (Goth)

Inf.	UR	hafj+an
	i-umlaut	hafj+an
	Verner's Law I	heƀj+an
	Consonant doubling	heƀƀj+an
	Loss of /j/	heƀƀ+an
	Grimm's Law IV	hebb+an
	SR	hebban

Ist	Pret. UR	hVbb+an
	Inf. suffix deletion	hVbb
	/bb/ alternates with /f/	hVf (=hōf)

2nd	Pret. UR	hVbb+on
	/bb/ alternates with /f/	hVf+on
	SR	hVfon

Past	Ptc. UR	hVbb+en (=hōfon)
	/bb/ alternates with /f/	hVf+en
	SR	hVfen (=hafen)

6c. fōn 'seize', derived from faŋχan (Prim. Germ.)

Inf.	UR	faŋx+an
	Loss of /x/	fa+an
	Vowel contraction	fān
	Back vowel raising	fōn

1st Pret.	UR	fVŋx+an	
	Inf. suffix deletion		fVŋ x
	Extention of Verner's Law		fVng
	SR	fVng	(=fēng)

2nd Pret.	UR	fVŋx+on	
	Extention of Verner's Law	fVng+on	
	SR		fVngon (=fēngon)

Past Ptc.	UR	fVŋx+en	
	Extention of Verner's Law	fVng+en	
	SR		fVngen (=fangen)

7b. fealdan 'fold', derived from falθan (Goth)

Inf.	UR	falθ+an
	Breaking	fealθ+an
	lθ becomes ld	feald+an
	SR	fealdan

In order to account for other phonological rules, the verbs like sniðan 'cut' and ċēosan 'choose' are cited as examples.

	Inf.	1st Pret.	2nd Pret.	Past Ptc.
UR	snVt+an	snVt	snVt+on	snVt+en
Grimm's Law II	snVθ+an	snVθ	snVθ+on	snVθ+en
Verner's Law I	-----	-----	snVð +on	snVð +an
Grimm's IV	-----	-----	snVd+on	snVd+en
Intervocalic voicing	snVð +an	-----	----	----
SR	snVð an (=sniðan)	snVθ (=snāθ)	snVdon (=snidon)	snVden (=sniden)

	Inf	1st Pret.	2nd Pret.	Past Ptc.
UR	ċVs+an	ċVas	cVs+on	cVs+en
Verner's Law I	----	----	cVz+on	cVz+en
Rhotacism	----	----	cVr+on	cVr+en
SR	ċVsan (=ceosan)	ċVas (=ċēas)	cVron (=curon)	cVren (=coren)

It is worth noting that Verner's Law forms occur in the following verbs, similar to the sound changes above.
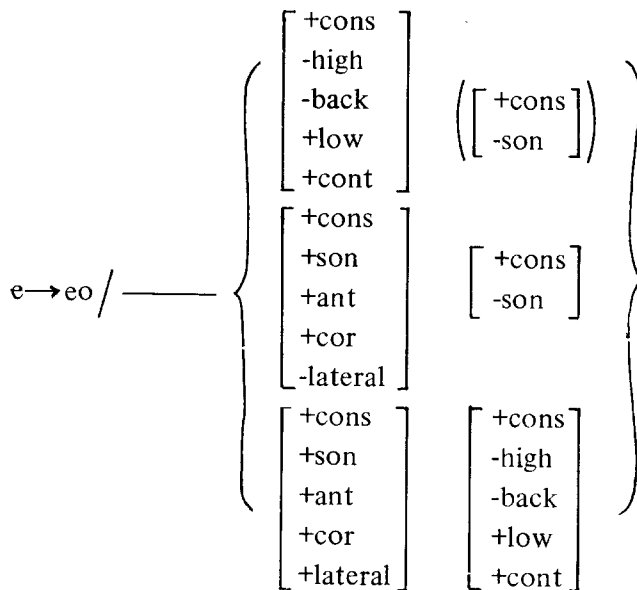
līean 'go', drēosan 'fall', frēosan 'freeze', hrēosan 'fall',

lēosan 'lose', sēoθan 'boil', weorθan 'become',

fēolan 'press on', cweθan 'say', lēon 'lend',

tēon 'accuse', wrēon 'cover', flēon 'flee', lēan 'blame',

slēan 'strike', sēon 'see', fōn 'seize', hōn 'hang'

There are a number of exceptions to Verner's Law -- the following verbs without Verner's Law forms where they might be excepted.

rīsan 'rise', mīθan 'avoid', wrīeθan 'to twist', ābrēoθan 'to ruin'

2.3 Vowels. To understand the variations in the strong verbs, we need to know something about certain vowel sound changes occurring within the Old English period. I propose to display some alternations and provide an explanation for the variations.

