SOME REMARKS ON THE PHONOLOGY OF OLD ENGLISH

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Introduction. 0.1. The analysis of a language of which only written records exist is beset with a number of problems. For example, the writing system of Old English was not phonetic and the precise quality of any phone cannot be determined with absolute certainty; each interpretation is only one of many possible solutions. Secondly, the historic period of Old English comprises four hundred years (700–1100) and during this period some changes must have taken place.

0.2. In this paper an interpretation of the phonological system of Early West Saxon (700–900) will be presented. Our analysis is limited to segmental phonemes with the exception of the juncture phoneme, which we are going to discuss in the section "The interpretation of double consonantals ⟨-CC-⟩". We base our analysis on Zabrocki's (1962) phoneme theory.

THE VOCALIC SYSTEM

1.1. Short vowel phonemes. Old English had seven short vowel phonemes: /ieæyuoa/. They can be arranged in the following figure:

	Front		Back
	Unround	Round	
High	/i/	/y/	/u/
Mid	/e/		/o/
Low	/æ/		/a/

Examples:

/i/ was realized as an allophone [i̯], written ⟨ie⟩, initially and medially before /ɽ ɬ x/, e.g., *ieldra* "elder", *hliehhan* "to laugh". The plus phone [i], written ⟨i⟩, occurred elsewhere except in final position where /i/ was realized as a minus phone, e.g., *inn* "lodging", *fisc* "fish".

/e/ was realized as an allophone [e̯], written ⟨eo⟩, initially and medially before /ɽ ɬ x/, e.g., *eorþe* "the earth", *feohtan* "to fight". The plus phone [e], written ⟨e⟩, occurred elsewhere, e.g., *etan* "to eat", *beran* "to bear", *ēce* "ever".

/æ/ was realized as an allophone [a̯], written ⟨ea⟩, initially and medially before /ɽ ɬ x/, e.g., *eahta* "eight", *wearm* "warm". The plus phone [æ], written

⟨æ⟩, occurred elsewhere except in final position where /æ/ was realized as a minus phone, e.g., *æfter* "after", glæs "glass".
/y/ was realized as a plus phone [y] in initial and medial positions and as a minus phone in final position, e.g., *yfel* "evil", *fyllan* "to fill".
/u/ was realized as a plus phone [u] in all positions, e.g., *under* "under", *fugol* "bird", *wudu* "wood".
/o/ was realized as a plus phone [o] in initial and medial positions and as a minus phone in final position, e.g., *orf* "cattle", *boga* "arch".
/a/ was realized as a raised allophone [a^], written ⟨a, o⟩, before nasals, e.g., *mann/monn* "man". The plus phone [a], written ⟨a⟩, occurred elsewhere, e.g., *apulder* "apple-tree", *faran* "to go", *boga* "arch".

1.2. Long vowel phonemes. Old English had seven long vowel phonemes; the quality of a long vowel was probably the same as that of a corresponding short one. Long vowel phonemes can be arranged in the following figure:

	Front		Back
	Unround	Round	
High	/i:/	/y:/	/u:/
Mid	/e:/		/o:/
Low	/æ:/		/a:/

Examples:

/i:/	*īs*	"ice"	*wīf*	"woman"	*hī*	"them"
/e:/	*ēce*	"ever"	*lēf*	"weak"	*wē*	"we"
/æ:/	*ǣs*	"food"	*wǣta*	"liquid"	*sǣ*	"sea"
/y:/	*ȳþ*	"wave"	*lȳs*	"lice"	*hwȳ*	"who" (neutr.)
/u:/	*ūt*	"out"	*mūs*	"mouse"	*cū*	"cow"
/o:/	*ōsle*	"ousle"	*gōd*	"good"	*dō*	"I do"
/a:/	*āc*	"oak"	*stān*	"stone"	*hwā*	"who" (masc.)

The long vowel phonemes were realized as plus phones in stressed syllables in all positions.

1.3. Diphthongal phonemes. In our approach diphthongs are monophonemic because they constitute independent functional units. Old English had three diphthongal phonemes: /æə eə i ə/.

Examples:

/æ ə/	*ēac*	"likewise"	*hēāfod*	"head"	*fēā*	"fee"
/e ə/	*ēōwer*	"your"	*dēōp*	"deep"	*bēō*	"I am"
/i ə/	*īē*	"stream" (gen.)	*crīēpst*	"you creep"	*hīē*	"they"

The diphthongal phonemes were realized as plus phones in stressed syllables in all positions.

