Volume I
This thesis attempts to analyse aspects of Old English phonological and morphological structure within the framework of dependency grammar with particular reference to a selection of forms from the Corpus glossary (Cp.) ($1.3.1.1$).

Chapter 1 describes and evaluates the various sources of evidence for the reconstruction of historical dialects ($1.3$), emphasising the necessity for cross-reference between them ($1.4$).

Chapters 2 and 3 analyse the phonological and morphological structures of the Cp. dialect respectively, using traditional notational models.

§2.1 assigns broad phonetic values to every graph that appears in the MS and §2.2 groups these segments into phonological units. §2.3 is concerned with suprasegmental structure and challenges the traditional rigid division of the Old English stress continuum.

§3.1 draws a distinction between 'word' and 'morphological' structure and the various possible constructions are illustrated from the Cp. dialect in §3.2. 'Problem' cases which do not readily fit into established categories of morphological structure are also discussed ($3.2.2.3$, $3.2.7.3$).

After an introduction to the basic concepts of dependency theory ($4.1$) Chapter 4 shows how the morphological ($4.2.1$), suprasegmental ($4.2.2$) and infrasegmental ($4.2.3$) structure of forms from Cp. may be represented in the dependency framework, constantly emphasising the advantages that this has over the more traditional models used in Chapters 2 and 3.

The major strength of dependency notation, however, is that it is possible to represent the structure of all three levels of the grammar on a single diagram. Chapter 5 considers several instances where a direct influence can be observed between supra- and infra-segmental ($5.1$) or phonological and morphological ($5.2$) structure respectively. It can be seen that the dependency model allows this information to be conveyed in a way that is not possible with the majority of notational frameworks.
I declare that this thesis has been composed by me and that it is all my own work.

Alison M. Donald
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## Abbreviations and References

### Abbreviations used in the text

**Old English Manuscripts**

- Cp. Corpus Glossary
- Ep. Epinal Glossary
- Erf. Erfurt Glossary
- VP. Vespasian Psalter

**Old English Dialects**

- W-S West-Saxon
- Angl. Anglian
- Nb. Northumbrian

**Languages and Proto-Languages**

- OE Old English
- OFr. Old Frisian
- OHG Old High German
- ON Old Norse
- MHG Middle High German
- OLG Old Low German
- Go. Gothic
- OS Old Saxon
- A-S Anglo-Saxon
- PE Present-Day English
- Sc. Scots
- Lat. Latin
- Vulg. Vulgar (Latin)
- M.Lat. Medieval Latin
- Gk. Greek
- Sansk. Sanskrit
- I–E Indo-European
- W–G West-Germanic
- PG Proto Germanic
- Gmc. Germanic
- Pre-OE Pre-Old English
- Icel. Icelandic
- Swed. Swedish
- Norw. Norwegian
- Pol. Polish
- Sp. Spanish
- Ital. Italian
- eMod.E Early Modern English
- ME Middle English

**Other**

- W.S. Word Structure
- M.S. Manuscript
- ft. footnote
- O.E.D. Oxford English Dictionary

(continued)
Abbreviations used in the diagrams

Chapter 2

§2.1 and §2.2

V1(s). vowel(s)
C(s). consonant(s)
Sht. short
Bk. back
Ft. front
Sec. secondary front vowel
Ft. V1.
Vd. voiced
V1. voiceless
Approx. approximant
Fric. fricative
Nas. nasal

§2.3

SC syllabic
N nucleus
R rhyme
S syllable
F foot
G group
F₂ foot formed on second cycle
G₂ group formed on second cycle
S₁ 1st. syllable in word
S₂ 2nd. syllable in word
S₃ 3rd. syllable in word
S₄ 4th. syllable in word.
S.G. Supergroup
+ Morpheme boundary
i symbol for any high front segment, directly or indirectly present, (2.1.13) ft.2

Chapter 3

W.S. Word Structure
M.S. Morphological Structure
W.F. Word Form
Infl. Inflection/Inflectional
Deriv. Derivational
N Noun
V Verb
Adj. Adjective
Conj. Conjunction
Pro. Pronoun
Prep. Preposition
Masc. Masculine
Fem. Feminine
Neut. Neuter

(continued)
Sing.
Sg.
Nom.
Acc.
Gen.
Dat.
Loc.
Inst.
Abl.
Pres.
Pers.
Cl.
Wk.
Indic.
Non-
subj.
Imper.
Infin.
Pple.

References

Major section headings in bold eg. 1.2.3

Sub-section headings in ordinary
typeface eg. 1.2.3

Cross-references within the text
thus take the following form §1.2.3.1.2.3

Figures and diagram numbers in
brackets, first two digits signify
major section heading e.g. (2.3.1)

References to secondary works
as follows (Campbell, 1959:§123)
(full details given in
bibliography)

Entries from Cp. are cited in the following form

Latin:     Old English     'PE Gloss'    Line
Number

eg.
adsida:  flood  'flood'  1

In cases of ambiguity the form, syllable or letter in
question will be underlined twice.
A note to the text

This thesis contains a great many figures, illustrations and diagrams. A priority throughout has been to maintain the continuity of the argument and thus facilitate ease of reading. For this reason, most exhibits have been placed at exactly the relevant point within the text. In some places this has led to irregular page breaks and thus has increased the apparent size of the work. However, it was felt that such disadvantages were clearly outweighed by the need to preserve the free flow of the material.
Chapter 1.

This thesis discusses certain aspects of the phonological and morphological structure of OE with a view towards showing how these can be represented within the dependency framework (see §4.1 and the references therein).

For this purpose the study takes as its data base some six hundred forms from the Corpus Glossary (§1.3.1) which provide a representative selection of material on the basis of which it is possible to attempt a comprehensive and detailed analysis of the synchronic phonological and morphological structure of the dialect concerned. Chapters 2 and 3 undertake such an analysis, using, where appropriate, traditional methods of notation (see §2.2 ft.1; §2.3; §3.1 and references therein). Chapters 4 and 5 consider how the phonological (both supra- and infra-segmental) and morphological structures of selected forms from Cp. may be represented within the dependency framework, demonstrating the various advantages that this has over the more traditional notational models.

Such an endeavour is particularly useful for the reasons outlined in §1.1 below.
1.1

1.1.1

While there have been many attempts at the application of a precise theoretical model to analyses of data from languages which survive only in their written form (see Suphi, 1985; Colman, to appear a), few are related, as is the case in the present account, to a specific corpus of data.

The data base of Warner's study (1982) of aspects of historical syntax within the transformational-generative framework is a ME rather than OE text.