(1) Breaking: the diphthongization of a front vowel

a. before h, h+cons., lh

$$
e \rightarrow eo \Big/ \text{\rule{1cm}{0.4pt}} \left\{ \begin{matrix} \begin{bmatrix} +cons \\ -high \\ -back \\ +low \\ +cont \end{bmatrix} & \left(\begin{bmatrix} +cons \\ -son \end{bmatrix} \right) \\ \begin{bmatrix} +cons \\ +son \\ +ant \\ +cor \\ -lateral \end{bmatrix} & \begin{bmatrix} +cons \\ -son \end{bmatrix} \\ \begin{bmatrix} +cons \\ +son \\ +ant \\ +cor \\ +lateral \end{bmatrix} & \begin{bmatrix} +cons \\ -high \\ -back \\ +low \\ +cont \end{bmatrix} \end{matrix} \right\}
$$

b before h, h+cons., r+cons. 1+cons

$$
\text{æ} \rightarrow \text{ea} \Big/ \underline{\quad\quad}
\left\{
\begin{array}{l}
\begin{bmatrix} +\text{cons} \\ -\text{high} \\ -\text{back} \\ +\text{low} \\ +\text{cont} \end{bmatrix}
\left(\begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix} \right) \\[2em]
\begin{bmatrix} +\text{cons} \\ +\text{son} \\ +\text{ant} \\ +\text{cor} \\ -\text{lateral} \end{bmatrix}
\begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix} \\[2.5em]
\begin{bmatrix} +\text{cons} \\ +\text{son} \\ +\text{ant} \\ +\text{cor} \\ +\text{lateral} \end{bmatrix}
\begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix}
\end{array}
\right\}
$$

c. before h and h+cons

$$
\bar{\text{i}} \rightarrow \bar{\text{io}} \rightarrow \text{very often } \bar{\text{eo}} \Big/ \underline{\quad\quad\quad}
\begin{bmatrix} +\text{cons} \\ -\text{high} \\ -\text{back} \\ +\text{low} \\ +\text{cont} \end{bmatrix}
\left(\begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix} \right)
$$

(2) Vowel contraction: Loss of /h/ and compensatory lengthening vowel contraction took place in OE when intervocalic h̲ had disappeared. A long vowel or a long diphthong absorbed a following short vowel.

$$
\begin{bmatrix} +\text{cons} \\ -\text{high} \\ -\text{back} \\ +\text{low} \\ +\text{cont} \end{bmatrix}
\begin{bmatrix} -\text{cons} \\ +\text{syl} \end{bmatrix}
\longrightarrow \phi \Big/
\begin{bmatrix} -\text{cons} \\ +\text{syl} \\ +\text{long} \end{bmatrix}
\left(\begin{bmatrix} -\text{cons} \\ +\text{syl} \end{bmatrix} \right)
\underline{\quad\quad}
\begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix}
$$
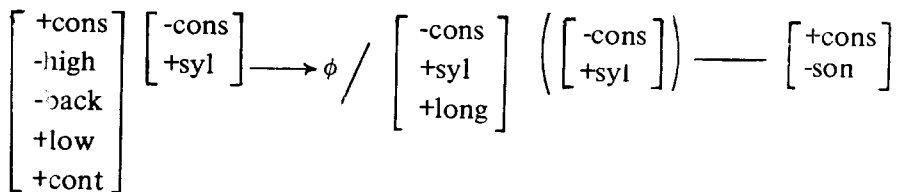
(3)   Vowel-height assimilation

A process of height assimilation takes place between the second (non-syllabic) element of the diphthong and the first.

$$\begin{bmatrix} -cons \\ +syl \end{bmatrix} \longrightarrow [\alpha\ high] \quad / \quad \underline{\hspace{2cm}} \begin{bmatrix} -cons \\ -syl \\ \alpha\ high \end{bmatrix}$$