THE CONSONANT SYSTEM

2.1. The interpretation of the OE consonant system offers several difficulties, mainly, because there is no one-to-one graphemic-phonemic correspondence and one grapheme could represent two or even three phonemes. Another difficulty is the interpretation of double consonantals like ⟨-pp-, -bb-⟩. Those two problems are closely connected and therefore some statements concerning the consonant system can be understood only after the discussion of double consonantals, which will be presented in the section "The interpretation of double consonantals ⟨-CC-⟩".

2.2. Old English had twenty one consonant phonemes: /p b t d k' g' k g f θ s j x h m n l ɬ r ɾ w/. The OE consonant system is presented in the table below:

		Labial	Dental	Alveolar	Palato-alveolar	Velar	Glottal
STOPS	VOICELESS	/p/		/t/	/k'/	/k/	
	VOICED	/b/		/d/	/g'/	/g/	
SPIRANTS		/f/	/θ/	/s/	/j/	/x/	/h/
NASALS		/m/		/n/			
LATERALS				/l/		/f/	
APICAL	ROLLED			/r/			
	RETROFLEX			/ɾ/			
SEMIVOWEL		/w/					

Examples:

/p/ was realized as a plus phone [p] in all positions, e.g., *pytt* "pit", *screpan* "to scrape", *dēop* "deep".
/b/ was realized as a plus phone [b] in initial and medial positions (medially spelled ⟨-bb-⟩); in final position it occurred as a minus phone except when preceded by /m/, where it occurred as a plus phone [b], e.g., *beorcan* "to bark", *habban* "to have", *lamb* "lamb"
/t/ was realized as a plus phone [t] in all positions, e.g., *tunge* "tongue", *fultum* "help", *hit* "it".
/d/ was realized as a plus phone [d] in all positions, e.g., *drincan* "to drink", *bindan* "to bind", *land* "land".
/k'/ was realized as a plus phone [k'] in all positions when followed or preceded by a front vowel. e.g., *cild* "child", *rīce* "empire", *ic* "I".
/g'/ was realized as a plus phone [g'] in medial and final positions; initially it occurred as a minus phone, e.g., *bycgan* "to buy", *brycg* "bridge".
/k/ was realized as a plus phone [k] in all positions before and after back

vowels and their umlauts; initially also before consonants, e.g., *cōlian* "to cool", *cnyttan* "to knit", *wacan* "to wake", *ac* "but".
/g/ was realized as a plus phone [g] in initial position when not followed by ⟨i ie eo ea⟩; in medial position when spelled ⟨-gg-⟩ or when preceded by /n/, e.g., *gamen* "game", *frogga* "frog", *bringan* "to bring". In final position /g/ occurred as a minus phone except when preceded by /n/, where it was realized as a plus phone [g], e.g., *lang* "long".
/h/ was realized as a plus phone [h] initially before vowels, e.g., *here* "army"; medially after prefixes like {a, be} and in compounds, e.g., *behind* "behind", *Aldhelm* "Aldhelm". In all other positions /h/ was realized as a minus phone.
/x/ was realized as a plus phone [x] initially before ⟨r l n w⟩, medially and finally after back vowels and consonants, e.g., *hringan* "to ring", *flōh* "piece", *wealh* "foreigner". After front vowels /x/ was realized as an allophone [ç], e.g., *flyht* "flight". An allophone [γ] occurred in medial position between vowels of which at least one was a back vowel, and between a back vowel and ⟨r l⟩, e.g., *āgan* "to own", *beorgan* "to protect".
/j/ was realized as an allophone [ˌj], written ⟨i⟩ or ⟨ig⟩, between two consonants and a vowel, e.g., *brastlian/brastligan* "to brustle". The plus phone [j], written ⟨$g^{(i)}_{(e)}$⟩, occurred elsewhere, e.g., *gieldan* "to yield", *ege* "terror", *dæg* "day".
/s/ was realized as an allophone [z] medially between vowels or between a vowel and a voiced consonant, e.g., *rysel* "fat", *risne* "suitable". In all other positions the plus phone [s] occurred, e.g., *singan* "to sing", *ūs* "us".
/θ/ was realized as an allophone [ð] medially between vowels or between a vowel and a voiced consonant, e.g., *mīþan* "to conceal", *fiþru* nom. acc. pl. of *fiþere* "wing". In all other positions the plus phone [θ] occurred, e.g., *þingan* "to invite", *mūþ* "mouth".
/f/ was realized as an allophone [v] medially between vowels or between a vowel and a voiced consonant, e.g., *seofon* "seven", *hæfde* "I (he) had". In all other positions the plus phone [f] occurred, e.g., *fīf* "five".
/m/ was realized as a plus phone [m] in all positions, e.g., *macian* "to make", *guma* "man", *frum* "first".
/n/ was realized as an allophone [ŋ] in medial position before /k g/, e.g., *bringan* "to bring", *sincan* "to sink". A palatal allophone [ń] occurred medially before /g'/, e.g., *gemengan* "to mix". The plus phone [n] occurred elsewhere, e.g., *nosu* "nose", *wine* "friend", *etan* "to eat".
/l/ was realized as a plus phone [l] in all positions, e.g., *libban* "to live", *fȳlan* "to defile", *stæl* "place".
/ɬ/ was realized as a plus phone [ɬ] in all positions, initially spelled ⟨wl⟩ (Fisiak 1967), e.g., *wlinc* "proud", *feallan* "to fall", *eall* "all" (Reszkiewicz 1953).
/r/ was realized as a plus phone [r] in all positions, e.g., *riht* "right", *beran* "to bear", *fær* "journey".