1.1.2

Although recent treatments of the corpus of data on which the present account is based (i.e. the Corpus Glossary and other early Mercian MSS) invoke some sort of theoretical framework, none gives a comprehensive account of the entire phonological and morphological systems of the dialect represented, nor does any work within the dependency framework. The main concern of Kuhn (1939) and Toon (1983) is whether or not selected spellings (in particular those representing front monophthongs and diphthongs) in the MS can be taken as evidence for the operation of sound changes which reflect dialect influence. Kuhn (op.cit) also considers the question of the relationship of the dialect represented by Cp. to that of the Vespasian Psalter, concluding that most of the differences between the two
MSS, as far as the spellings of the stressed vowels are concerned, are due to the fact that the texts are diachronically rather than diatopically related.

Toon (1975) concentrates on the nature of the sounds represented by the graphs Ææ and æ in Cp. and related MSS, as does Dresher (1980).

1.1.3

Finally, the bulk of material written to date on aspects of dependency grammar (§4.1 and references therein) is based largely on the evidence of present day languages and dialects and concentrates for the most part on accounts of syntactic and phonological structure (Anderson, 1980: §1). It can be seen, therefore, that Chapter 3, in that it analyses the morphological structure of the forms of an OE MS, and §4.2.1, in that it represents this information within the dependency framework, deal with questions that have hitherto received little consideration in the literature.

Essentially, the present account aims to synthesise two traditions, described most effectively by Warner (1982: preface):

The philological tradition, which has tended to focus on an analysis of texts and avoid questions of linguistic interpretation, and a more recent linguistic tradition, pre-eminently interested in the grammatical system of languages, which often fails to appreciate the limitations of textual evidence and the kind of careful interpretation that it needs before grammatical conclusions can be drawn.
1.2 The type of information required

This section considers the type of information that is necessary to achieve a satisfactory and comprehensive analysis of
1. segmental phonological (henceforth referred to as 'phonological'),
2. suprasegmental phonological (henceforth referred to as 'suprasegmental') and
3. morphological structure.

§1.3 will move on to examine the evidence on the basis of which this information can be recovered for a 'historical' dialect.

1.2.1 Segmental phonological structure

The aims of segmental phonological analysis are well documented in the literature (see, for example, Abercrombie, 1967: Ch.5; O'Connor, 1973: Ch.6; Gimson, 1980: Ch.5). Generally, a comprehensive phonological analysis of any dialect must

(i) establish the phonological inventory of that dialect

(ii) formulate realisation rules for the phonemes concerned.

Where first-hand phonetic evidence is readily available, such an analysis is relatively straightforward. Segments are assigned to different phonemes if they appear in
(a) exact 'minimal pairs'
(b) analogous pairs
(c) similar contexts or
(d) if they at least fail to occur in 'complementary distribution'

(a) being the most conclusive and (d) the least conclusive evidence of phonemic contrast respectively.

If segments appear in complementary distribution they are generally assumed to be allophonic variants of the same phoneme, provided they also show some degree of phonetic similarity (O'Connor, 1973: 177).

By this procedure a phonemic inventory can be built up and from an examination of the environments in which the alleged allophonic variants appear it is possible to formulate realisation rules for the phonemes concerned. In the case of dialects for which only written evidence survives it is therefore essential to attempt to recover the broad phonetic values of the segments represented by the various graphs in the text before a comprehensive phonological analysis can be achieved.

1.2.2. Suprasegmental structure

The basic aims of an analysis of suprasegmental structure (§2.3) are to identify any units larger than the segment which appear to be relevant to phonological analysis and outline the principles by which the forms in the dialect under investigation can be divided into such units.
§2.3 suggests that it is generally necessary to have the following information before these aims can be achieved.

(i) an awareness of the nature of what constitutes a well-formed syllable in the dialect concerned;

(ii) a knowledge of the degree of stress to be carried by each of these syllables.

1.2.3 Morphological analysis

The basic aims of morphological analysis (§3.1) are to identify the abstract components in the word structure of the relevant forms in the dialect under investigation and give an account of the means by which these components are expressed.

Once the word forms in the material under consideration have been isolated, these aims can generally be achieved by the identification of the roots and affixes of the forms concerned together with a consideration of their position in syntactic and semantic structure.

1.3 The evidence for reconstruction

The various types of evidence that assist in the recovery of the above information for a historical dialect such as that represented by Cp. have been discussed at length in the relevant literature (Penzl, 1972; Penzl, 1957; Hoenigswald, 1960).

Such evidence can generally be divided into the
following major categories:

1. The MS (or text) that represents the dialect under consideration: in the case of the present account, the Corpus Glossary.

2. MSS (or any other extant material) which represent dialects that belong to the same 'language' as the dialect concerned: in this case all other surviving OE MSS, coins and inscriptions.

3. The evidence of languages diatopically related to the dialect in question. In the case of the present account extant material in the other early Germanic languages (OHG, ON, OS, OFr. and Go.) is of most value for the reconstruction, although that of languages from other branches of the I-E family is also relevant. Furthermore, if (as seems reasonable) Latin is considered to be a language diatopically related to OE, albeit more distantly than the Germanic languages, it can be seen that the evidence of that language is particularly useful for the reconstruction of various aspects of the phonological structure of the Cp. dialect. As such it is best given separate consideration.

4. The evidence of dialects diachronically related to the dialect under investigation (i.e. those which can be assumed to belong to the same diachronic continuum). As far as the present study is concerned this includes the body of material that survives from all periods of 'historical English' (ME, eModE and so on: see
Baugh, 1935; Barber, 1972; Strang, 1970) and, more importantly, the evidence of dialects of present day English, as these can be 'directly observed in the field' (Penzl, 1957: 206).

5. The evidence of diachronic developments which can be assumed to operate between the various stages of the linguistic continuum to which the dialect in question belongs. In the case of the present account this not only refers to developments attested within the OE period itself and those within the historical English period, but also, crucially, those developments that occurred before the period at which the Cp. MS was composed (i.e. Pre-OE, PG and W-G, see §1.3.5).

While there is no extant evidence of the language at this stage in its development, this can generally be reconstructed on consideration of the historical developments that are assumed to affect various languages in the I-E language family.

6. Ultimately, any synchronic analysis suggested on the basis of evidence of types 1-4 above (see §§1.3.1-4), or any diachronic developments suggested in §1.3.5 must be seen to conform to attested 'phonetically natural' or 'typologically plausible' features, otherwise their validity is seriously undermined.

It will become clear in the course of the discussion below that it is impossible to achieve a satisfactory reconstruction of the Cp. dialect on the basis of any one of these categories when it is
considered in isolation from conclusions reached on the basis of the other five. No single source of evidence provides sufficient information for a comprehensive analysis of the three levels of the grammar relevant to the present investigation.

Furthermore, as the reconstruction of the phonological and morphological structure of any 'historical' dialect must ultimately be based on speculation, it is essential to piece together conclusions based on a consideration of every available source of evidence in order to be certain that the final analysis reached is as valid as possible. The necessity to consider the evidence of types 1-6 in conjunction with one another is therefore constantly illustrated throughout the present study.