(4)   The vocalization of semivowels

Semivowels are vocalized in certain contexts.

$$\begin{bmatrix} -cons \\ -syl \end{bmatrix} \longrightarrow \begin{bmatrix} -cons \\ +syl \end{bmatrix} \quad / \quad \begin{bmatrix} +cons \\ -son \end{bmatrix} \left(\begin{bmatrix} -con \\ +syl \end{bmatrix} \right) \underline{\hspace{1cm}} \begin{bmatrix} +cons \\ -son \end{bmatrix}$$

(5)   Lengthening

Vowels are lengthendd by the elimination of semivowels.

$$\begin{bmatrix} -cons \\ +syl \end{bmatrix} \qquad \begin{bmatrix} -cons \\ -syl \end{bmatrix} \longrightarrow \begin{bmatrix} -cons \\ +syl \\ +long \end{bmatrix}$$

(6)   High vowel-lowering

The high vowels are lowered one degree of middle if followed by a consonant except nasals, and a vowel.

$$\begin{bmatrix} -cons \\ +syl \\ +high \end{bmatrix} \longrightarrow \begin{bmatrix} -cons \\ +syl \\ -high \\ -low \end{bmatrix} \quad / \quad \underline{\hspace{1cm}} \begin{bmatrix} +cons \\ -son \end{bmatrix} \begin{bmatrix} -cons \\ +syl \end{bmatrix}$$
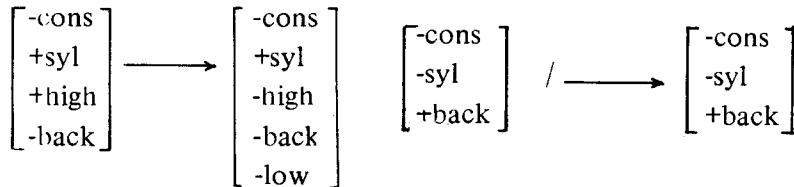
(7)   Fronting.

By this rule, low back vowels are moved to a low front position.

$$\begin{bmatrix} -cons \\ +syl \\ +back \\ +low \end{bmatrix} \longrightarrow [-back]$$

(8) i $\longrightarrow$ ew / ——— w

$$
\begin{bmatrix} -\text{cons} \\ +\text{syl} \\ +\text{high} \\ -\text{back} \end{bmatrix} \longrightarrow \begin{bmatrix} -\text{cons} \\ +\text{syl} \\ -\text{high} \\ -\text{back} \\ -\text{low} \end{bmatrix} \quad \begin{bmatrix} -\text{cons} \\ -\text{syl} \\ +\text{back} \end{bmatrix} \quad / \longrightarrow \begin{bmatrix} -\text{cons} \\ -\text{syl} \\ +\text{back} \end{bmatrix}
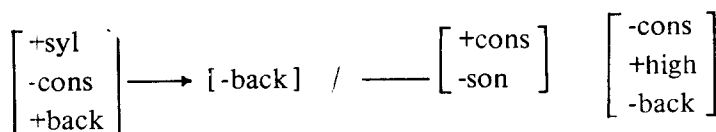$$

(9) l > ul, r > ur, m > um, n > un, l > lu, r > ru, m > mu, n > nu

This rule means in Old English a liquid may become the vowel u immediately followed by a liquid, or a liquid followed by u.[1]