/ɹ/ was realized as a plus phone [ɹ] in all positions, initially spelled ⟨wr⟩, e.g., *wringan* "to wring", *beorcan* "to bark", *fear* "bull".
/w/ was realized as a plus phone [w] in all positions, e.g., *wē* "we", *snīwan* "to snow", *ēow* dat. acc. pl. of *þū* "you".

THE INTERPRETATION OF DOUBLE CONSONANTALS ⟨-CC-⟩

3.1. It is generally held that double consonantals like ⟨-ll-⟩ in *fyllan* "to fill" represent either long consonants (Quirk and Wrenn 1965) or geminates (Campbell 1964). Peters (1967) tries to prove that these digraphs represent simple phonic and phonemic consonantals. His reasoning is as follows: single consonantals, e.g., *biter* but also *bitter* "bitter", are in free variation with double consonantals except in the sequence /V́CCV/ after a short stressed vowel (Kurath 1956). Peters examined 35,000 headwords in the Hall-Meritt dictionary and found only sixteen minimal pairs like *stellan* "to place": *stelan* "to steal". He draws the conclusion: since there are no long consonants in final position, it follows that there are no long consonants in morph final position: "Thus we have sixteen sets of homonyms with lexically different bases, e.g., *wan/ian* "to diminish, impair, fade" from *wan* "wanting, lacking, deficient" and *wann/ian* "to become dark in color" from *wan/wann* "dark, dusty" (Peters 1967: 3). Unfortunately, the consistent spelling *wanian* : *wannian*, conservative as it might have been, seems to rule out Peters' solution.
3.2. There are two other possibilities, i.e., that the double consonantals represent either long consonants or geminates. If one accepts the former, then the difficulty arises how to divide words like *fyllan* /fyl : an/ "to fill" into syllables; long consonants occur neither in final nor in initial position and the division inside the consonant is rather clumsy. This is an argument for the other solution—geminates. But in this case one faces another difficult problem, namely, the problem of syllable division in words like *libban* "to live" and *frogga* "frog". The division between two consonants is impossible since /b ġ/ are realized as minus phones in final position except when preceded by /m n/, respectively. Probably, ⟨-bb-⟩ and ⟨-gg-⟩ represent clusters the first element of which are voiceless and, in fact, the spelling *frocga* is attested, i.e., /g/ is realized here as a neutral phone [k].
3.3. There is, however, a possibility, and the distribution seems to point to it, that there were two juncture phonemes in Old English: the external one /=/ and the internal one /+/. Thus before the external juncture /b g/ are realized as plus phones only when preceded by /m n/, respectively, while before the internal juncture this restriction is not valid and /b g/ can occur as plus phones [b g], e.g., /=lib+ban=/, /=frog+ga=/. There are also instances of medial consonant clusters that speak in favour of distinguishing two juncture phonemes, e.g., /-sx-/ as in *bysgung*, "business", /-ng-/ as in *senge* "narrow",

or /-θj-/ as in *baþian* "to bathe". The division between the consonants is impossible since the plus phone [x] of /x/ does not occur initially before vowels and the allophones [ŋ] and [ð] of /n/ and /θ/, respectively, do not occur finally. On the other hand, /sx/, /ng/ and /θj/ cannot belong to the following syllable since they are impossible initial clusters. The introduction of the internal juncture phoneme solves the problem. The plus phone [x] can occur after the internal juncture when followed by a vowel. Similarly, the allophones [ŋ], [ð] can occur before the internal juncture when followed immediately by /g/ or a voiced consonant, respectively.

Summing up, in our opinion the double consonantals represent geminates in the sequence /V́CCV/ and, consequently, we postulate two juncture phonemes (Cf. Stockwell 1958).

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