1.3.1 The manuscript of the Corpus Glossary

1 Background and description

It is necessary at this juncture to give a brief description of the nature of the Cp. MS together with some information as to its dating and provenance as these have implications for its value as evidence for the reconstruction of the dialect represented.

1.1 Dating and provenance

While the date and provenance of any OE MS can never be established with absolute certainty (Ker, 1957: xx), most authorities agree that that Cp. dates from the eighth century and is written in the Mercian dialect.
It is also widely assumed that the dialect represented by Cp. is closely related to that of two other MSS, the Epinal and Erfurt Glossaries respectively. The relative chronology and exact relationships that hold between the three glossaries is open to question. Campbell (1959: §12) gives a summary of the traditional position, but the opinions of Kuhn (1970: §1) and Sweet (1885: 1-34) must also be acknowledged. Ultimately such considerations are not crucial to the present investigation and it suffices to assume without further question that Cp. is an eighth century Mercian text. The only real relevance that evidence from Ep. and Erf. have for the synchronic analysis of the Cp. dialect is that they frequently contain forms corresponding to those in Cp. which are available for comparison in cases where particular difficulty arises.

Consider, for example, the form *earngeat*, discussed in §2.1.10.4. The second element of this entry might have been interpreted as *geat* 'goat', were it not for the fact that the corresponding entry in Erf. is *ærngeup* (line 40).

If we accept traditional accounts of OE dialect division and the relative chronological placement of OE MSS, it appears that Cp. is one of the earliest surviving texts in Mercian, or indeed any other, OE dialect.
1.2 The nature of the MS

The Cp. MS consists of a list of Latin words and phrases (in approximate alphabetical order), some of which are glossed by OE material. (For a detailed account see Lindsay, 1921: i-xiv).

1.2.1 The sources of the material

According to Sweet (1885: 6-12), the sources for much of the material found in the early glossaries are interlinear and marginal glosses in Latin books (ibid: 7).

The compiler of the Leiden Glossary, another Mercian Glossary 'preserved in a late eighth century continental MS' (Campbell, 1959: §12) recorded the title of the work from which each particular gloss was taken. There is no reason to assume that the sources mentioned by the Leiden scribe would be radically different from those used in Cp. Sweet (1885: 10) gives an account of these sources:

It will be seen that most of the books are ecclesiastical: commentaries on various books of the Bible, lives of saints (St. Martin), the works of the fathers and commentaries on them, also that most popular of Middle Age epitomes, the History of Oriosus, and some purely profane writings.

However, these interlinear glosses are not the only source of the material found in the Cp. MS. Sweet (1885: 10) maintains that some forms were evidently taken from class-glossaries in which the names of beasts, birds, fishes, minerals and other natural objects were collected in
This has various implications for the nature of the OE material in the MS. Firstly, given the fairly wide-ranging nature of the sources, by no means is the vocabulary restricted to a particular semantic field. However, there is a numerical bias as far as the representation of major word-classes and inflectional categories is concerned.

Of the forms in Cp. taken from class-glossaries 'the great majority' (ibid: 10) are nouns which appear in the nominative singular. This means that members of other word-classes, and even nouns in oblique cases, are not as frequently attested as would be the case in a continuous prose text. Clearly this is not unduly surprising, as presumably the compiler's main purpose was to gloss the lexical item concerned rather than capture the nature of any inflectional categories represented.

Class glossaries, however, are not the only sources of the material found in Cp. The number of forms drawn from interlinear glosses results in the frequent appearance of nouns and adjectives in oblique cases, and different tenses of verbs (Sweet, 1885: 7). While Cp., therefore, contains a larger proportion of 'nominative singular' nouns than might be expected in any other type of text, the appearance of such forms is by no means exclusive. The absence of any syntactic unit larger than the phrase must also be
noted: the vast majority of entries consist of one or at most two words. Most of the OE forms have a Latin equivalent.

It seems that the glossators of Cp. Ep. and Erf. are generally most careful in rendering an oblique Lat. case with the corresponding OE one (Dahl, 1938: 54). There are, however, occasional instances of 'dittographing' (Wrenn, 1943: 20), where the scribe has apparently mistakenly copied a Latin inflection onto the OE stem.

Finally, it must be noted that Cp. is not a verse MS. As in other early Germanic languages, OE verse is based on the principle of alliteration and it is assumed to have had a complex metrical structure (Seivers, 1893; Schipper, 1910). Neither of these factors is however evident in the material consulted from Cp.

The above considerations as to the background and nature of the Cp. MS can potentially affect conclusions as to the phonological and morphological structure of the dialect it represents and they must therefore be borne in mind throughout the present analysis.

1.2.2 The material consulted

The present study will concentrate on forms from the first Corpus Glossary: a glossary with few English entries 'evidently entirely unconnected with C', except that it forms 'part of the same MS' and is 'written by
the same hand' (Sweet, 1885: 10). Most of the forms in this glossary are nouns in the nominative case and it therefore seems likely that much of the material has been drawn from Class Glossaries. In addition, the glosses in the second (longer) Corpus Glossary which gloss the Latin words with initial a-, b- and c- have been selected for particular attention in this account. This provides a basic corpus of some 627 words, an adequate number for a representative yet detailed analysis.

Forms from the remaining sections of the Cp. MS and, of course, other extant OE material will be cited where relevant. For the most part a consideration of Sweet's edition of the MS (1885) has proved sufficient for the purposes of the present account, but on a few occasions it has been necessary to refer to the MS itself: 'MS no. cxliv (formerly S.7) in the library of Corpus Christi College Cambridge' (Sweet, 1885: 5).

Throughout this study, occasional reference will be made to the history and traditions of OE scribal practice. Once more, traditional accounts, as given by Campbell (1959: Ch.1), will generally be accepted without question.

2 The evidence of forms in the Cp. MS and the reconstruction of the dialect represented

While acknowledging the value of palaeographic and graphemic analyses (the latter particularly in the
identification and location of dialects), their findings are not of crucial importance to the present enquiry.

2.1 Segmental phonology

2.1.1 The value of this type of evidence

This section considers the value of the evidence of the Cp. MS for a synchronic analysis of the segmental phonological system of the dialect it represents.

(i) Reconstruction of broad phonetic values

It is not possible on the basis of this type of evidence alone to reconstruct the broad phonetic values of the segments represented. Even in the absence of such knowledge however, it is possible to gain some idea of the nature of the abstract phonemic inventory.

(ii) Establishment of the phonemic inventory

If two forms exist which are identical but for the fact that a certain graph appears in one and a different graph is attested (in the same environment) in the other, and it is obvious that different lexical items are involved, it is reasonably safe to assume that the segments represented are in some way phonetically distinct and belong to different phonemes. We are in all probability dealing with a 'minimal pair'. According to Penzl (1972: 13)

within the texts, oppositions can sometimes be observed between minimal or near-minimal graphic pairs.