$$
\begin{bmatrix} +\text{cons} \\ +\text{son} \\ \left\{ \begin{bmatrix} +\text{cor} \\ +\text{cont} \end{bmatrix} \right\} \\ \begin{bmatrix} +\text{ant} \\ -\text{cont} \end{bmatrix} \end{bmatrix} \longrightarrow \left(\begin{array}{c} \begin{bmatrix} -\text{cons} \\ +\text{syl} \\ +\text{back} \\ +\text{high} \end{bmatrix} \begin{bmatrix} +\text{cons} \\ +\text{son} \\ \left\{ \begin{bmatrix} +\text{cor} \\ +\text{cont} \end{bmatrix} \right\} \\ \begin{bmatrix} +\text{ant} \\ -\text{cont} \end{bmatrix} \end{bmatrix} \\ \\ \begin{bmatrix} +\text{cons} \\ +\text{son} \\ \left\{ \begin{bmatrix} +\text{cor} \\ +\text{cont} \end{bmatrix} \right\} \\ \begin{bmatrix} +\text{ant} \\ -\text{cont} \end{bmatrix} \end{bmatrix} \begin{bmatrix} -\text{cons} \\ +\text{syl} \\ +\text{back} \\ +\text{high} \end{bmatrix} \end{array} \right) \Bigg/ \longrightarrow \begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix}
$$
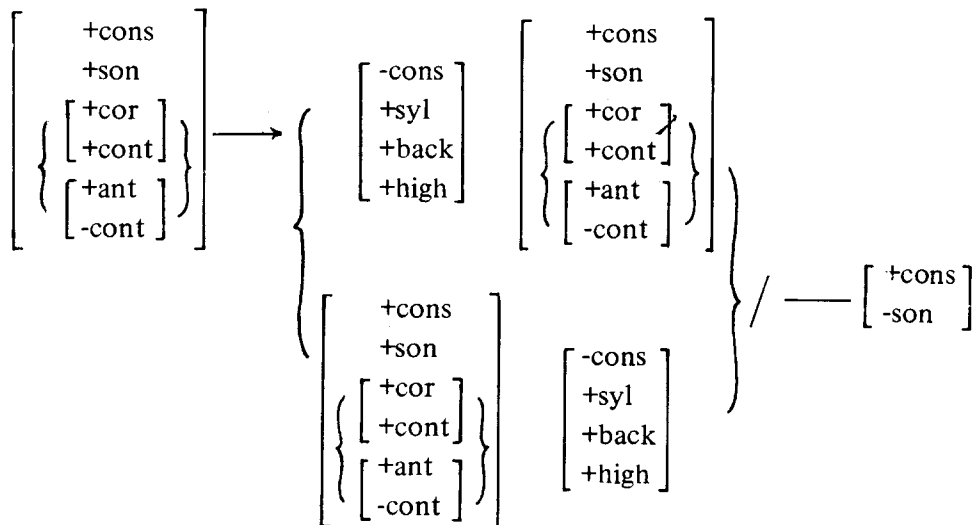
(10) I-umlaut (front mutation)

The term 'umlaut' in Modern English derives from the German um meaning 'about' and laut, signifying 'sound'. I-umlaut is a change in quality of an accented vowel by an i or j (=y) in the following syllable.

$$
\begin{bmatrix} +\text{syl} \\ -\text{cons} \\ +\text{back} \end{bmatrix} \longrightarrow [-\text{back}] \quad / \longrightarrow \begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix} \begin{bmatrix} -\text{cons} \\ +\text{high} \\ -\text{back} \end{bmatrix}
$$

(11) Palatal diphongization

If ġ, ċ, or sċ precedes the front vowels e, æ or ǣ, a glide develops between the consonant and the vowel which then coalesces with the original vowel to form the diphthongs ie, ea and ēa respectively.

$$
\begin{bmatrix} -\text{cons} \\ +\text{syl} \\ -\text{back} \end{bmatrix} \longrightarrow \begin{bmatrix} -\text{cons} \\ -\text{syl} \end{bmatrix} \quad \begin{bmatrix} -\text{cons} \\ +\text{syl} \\ -\text{back} \end{bmatrix} \quad / \quad \begin{bmatrix} -\text{son} \\ -\text{ant} \end{bmatrix} \underline{}
$$

(12) Restoration of <u>a</u>

æ becomes <u>a</u> if followed by a single consonant and a back vowel.

$$
\begin{bmatrix} -\text{cons} \\ +\text{syl} \\ -\text{back} \\ +\text{low} \end{bmatrix} \longrightarrow [+\text{back}] \quad / \underline{} \begin{bmatrix} +\text{cons} \\ -\text{son} \end{bmatrix} \begin{bmatrix} -\text{cons} \\ +\text{syl} \\ +\text{back} \end{bmatrix}
$$

(13) e > ǣ, a > ō

$$
\begin{bmatrix} -\text{cons} \\ +\text{syl} \\ \alpha\,\text{low} \\ \alpha\,\text{back} \\ -\text{high} \\ -\text{round} \end{bmatrix} \longrightarrow \begin{bmatrix} \beta\,\text{low} \\ \alpha\,\text{round} \\ +\text{long} \end{bmatrix} \quad / \underline{} \begin{bmatrix} \beta\,\text{son} \\ +\text{cons} \end{bmatrix}
$$