While in a relatively small body of text such as that
under consideration it is not easy to find exact minimal pairs, an examination of graphs that appear in similar contexts (see, for example, (2.2.1) and (2.2.13)) will usually suffice to indicate that the sounds presumably represented can be assigned to different phonemes. In this way the phonemic inventory may be built up.

Clearly, if this procedure were adhered to throughout the course of the analysis the resulting phonemic inventory would correspond exactly to the number of graphs in the MS. Indeed, a 'working hypothesis' (Penzl, 1972: 12) of a one-to-one correspondence between graph and phoneme does in fact seem to hold true for most of the data considered. The main value of an examination of the distribution of graphs in the Cp. MS for a reconstruction of the dialect it represents is therefore that it gives us some basic idea as to the nature of the abstract phonemic inventory.

2.1.2 Limitations

The major disadvantage in the use of this type of evidence for the reconstruction of the phonological system of the dialect in question is that if it is considered in complete isolation from evidence from other sources certain phonemic contrasts will remain undetected.

For example, as vowel length is not systematically recorded in the orthography, it is impossible to claim
that the segments represented by the graph 0 in forms such as hornblauuere and scoh, (2.1.75); (2.1.72), should belong to different phonemes, although this would seem to be the most plausible reconstruction.

Furthermore it must be noted that although sufficient examples of graphs in similar contexts are attested to allow the establishment of most, if not all, of the relevant contrasts (2.2.1; 2.2.13; 2.2.36; 2.2.42; 2.2.64; 2.2.70; 2.2.74), the Cp. MS as a whole contains only some 2175 OE entries. Thus few examples of minimal, or even analogous, pairs (the most convincing evidence of phonemic contrast: §1.2.1) will appear.

These limitations, however, can be overcome on consideration of a wider body of OE evidence (§1.3.2).

2.2 Suprasegmental phonology

2.2.1 The values of this type of evidence

This section considers the value of the forms contained in the Cp. MS as evidence for an analysis of the suprasegmental structure of the dialect represented.

The data in Cp. contains sufficient monosyllabic forms to allow identification of nucleus, onset, and coda as basic units in the internal structure of the well-formed syllable on distributional grounds (§2.3.1.1). The spellings of these monosyllabic forms are also crucially important in that they presumably reflect the phonotactic constraints that operate within
the Cp. dialect.

A consideration of the evidence of the Cp. MS alone cannot be expected to reveal much about the degree of stress assigned to the syllables in the various forms represented as this is not systematically reflected in the OE spelling system. Generally the same graphs appear in stressed and unstressed syllables alike. Occasionally, however, variation in the spelling of certain forms provides some indication of the degree of stress that is carried by a particular syllable. For example, the interchange of æ, e and i in the representation of various inflectional affixes (§2.2.2.3.1) can be assumed to be the result of phonetic and phonological reduction which is characteristic only of unstressed syllables.

2.2.2 Limitations

Given that the amount of data consulted is limited in relation to the entire corpus of extant OE, it is possible that certain syllable structures that are perfectly acceptable in the Cp. dialect are simply not represented by any of the monosyllabic forms that appear. For example, (2.3.1) shows that the Cp. evidence does not contain any monosyllabic forms consisting of a single vowel, which is in fact a perfectly acceptable structure for a stressed syllable in the dialect concerned. Once more, this disadvantage will be overcome by a consideration of a more extensive range of data.
2.3 Morphological structure

2.3.1 Values

This section discusses the importance of the evidence of the forms that appear in the Cp. MS for the analysis of the morphological structure of the dialect represented.

(i) Identification of roots and affixes.

The roots and affixes of the forms that appear in the Cp. MS can generally be identified by a consideration of the distribution of the phonological strings that are presumably represented by certain graphic sequences. For example, if a particular string occurs in isolation, or at least frequently recurs in complementary distribution with other sequences, it may be said to represent a root. Any remaining phonological material in the form must therefore represent inflectional and derivational affixes. Again, these may be isolated on distributional grounds.

For example, on the evidence of

- cassium(-is): helm 422
- cassidis: helmes 417
- clavis(-us): helma 5

(\(X_{elm}\)) can be identified as the root in all three forms, expressing the lexemic component HELM.

Once the root, (and therefore automatically the lexemic component) has been identified in a particular
form it remains to consider the nature of any inflectional and derivational components that occur. This can be achieved by a consideration of the form's position in syntactic and semantic structure (the latter being particularly useful in the identification of class-preserving derivational components). As Cp. is a glossary (see 1.2 above) there is in fact very little evidence of this type available.

While it is possible to isolate on distributional grounds certain orthographic strings, which, by virtue of the fact that they are always attached to roots, presumably represent a morphological rather than lexemic component (for example: ge-, -nis, -es and -as), it is impossible in the absence of any further evidence to determine whether the components represented by these affixes are inflectional or derivational.

However, the fact that OE forms in Cp. gloss Latin material can be of some assistance in this aspect of the analysis. It can be assumed, at least in the majority of cases, that the OE form will belong to the same major word class and be accompanied by the same non-lexical inflectional categories (§3.1) as the Latin form it glosses. On this basis it is possible to recover the information that, for example, -as, (as), in cocas (3.1.7) would represent the categories 'nominative' and 'plural', or that the affix (er) in hornblauuere, (3.2.72) (b), changes the verb into a noun with agenteive meaning. Furthermore, the fact that the forms in
(3.1.3) are all nominative and plural can be deduced from a consideration of the Latin evidence, which provides some motivation for the existence of lexical inflectional categories.

From the evidence contained in the Cp. MS itself, therefore, it is possible to divide forms into their constituent morphemes, and with reference to the Latin material (as some sort of 'substitute' for the absence of syntactic or semantic context) we can, at least to an extent, determine the nature of the inflectional and derivational categories that are represented.

2.3.2 Limitations

The major drawback in attempting an analysis of the morphological structure of the dialect of the Cp. MS on the basis of the evidence contained in that MS alone is that the limited nature of that data will not allow a fully comprehensive analysis:

(i) The spacing of morphemes in the Cp. MS does not seem to coincide consistently with the appropriate word boundaries (Campbell, 1959: §29). For example, in many instances the entry in the MS itself contains no significant gap between the morphemes, although the sense dictates that we are dealing with more than one word. Compare the entry

adplaudat: on hlior rouuit 86

which, according to Lindsay (1921) is best interpreted
as an error for
adplicavit: on hlion rouuit 'rows to shelter'
and is always printed as such in modern editions (Sweet, 1885; Lindsay, 1921). The entry in the actual MS, however, does not give any indication of the existence of word or morpheme boundaries, it appears as

onhlionrouuit

Compare also
avehit: on weg aferide 246
which Sweet (1885) interprets as 'he performed carrying duty on the journey' and accordingly divides the MS entry

onweg aferide

into three words.

Significantly, it appears that modern editors cannot agree as to where boundaries should be placed. Lindsay (1921) considers the sequence onweg to represent the adverb onweg 'away' rather than a sequence of preposition plus noun.

Conversely, there are many occasions where modern editors (Sweet, 1885; Lindsay, 1921) have chosen to treat a sequence of morphemes as a single word, whereas in the actual MS spaces occur between them. Compare the entries

affricus: westsudwind 'south-west wind' 103
boreus(-eas): eastnorwind 'north-east wind' 312
chorus(caurus): eostnorwind 'north-east wind' 460
which appear in the MS as

west su₀wind

east nor₀wind and
eost nor₀ wind

respectively (Cp. ☞ is here, of course, written as w; as is standard practice in editions).

On this basis it seems reasonable to claim that there is no such thing as a three-word compound in Cp. (see Ch. 3 ft. 19; §2.3 ft. 17).

Once more, the controversy over how the question of word division should be treated in such entries is illustrated by the fact that modern editors differ in their interpretations. Bosworth and Toller (1898), for example, represent the words concerned as westnor₀-wind, westsu₀-wind and so on.

(ii) Root identification

The identification of a root in any one form depends crucially on the existence of forms which appear to be from the same inflectional or derivational paradigm. Examples of this phenomenon are not regularly attested in the Cp. MS itself. Thus, while it was possible to isolate (xelm) as a root on the evidence contained in the Cp. MS alone, the identification of the root in, for example, cocas or tyrb is not such a straightforward matter. The data considered in Cp. does not contain any other members of the appropriate paradigms.

(iii) The identification of inflectional and
derivational components

In Cp. not every inflectional and derivational category is attested with equal regularity. The numerical bias in the material towards nouns in the nominative singular (see 1.2.1 above) means that affixes representing oblique cases and most conjugational categories do not make frequent appearances in the MS.

Thus, while an inflectional affix such as (Øs) in wulfes or helmes may be identified without too much difficulty on distributional grounds, there is much less evidence from Cp. for suggesting that (A) in cilda (2.1.13) or (Ø) in groetu (3.2.13) should be units relevant to morphological structure.

(iv) Identification of the categories represented

While it is a useful substitute for the evidence of syntactic or semantic context, the use of the Latin forms glossed as evidence of the meaning, major word-class or lexical inflectional categories represented in the OE form is far from reliable. The assumption that these will correspond exactly for the Latin and OE material alike will obviously not apply in every case.

Clearly, there is scope for error on the part of the scribe, both in the interpretation of the semantics of the lexemic component and perhaps even more so in the nature of the inflectional categories represented. Consider, for example, the scribe's uncertainty in the interpretation of decurat: horn naap
where Bosworth and Toller (1898:Supplement) suggest that 'naap= nāp' and could 'be p.t. of nipan used here figuratively of mental gloom' and that 'horn' may '=' orn (ran) ... and two quite different glosses have been suggested for the same Latin word because the glosser was uncertain whether to connect the gloss with currere or curare.

Compare, also, the problems with the interpretation of the form censeo: doema 'to judge' 440 (3.2.34) (j) where the Latin form represents the first person singular, but the OE entry may be more reasonably interpreted as an infinitive (3.2.34) ft.3.

A consideration of the data contained in the Cp. MS as if it were the only source of evidence available for an analysis of the phonological and morphological structure of the dialect it represents suggests that although the evidence is of considerable value, this is constantly undermined by the fact that the data base is limited in comparison with that offered by the entire corpus of extant OE material.

1.3.2 The evidence of the extant OE material

While, theoretically, the synchronic analysis of any one historical dialect must crucially rely on the evidence of the MS that represents it, it is clearly artificial to ignore the evidence of dialects that are very closely related (i.e. to the extent that they may be assumed to belong to the same 'language') if only as support for the analysis based on the text that
represents the dialect in question. The information that can be gleaned from the entire body of material written in the 'language' to which the the Cp. dialect belongs (i.e. OE) has been collected and correlated in various dictionaries and grammars: Bosworth and Toller (1898); Campbell (1959); Brunner (1965); Mitchell (1985) being a fairly representative selection.

Generally, dictionaries list the roots and to an extent the derivational morphemes of a language. From this information it is possible to recover every attested minimal pair and (on the basis of the monosyllabic entries) acceptable syllable structure recorded in the language. This is potentially of great importance to the phonological analysis (both supra- and infra- segmental) of the dialects of the language concerned.

The various grammars of the OE language contain different types of information, but generally they give an account of phonological and syntactic structure together with a comprehensive list of the various inflectional categories that appear and the means by which these are expressed. Occasionally the principles of word formation are discussed (Quirk and Wrenn, 1958: Ch.IV).

It would obviously be extremely artificial to attempt an analysis of the dialect represented by Cp. which ignores such information. It is not unreasonable to assume that many of the features attested in other
dialects of OE (and the conclusions reached on the basis of the evidence of these features) will be relevant to an analysis of the Cp. dialect. This section will discuss the value of the evidence of the dialects represented by extant OE material other than the Cp. MS to a synchronic analysis of the dialect in question. For reasons of economy, reference will as a rule be made solely to 'OE MSS' as these form the bulk of extant OE material. The value of the evidence of OE recorded on coins and inscriptions must also, however, be acknowledged.

1 Segmental phonology.

1.1 The value of this type of evidence

A consideration of the material contained in OE MSS other than Cp. seems, to some extent, to overcome the limitations outlined in §1.3.1.2.1.2. The larger the body of material available, the greater the number of minimal and analogous pairs attested. As such forms constitute the most crucial evidence for phonemic contrast (see §1.2.1), this is of great assistance in the establishment of a putative phonemic inventory.

From an observation of OE verse MSS, it becomes clear that forms such as those in (1.3.1)
(1.3.1)

(a) OE god  PE 'good'
(b) OE god  PE 'god'

occur in different positions in metrical structure ((1.3.1) (a) can be replaced by gold, whereas (b) cannot), and that this alternation seems to be determined by some characteristic of the segments represented by o in each word. This suggests that these segments are in some way phonetically distinct and moreover constitute different phonemes in the inventory of the language.

Additional information that can be gained from a consideration of OE verse texts is that OE (and indeed all early Germanic) verse was based largely on the principles of alliteration. This provides evidence of phonemic (and presumably phonetic) identity of certain segments. Consider for instance the discussion of the implications of alliteration on the account of palatal and velar alternants of Pre-OE /k/ and /ŋ/ given by Lass and Anderson (1975: 134-141), and the value of the evidence of alliteration in the analysis of [s]-initial clusters (§2.3.1.2.3; §2.1.2.1.2).