(14) Nasal-raising: Mid vowels are raised to the height position by the influence of nasals.

$$
\begin{bmatrix} -\text{cons} \\ +\text{syl} \\ -\text{high} \\ -\text{low} \end{bmatrix} \longrightarrow [+\text{high}] \quad / \underline{} \begin{bmatrix} +\text{cons} \\ +\text{son} \\ +\text{nasal} \end{bmatrix}
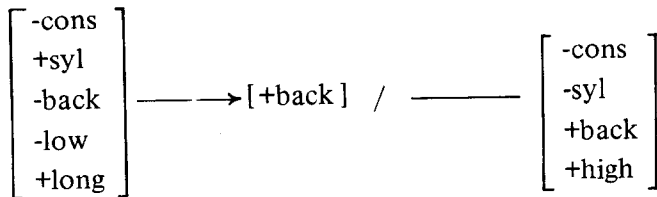$$

(15) Front vowel raising

$$
\begin{bmatrix} -\text{cons} \\ +\text{syl} \\ +\text{low} \\ +\text{long} \\ -\text{back} \end{bmatrix} \longrightarrow [-\text{low}]
$$

(16) Back vowel raising

$$
\begin{bmatrix} -\text{cons} \\ +\text{syl} \\ +\text{low} \\ +\text{back} \\ +\text{long} \end{bmatrix} \longrightarrow \begin{bmatrix} -\text{low} \\ +\text{round} \end{bmatrix}
$$

(17) ǣ becomes ā before /w/

$$
\begin{bmatrix}
-\text{cons} \\
+\text{syl} \\
-\text{back} \\
-\text{low} \\
+\text{long}
\end{bmatrix}
\longrightarrow [+\text{back}] \;/\; \underline{\hspace{2cm}}
\begin{bmatrix}
-\text{cons} \\
-\text{syl} \\
+\text{back} \\
+\text{high}
\end{bmatrix}
$$

2.4 Practical applications. Based on the languages such as Gothic, a phonological motivation for the root vowel preceding the Inf. Pret, Part-forming suffixes can be postulated. The following table abstracted from Wright (1914:28) contains the normal development of the vowel-system in Goth. and OE. root-syllables:

P. Germ.	a	e	i	o	u	ā	ǣ	ē	ī	ō	ū	ai	au	eu	iu
Goth	a	i	i	u	u	ā	ē	ē	ei	ō	ū	ái	áu	iu	iu
OE	æ	e	i	o	u	ō	ǣ	ē	ī	ō	ū	ā	ēa	ēo	īo

For the purpose of dealing with the ablaut variations of Old English strong verbs, their underlying and surface representations, and their Gothic cognates are provided.

	Inf.	1st Pret.	2nd Pret.	Past Ptc.
Gothic	beidan	baiþ	bidun	bidans
la. OE UR	beyd+an	bayd	byd+un	byd+ans
Vowel-height assimilation	bidy+an	—	—	—
Lengthening	bīd+an	bād	—	—
Vocalization of semivowels	—	—	bid+un	bid+ans
Suffix changes	—	—	bid+on	bid+en
OE SR	bīdan	bād	bidon	biden

Similarly ācwīnan 'dwindle away', behlīdan 'cover', bītan 'bite', blīcan 'shine', cīnan 'crack', flītan 'strive', mīgan 'make water'

Note: Inf forming suffix   Pret₂ forming suffix   Part suffix

	Inf forming suffix	Pret₂ forming suffix	Part suffix
Goth	-an	-un	-ans
OE	-an	-on	-en