An examination of the distribution of graphs in both the Cp. MS and other extant OE material is therefore of great assistance to segmental phonological analysis of the Cp. dialect, particularly in the establishment of the abstract phonemic inventory.
1.2 Limitations

The following limitations are, however, common to evidence discussed in both §1.3.1.2.1 and §1.3.2.1.1.

As allophonic variation is not as a rule reflected in the orthography, presumably because 'our thinking is tied so very much to phonemes rather than to sounds' (O'Connor, 1973: 66), it is not possible to formulate realisation rules for the phonemes that have been established.

If the evidence of OE MSS is considered in isolation from any other type of data (in particular that of present day dialects, see §1.3.4), it is impossible to come to any conclusions as to even the broadest phonetic properties of the segments represented. As noted in §1.2.1, such information is crucial for a comprehensive phonological analysis and the fact that it cannot be recovered is a major shortcoming of the sources of evidence hitherto discussed.

There are also several potential dangers in the use of MS evidence for the reconstruction of a historical dialect. A major hazard lies in the possibility of taking an over-literal interpretation of the relationship that operates between the various graphs and phonemes.

The 'working hypothesis' (§1.3.1.2.1.1) that a 'one-to-one' correspondence operates between graph and
phoneme may hold true for most of the relevant data, but to follow this assumption rigidly in the analysis can be extremely misleading. It must be remembered that OE scribes were working within an established orthographic system and tradition. The possible demands and limitations of such conventions must be considered before any firm conclusions as to the nature of the phonological system represented in the spellings of the forms that appear in the OE MSS can be achieved. Instances where one-to-one correspondence between graph and phoneme evidently does not apply will be given detailed consideration in §2.2.

1.2.1

The following section, however, is a brief summary of the types of discrepancy that can arise and the various reasons as to why this should be the case.

(i) The written language is more conservative than the spoken

In the discussion of the oe spellings in Cp. (§2.1.8) it is established that the graph does not correspond to a segment with phonemic status in the synchronic system of the dialect represented by Cp. Rather, the use of the symbol reflects the language at an earlier stage in its development. This is due to the widely attested fact that 'the spelling is always later in representing a sound change than the sound change itself' (Colman and Anderson, 1983: 169). As the Cp. MS
dates from the early literary OE period (§1.3.1.1.1), spellings frequently appear which may well be interpreted as reflecting the phonological system of a dialect very similar to Pre-OE.

(ii) Free variation in the same lexical item

Where two graphs appear in identical contexts and the forms concerned represent the same lexical item, clearly no phonemic distinction is attested between the segments in question. Evidently, therefore, the one-to-one relationship between graph and phoneme cannot be said to apply in such instances. This 'free variation' can arise for a number of different reasons.

In some cases (possibly due to the overriding tendency towards symmetry in phonological systems, see §1.3.6.2.1.1(i) and compare (2.2.12) and (2.2.35), segments that are plainly allophonic variants of a particular phoneme come to be represented by different graphs. If the context that conditions the appearance of the variants remains either directly or indirectly (see (2.2.13) ft.2) in the surface form, the graphs concerned can interchange freely as it will still be possible to recover the broad phonetic value of the segment that occurs, no phonemic difference is involved.

Examples of this phenomenon in the Cp. data include the interchange of monograph and digraph spellings before consonants followed by back vowels and, in some cases at least, before /l/ or /r/ followed by a non-back consonant (§2.2.1.2.2.7; 2.3.4; 2.3.7).
A spelling system 'need not systematically record allophonic variants' (Colman and Anderson, 1983: 171) if it does so at all, and this can further upset any assumed one-to-one relationship between graph and phoneme.

Free variation can also occur when the contrast between two (or more) phonemes and/or archiphonemes has been suspended. In this case the archi- or hyper-phoneme (§2.2 ft.1) can presumably be represented by any of the graphs that represent the phonemes that enter into the neutralisation. Thus, while f and b represent distinct phonemes, in some environments they occur in free variation representing alloarchiphones of the archiphoneme /\V// (§2.2.3.3). To assume that either [f] or [b] was necessarily represented by the respective graphs when they appear in these neutralisation environments would constitute an over-literal interpretation of the spelling evidence.

The use of more than one graph to represent a single phoneme can also result from factors affecting the development of the orthographic system. For example, where th, d, ʃ and ʒ are used to represent allophones of /θ/ (§2.1.20–23), it is unlikely that the different graphs are used systematically to represent the different allophones of the fricative. In this case the 'free variation' can be seen to result from the confusion that arose when the OE scribes attempted to represent a segment which did not occur in the Latin
sound system and for which the roman alphabet did not readily supply a suitable symbol (§2.1.20.2 and references therein).

(iii) Analogue levelling

Another phenomenon which can disrupt the one-to-one relationship between graph and phoneme is that of analogue levelling:

the tendency of the exception to conform to the rule: the process whereby aberrant forms are sporadically levelled in the direction of the statistical norm

(Lass, 1969: 456). An example of this phenomenon in Cp. would be the use of the digraph ea to represent a short vowel segment which is in all probability not phonemic, simply because the corresponding long segments have phonemic status. In this case the existence of pairs of long and short vowels (identical in quality but not in quantity) represented by the same graph or digraph is 'the norm' in the language concerned (see further §1.3.6; §2.2.1.2.3.6; 2.3.3(i)).

An additional complication is that this 'analogy' may be graphic rather than phonological. Consider, for example, the appearance of ø in the past singular of strong verbs of class VI, as discussed by Ross (1951), Chatman (1958) and Colman (1983).

(iv) Economy in the orthographic system.

Due to considerations of economy in the orthographic system (i.e. it is desirable that the
maximum use possible should be made of the minimal number of graphs), the same graph may be used to represent more than one phoneme. As discussed in §2.1.15.1.2, two graphs, $h$ and $g$, can be used to represent the various allo-phones, -archiphones and -hyperphones of the three phonemes $\alpha\', \gamma\' /\gamma\' /$ and $/j/$. As the relevant three-way contrast occurs in a restricted set of environments, see (2.2.51) and (2.2.58), it was apparently not felt necessary to introduce a third graph into the orthographic system.

The above section, therefore, has listed various instances where the one-to-one correspondence between graph and phoneme does not seem to apply. In most cases a careful scrutiny of the distribution of the graphs concerned in conjunction with a consideration of available evidence from other sources will prevent any serious misinterpretation.

However, the danger of overliteral interpretation of the spelling evidence must be borne in mind when evaluating the usefulness of MS evidence for the reconstruction of phonological systems of historical dialects. An awareness of the extent to which an orthographic system can be expected to reflect the sound system of the dialect it represents is crucial before one can embark on any such investigation.
2 Suprasegmental structure

2.1 The value of this type of evidence

As is the case with the analysis of segmental structure described in 1 above, a consideration of the evidence of other OE MSS in addition to that of Cp. allows many of the shortcomings listed in §1.3.2.2.2 to be overcome. The increased range of material considered means that more monosyllabic forms are available as evidence of what constitutes a well-formed syllable in the dialect concerned. See, for example, §2.3.1.1, where it is only the evidence of material in other OE MSS that allows syllables consisting of a single vowel to be considered well-formed in Cp.

A consideration of the evidence supplied by OE verse texts also proves useful in suprasegmental analysis. Metrical evidence supports the status of the rhyme as a phonologically significant unit (§2.3.1.3). Metrical patterns also provide information as to OE stress assignment, which is crucial both for the identification of the basic units of suprasegmental structure and for establishing principles of syllable division (Campbell, 1959: §87; §2.3.3).

3 Morphological structure

3.1 The value of this type of evidence

Once more, many of the shortcomings of an analysis based on the evidence contained in the Cp. MS alone (§1.3.1.2.3.2) no longer apply.
(i) The isolation of roots and affixes.

Obviously, the isolation of roots on the evidence of the distribution of phonological strings (or rather the graphic sequences that represent them) will be far more comprehensive with an increased data base. The main value of the OE MSS other than Cp. for morphological analysis is, however, in the identification of (a) inflectional and derivational affixes and (b) the components they represent.

(a) The wider range of data consulted means that there is increased evidence for the isolation of affixes on distributional grounds, particularly those expressing the oblique cases of nouns and the various conjugational categories.

(b) As noted in §1.3.1.2.3.2, it is essential to have an idea of the syntactic and semantic context in which a form appears before the nature of the components represented can be ascertained and this is crucially lacking in the Cp. MS. Most other OE MSS however, especially prose texts, provide such contexts and this allows the morphological categories that accompany the lexemic component in a form to be identified, together with the means by which these are expressed. Eventually this information may be recorded in a range of inflectional and derivational paradigms. As lexical items can apparently be sub-classified according to the means by which the various non-lexical categories are expressed, there are also grounds for positing the
existence of non-lexical inflectional categories.

The complex morphological structure of forms where categories are expressed by root modification and suppletion should also be more obvious. For example, on the evidence of the form **turf** (which is attested in OE MSS other than Cp.), it can be seen that the categories 'nominative' and 'plural' are expressed by a process of 'root modification' in **tyrb**. If, however, the evidence from the Cp. MS alone were to be considered, it would be possible to maintain that they were given no overt expression: i.e. that the root *{tyrf}* is all that appears.

An examination of the data contained in the entire range of extant OE material therefore allows a far more comprehensive analysis of the morphological structure of the Cp. dialect than that suggested in §1.3.1.3.

3.2 Limitations

While the identification of most of the inflectional and lexemic categories represented on the basis of MS evidence alone presents little difficulty, that of the various derivational components that appear is not so straightforward. The existence of components which change the semantic sub-class of the major word-class to which a particular form appears is obviously difficult to recover from historical data alone.

Certain phonological strings recur in OE word forms
which do not seem to express inflectional components or change the major word-class of the form concerned. The only possible function of these strings (if they are of any significance to a morphological analysis) is that they represent class-preserving derivational components, and this is not easy to ascertain in the absence of first-hand semantic information (§1.3.4.2.3).

4 Summary

A consideration of OE MSS other than Cp. can therefore be of great assistance in the synchronic analysis of the phonological and morphological structures of the dialect represented. The fact that the data base is still to an extent artificially limited must once more be acknowledged.

Even if the evidence of every extant OE MS, coin and inscription is taken into account, the amount of written material available is clearly very small in comparison with that which exists for languages and dialects dating from more recent historical periods. It may well be the case, therefore, that a particular minimal pair, phonotactic sequence, or free-standing root may have existed in OE but is simply unrecorded in the texts that survive.

An awareness of this possibility can be seen to have considerable influence on certain conclusions reached in the course of the analysis in Chapters 2 and 3. Compare the analyses of the morphological structures
of *lynisas* and *gehæplice*, §3.2.2.3.2.3; (3.2.41) ft.1.

The danger of relying on the evidence of OE metre as an indication of stress assignment or phonemic vowel length must also be noted. The OE metrical system has been reconstructed to a large extent on assumptions about phonological structure (Suphi, 1985: Chapter 2.2). There is therefore an inherent circularity in the use of such evidence for phonological analysis, and it is advisable only when the conclusions reached can also be supported by data from other sources of evidence. The main danger in the use of evidence of other extant OE material for the analysis of the dialect represented by Cp. lies in the assumption that conclusions reached on consideration of the former should be held to apply to the latter. While such an assumption is clearly reasonable in the vast majority of instances in the absence of evidence to the contrary, it must be noted that the various dialects of OE can differ from each other quite considerably (Campbell, 1959: §§256-264, and the paragraphs on 'early late and dialectal forms' in chapters XI - XIV). The fact that ultimately the only evidence that can give a wholly reliable synchronic analysis of the dialect represented by any historical text is that of the particular text in question must be reiterated.
1.3.3 The evidence of languages diatopically related to OE

As discussed in the works cited in §1.3.5.1.2 it can be assumed that certain languages roughly contemporary with OE are to be considered in some way 'related' to it. The evidence of 'cognate' forms in these languages can assist in the synchronic analysis of the dialect represented by the Cp. MS.

Usually it will suffice for the purposes of the present account to consider forms in the Germanic (Gmc.) branch of the Indo-European (I-E) family (§1.3.5.1.2 and references therein) and this evidence is the most valuable, these languages being very closely related to OE. However, forms in other I-E languages provide another 'layer' of reference, the value of which should not be underestimated. See, for example, the discussion of the broad phonetic value of the segment represented by initial h (§2.1.14.1), which, it is claimed, has a velar rather than glottal articulation, largely on the evidence of the fact that [x] is the segment that would be most likely to develop from I-E [k]. Among the I-E languages, Latin has a special status as a source of evidence for the reconstruction of the Cp. dialect, and this is discussed in a separate sub-section, 4.
1 Segmental phonology
1.1 The value of this type of evidence

(i) The establishment of the phonemic inventory

An examination of the cognate forms in Gmc. (or even I-E) can assist in the confirmation of conclusions reached in §1.3.1.2.2 as to the nature of the abstract phonemic inventory of the Cp. dialect. If, for example, reference is made to established 'correspondence classes' (Hoenigswald, 1960: 69-71), it can be seen that the segment represented by $t$ in Cp. regularly corresponds to segments represented by $\tilde{t}$ in cognate forms in the related languages.

Compare Cp. -stan (teblstan, line 349) Go. stains, OHG stein, OS, OFr. sten.