	Inf	1st Pret.	2nd Pret.	Past Ptc.
1b.				
OE UR	see p.7	wrayh	wryg+un	wryg+ans
Lengthening		wrāh	----	----
Vocalization		---	wrig+un	wrig+ans
of semivowels				
Suffix changes			wrig+on	wrig+en
OE SR	wrēon	wrāh	wrigon	wrigen
Similarly tēon 'accuse',				
Gothic	biudan	bauo	budun	budans
2a. OE UR	biwd+an	bawo	bwd+un	bwd+ans
i > ew	bewwd+an	---	----	---
Fronting	---	bæwo	---	----
Lenghening	bēwd+an	bǣo (ǣ=ēa)	---	----
Vocalization	bēud+an	---	bud+un	bud+ans
of semivowels				
High vowel-lowering	bēod+an	---	----	bod+ans
Suffix changes	---	---	bud+on	bod+en
OE SR	bēodan	bēad	budon	boden
Similarly brēotan 'break', clēofan 'cleave asunder', rēodan 'reeden'				
2b. OE UR	bruwc+an	brawc	brwc+un	brwc+ans
Fronting	brūc+an	brǣc	---	----
Lengthening				
Vocalization	---	---	bruc+un	bruc+ans
of semivowels				
High vowel-lowering	---	---	----	broc+ans
Suffix changes	---	---	bruc+on	broc+en
OE SR	brūcan	brēac	brucon	brocen
Similarly dufan 'dive', hrutan 'snore', supan 'sup'				
Gothic	bindan	band	bundun	bundans
3a. OE UR	bind+an	band	bnd+un	bnd+ans
n > un	---	---	bund+un	bund+ans
Suffix changes	---	---	budn+on	budn+en
OE SR	bindan	band	bundon	bunden

Similarly climban 'climb', clingan 'shrink', crimman 'insert'

		Inf.	1st Pret.	2nd Pret.	Past Ptc.
	Gothic	hilpan	halp	hulpun	hulpans
3b.	OE UR	hilp+an	halp	hlp+un	hlp+ans
	Fronting	----	hælp	----	----
	Breaking	----	healp	----	----
	l > ul	----	----	hulp+un	hulp+ans
	High vowel-lowering	help+an	----	-----	holp+ans
	suffix changes	----	----	hulp+on	holp+en
	OE SR	helpan	healp	hulpon	holpen

Similarly belgan 'swell with anger', delfan 'dig', meltan 'melt'

3c.	OE UR	werp+an	warp	wrp+un	wrp+ans
	Fronting	----	wærp	----	----
	Breaking	weorp+an	wearp	----	----
	r > ur	----	----	wurp+un	wurp+ans
	High vowel-lowering	----	----	----	worp+ans
	Suffix changes	----	----	wurp+on	worp+en
	OE SR	weorpan	wearp	wurpon	worpen

Similarly, aseolcan 'languish', beorcan 'bark', beorgan 'protect'

3d.	OE UR	spurn+an	sparn	sprn+un	sprn+ans
	Fronting	----	spærn	----	----
	Breaking	----	spearn	----	----
	r > ur	----	----	spurn+un	spurn+ans
	High vowel-lowering	----	----	----	sporn+ans
	Suffix changes	----	----	spurn+on	sporn+en
	OE SR	spurnan	spearn	spurnon	spornen

Spurnan is used as an infinitive instead of spornan. In a certain number of words o becomes u in OE, especially before and after labials.

3e.	OE UR	stregdan	stragd	strgd+un	strgd+ans
	Fronting	----	stregd	----	----

r > ur	----	----	strugd+un	strugd+ans
High vowel-lowering	----	----	----	strogd+ans
Suffix changes	----	----	strugd+on	strogd+en
OE SR	stregdan	strægd	strugdon	strogden
Similarly bregdan 'brandish', berstan 'burst'				
Gothic	bairan	bar	bērun	baurans

4a.

OE UR	ber+an	bar	ber+un	br+ans
Fronting	—	bær	----	----
r > ur	----	---	----	bur+ans
High vowel-lowering	----	----	----	bor+ans
e > ǣ	---	---	bǣr+un	---
Suffix changes	---	---	bǣr+on	bor+en
OE SR	beran	bær	bǣron	boren
Similarly cwelan 'die', helan 'conceal', teran 'tear', stelan 'steal'				

4b.

Gothic	mitan	mat	mētun	mitans
OE UR	met+an	mat	met+un	mit+ans
Fronting	---	mæt	---	----
e > ǣ	—	—	mǣt+un	—
High vowel-lowering	—	—	—	met+ans
Suffix changes	----	----	mǣt+on	met+en
OE SR	metan	mæt	mǣton	meten
Similarly brecan 'break', screpan 'scrape', swefan 'sleep', wrecan 'avenge'				

4c.

OE UR		sah	seh+un	sih+ans
Fronting		sæh	---	----
Breaking		seah	---	----
Verner's Law		—	seg+un	sig+ans
e > ǣ		—	sǣg+un	----
High vowel-lowering		---	----	seg+ans
Suffix changes		---	sǣg+un	seg+en
OE SR	sēon	seah	sǣgon	segen
Gothic	bidjan	baθ	bedun	bidans

4d.	OE UR	bidjan	bad	bed+un	bid+ans
	Consonant doubling	biddjan	——	———	——
	Loss of /j/	biddan	———	———	———
	Fronting	—	bæd	———	——
	e > ǣ	———	———	bǣd+un	———
	High vowel-lowering	———	——	———	bed+ans
	Suffix changes	———	———	bǣd+on	bed+en
	OE SR	biddan	bæd	bǣdon	beden
	Similarly sittan 'sit', licgan 'lie down'				
	Gothic	faran	fōr	fōrun	farans
5a.	OE UR	faran	fōr	fōr+un	far+ans
	Fronting	færan	——	——	fær+ans
	Restoration of a	faran	——	——	far+ans

Each a undergoes fronting but this is later cancelled by the operation of the restoration of a.

	Suffix changes	———	———	fōr+on	far+en
	OE SR	faran	fōr	fōron	faren
	Similarly alan 'grow', bacan 'bake', galan 'sing', grafan 'dig'				
5b.	OE UR	slahan	slōh	slōh+un	slah+ans
	Verner's Law	——	slōg	slōg+un	slag+ans
	Fronting	slæhan		——	slæg+ans
	Breaking	sleahan		——	——
	Restoration of a	——		——	slag+ans
	Loss of /h/	sleaan		——	——
	Vowel contraction	slēan		——	——
	Suffix changes	——		slōg+un	slag+ans
	OE SR	slēan	slōg	slōgon	slagen
5c.	OE UR		hof	hof+un	haf+ans
	Fronting		———	——	hæf+ans
	Restoration of a		———	hof+on	haf+ans

				haf+en
Suffix changes		----	----	haf+en
OE SR	hebban	hof	hofon	hafen
5d. OE UR	skapjan	skōp	skōp+un	skap+ans
Fronting	skæpjan	----	----	skæp+ans
Consonant doubling	skæppjan	----	----	----
Loss of /j/	skæppan	----	----	----
Palatal diphthongization	sceappan	----	----	sceap+ans
I-umlaut	scieppan	----	----	----
Suffix changes	---	----	scōp+on	sceap+en
OE SR	scieppan	scōp	scopon	sceapen
5e. OE UR	stapjan	stōp	stōp+un	stap+ans
Consonant doubling	stappjan	----	----	----
Loss of /j/	stappan	----	----	----
Fronting	stæappan	----	----	stæp+ans
Suffix changes	---	----	stōp+on	stæp+en
OE SR	stæppan	stōp	stōpon	stæpen
Gothic	qiman	qam	qēmun	qumans
5f. OE UR	ceman	cam	cæm+un	cm+ans
m > um	----	----	----	cum+ans
Nasal raising	ciman	----	----	----
Restoration of a	--	----	cam+un	----
a > ō	---	cōm	cōm+un	----
Suffix changes	----	----	cōm+on	cum+en
OE SR	cuman	cōm	comon	cumen
Gothic	niman	nam	nēmun	numans
5g. OE UR	neman	nam	næm+un	nm+ans
m > um	---	----	----	num+ans
Nasal raising	niman	----	----	---
Restoration of a	----	----	nam+un	----
a > ō	----	nōm	nōm+un	---
Suffix changes	----	----	nōm+on	num+en
OE SR	niman	nōm	nōmon	numen

Note that historical support for the change from <u>ciman</u> to <u>cuman</u> may be found in Campbell's Old English Grammar. "OE was clearly derived from a

type of Germanic in which a single m had the same effect on preceding u and e is a nasal consonant followed by another consonant. Thus niman with past part. numen has the same vowels as bindan, bunden. Other examples of OE u retention of u before a single m are cuman. . . ."[2]

		Inf.	1st Pret.	2nd Pret.	Past Ptc.
	Gothic	haitan	haihait		
6a.	OE UR	haytan	hayt	heyt+un	hayt+ans
	Lengthening	hātan	hāt	hēt+un	hāt+ans
	Fronting	----	hǣt	----	----
	Front vowel raising	----	hēt	----	---
	Suffic changes	----	----	hēt+on	hāt+en
	OE SR	hātan	hēt	hēton	hāten

Similarly lācan 'play', scādan 'separate'

	Gothic	lētan	lailōt		
6b.	OE UR	leytan	layt	leyt+un	layt+ans
	Lengthening	lētan	lāt	lēt+un	lāt+ans
	e > ǣ	lǣtan	----	----	---
	Fronting	----	lǣt	----	lǣt+ans
	Front vowel raising	----	lēt	----	--
	Suffix changes	----	----	lēt+on	lǣt+en
	OE SR	lǣtan	lēt	lēton	lǣten

Similarly rǣdan 'advise', blandan 'mix'

6c.	OE UR	See p. 9	feyng	feyngon	fangen
	Lengthening	---	fēng	fēngon	fangen
	OE SR	fōn	fēng	fēngon	fangen

Wagner (1969:207) formulates the following rule which accounts for the exceptional past stems of blandan, fōn and hōn.

$$/e/ \longrightarrow /\bar{e}/ \quad / \quad \left\{ \begin{array}{l} \text{bl} \underline{} \text{nd} \\ \text{f} \underline{} \text{ng} \\ \text{x} \underline{} \text{ng} \end{array} \right\}$$

Similarly hōn 'hang'

7a.	OE UR	bannan	biwnn	biwnnon	bannen
	i → ew / —w	----	bewwnn	bewwnnon	----
	Lengthening	----	bēwnn	bēwnnon	----
	Vocalization of semivowels	----	bēunn	bēunnon	----
	High vowel lowering	----	bēonn	bēonnon	----

OE SR	bannan	beonn	beonnon	bannen
7b. Gothic	falθan			
OE UR	fælθsan	fiwlθ	fiwlθon	fælden
lθ > ld	fældan	fiwld	fiwldon	fælden
Breaking	fealdan	---	----	fealden
i→ew/—w	---	fewwld	fewwldon	---
Lengthening	---	fēwld	fēwldon	---
Vocalization of semivowles	---	fēuld	fēuldon	---
High vowel lowering	---	fēold	fēoldon	----
OE SR	fealdan	fēold	fēoldon	fealden
7c. Gothic	blǣwan			
OE UR	blǣwan	bliww	bliwwon	blǣwen
ǣ > ā before w	blāwan	----	----	blāwen
i→ew/—w	---	blewww	blewwwon	---
Lengthening	---	blēww	blēwwon	---
Vocalization of semivowels	---	blēuw	blēuwon	----
High vowel lowering	----	blēow	blēowon	----
OE SR	blāwan	blēow	blēowon	blāwen
7d. OE UR	bātan	biwt	biwton	bāten
Fronting	bǣtan (ǣ=ēa) ---		---	bǣten
i→ew/— w	---	bewwt	bewwton	----
Lengthening	---	bēwt	bēwton	---
Vocalization of semivowles	---	bēut	bēuton	---
High vowel lowering	---	bēot	bēoton	----
OE SR	bēatan	bēot	bēoton	bēaten
7e. OE UR	blātan	bliwt	bliwten	blāten
Back vowel raising	blōtan	---	----	blōten
i→ew/—w	---	blewwt	blewwten	----
Lengthening	---	blēwt	blēwten	---
Vocalization of semivowels	---	blēut	blēuten	---
High vowel lowering	---	blēot	blēoten	----

OE   SR   blōtan   blēot   blēoton   blōten

According to the above analysis, la-b belong to I of the traditional scheme, 2a-b belong to II; 3a-e to III; 4b-d to V; 5a-e to VI. 5f-g to IV, and all forms in 6 and 7 to VII.

FOOTNOTES

1.   Richards (1972:84).
2.   Campbell (1959:44).

BIBLIOGRAPHY

Campbell, A. 1959. *Old English Grammar.*   Oxford: Oxford University Press.
Levin, Samuel R. 1964. "A Reclassification of the Old English Strong Verbs." *Language* 40 (2) : 156–165.
Richards, Michael D. 1972.   "Ablaut Alternations in Resonant Stems of Old English Strong Verbs." *Glossa* 6 (1) : 83–90.
Wagner, Karl. 1969.   *Generative Grammar Studies in the Old English Language.* Heidelberg.
Wright, Joseph. 1914.   *Old English Grammar.*   Oxford University Press.