If we have independent evidence that the segment concerned has phonemic status in these languages, this confirms the assumption (based largely on the evidence discussed in §§1.3.1. and 1.3.2) that $t$ represents a segment with phonemic status in OE dialects.

Furthermore, the evidence of cognate forms in some cases draws attention to phonemic distinctions which are not immediately obvious from a consideration of the OE data alone (with the possible exception of verse MSS, see §1.3.2.1.1). It can be seen that the segment represented by OE $a$ in some cases corresponds to segments represented by $e$ and $ei$ in forms from the diatopically related languages. In other lexical items, however, OE $a$ is apparently equivalent to cognate $a$ and
This suggests that the segments concerned, although they are generally represented by the same graph in OE MSS, are extremely likely to belong to different phonemes. This provides welcome support for the suggestion that vowel length is phonemic in OE, as it confirms conclusions based on the evidence of OE metre.

An examination of forms in languages diatopically related to OE is therefore of some assistance in the establishment of the abstract phonemic inventory, but yet again no information as to the identification of the broad phonetic values of the segments represented (and hence the existence of any allophonic variants) can be recovered by such means alone.

2 Suprasegmental structure

(i) The nature of the well-formed syllable

For the identification of the nature of the well-formed syllable (essential for the establishment of the principles of syllable division, see §2.3.3.1), the evidence of monosyllabic forms in the cognate Germanic languages, where the phonotactic constraints represented seem to be much the same as those that operate in Cp., supports the analysis based on the evidence of the forms in that MS alone. For example, the evidence of OHG stein, Go. stäins, OFr. OS sten confirms the assumption that [st] is a permissible syllable-initial cluster in the Cp. dialect.
However, while it may be the case that the phonotactic constraints that operate in various languages show a great deal of similarity (due to the fact that they seem to be influenced by the relative sonority of the segments concerned, see §2.2.2.5.3.1), they are ultimately language specific. The evidence of cognate forms can therefore only be used to confirm conclusions based on the data discussed in §§1.3.1 and 1.3.2. Where, for example, a syllable-initial sequence apparently permissible in cognate forms, e.g. OHG [pf-] pfung (2.1.236), is not attested in OE, it cannot be maintained that the sequence in question is acceptable in the dialect represented by Cp.

(ii) Stress assignment

It is unlikely that the rules of stress assignment are sufficiently well documented in the various Germanic languages to allow fruitful comparison between them. Theoretically, however, where the stress pattern observed in 'cognate' forms agrees with that of the Cp. form under consideration (as is often the case, see Campbell, 1959: §71), this confirms conclusions based on the OE data. Should, however, any differences be apparent between the stress patterns assigned to a form in Cp. and that of its cognates, the OE evidence must be considered more important.

The main value of the evidence of diatopically related languages for a synchronic analysis of the
suprasegmental structure of the Cp. dialect is therefore that it confirms analyses based on the OE data.

3 Morphological structure

3.1 The value of this type of evidence

(i) The isolation of roots and affixes

The main value of the evidence of forms from the early Germanic languages for a synchronic morphological analysis of the dialect represented by Cp. is that such forms may fill in 'accidental' gaps in the OE evidence and thus assist the identification of roots in the MS.

As noted in §1.3.2.4, it is possible that certain roots are simply unrecorded as such in the extant OE data. If a particular root seems to be attested in a form in a cognate Germanic language, this may confirm other available evidence (§1.3.5.2.3.1(iii)) and suggest that its failure to appear in the OE material is simply a matter of chance (see the analysis of lynisas, §3.2.2.3.2.3; and Lass (1984: Ch. 4)).

Obviously, this can never be conclusive evidence of the derivationally complex nature of a form, but it can have a degree of influence on the classification of certain entries in the Corpus Glossary.

(ii) The identification of morphological components

There is frequently a great deal of similarity in the expression of the various morphological categories in the cognate languages. When this (and the syntactic
and semantic contexts in which a form containing a particular affix appears) is taken into account, the evidence of the cognate languages can support conclusions based on the OE data alone.

For example, the isolation of the affix \{mis\} in \textit{misbyrd}, (3.2.50) \(j\), and the suggestions as to its derivational function are presumably supported by the fact that Go. \textit{missa}-; OS, OFr. \textit{mis}-; OHG \textit{missa}-, \textit{missi}- can be seen to have a similar function in these languages.

3.2 Dangers

It is theoretically possible that a root may be used in its simple (free) form in any of the Germanic languages. This may obscure the complex nature of certain forms in the Cp. dialect. In the case of the form \textit{cardella} (-uelis); \textit{pisteltuige} 'thistle-finch' 381 (cf. OE \textit{pistel}, OHG \textit{distil})

there is no evidence in either OE or the diatopically related languages that the sequence represented by \textit{-el} should constitute a derivational affix, although it can be 'suspected' that this may be the case (§3.2.2. 3.1).

4 The evidence of Latin

Among the non-Germanic I-E languages, Latin has a special status as a source of evidence for the reconstruction of any OE dialect, especially as far as its phonological structure is concerned.
4.1

This is in part due to certain factors that affect the history of the evolution of the OE spelling system. OE texts are written for the most part in the roman alphabet, various adaptations and additions having been made where necessary (Campbell, 1959: §23).

The broad phonetic characteristics of the segments of Classical Latin have been reconstructed with a fair degree of certainty by many scholars (see, for example, Allen, 1965), and this fact has important implications for the analysis of the phonological system of OE dialects.

(i) The recovery of broad phonetic values

The sources of evidence considered so far (§1.3.1.–§1.3.3.3) have been of no assistance in the recovery of the broad phonetic values of the segments represented by the various graphs in either Cp. or any other OE MS. The fact that this can be established for the graphs as they are used in Classical Latin can therefore be seen to be of great value for the interpretation of the OE material. Presumably, when a particular graph was selected from the roman alphabet to represent an OE sound, it can be assumed that the broad phonetic value of this segment will be closer to that of the Latin segment represented by that particular letter than that represented by any other graph in the alphabet in question.

For example, if we have independent evidence that
the graph \( p \) when used in Classical Latin represents a bilabial plosive, it can be deduced that at least the segment represented by \( p \) in \( Cp. \) has more in common with the voiceless bilabial \([p]\) than, for example, the voiced bilabial \([b]\), or the voiceless fricative \([f]\): the latter two segments are represented by \( b \) and \( f \) respectively in the orthographic system of Classical Latin (Allen, 1965: 21; 34-35). For this reason, the value of the segment represented by the various graphs in Classical Latin is always taken into consideration in §2.1.

Where the symbol that appears in an OE MS is not part of the roman alphabet (e.g. \( \breve{a} \) and \( \beta \)), it can be concluded that the sound represented is in all probability phonetically quite distinct from any segment attested in Classical Latin, and the attempt to recover the phonetic characteristics of the segment concerned can therefore proceed on this basis.

The findings of Classical philologists, together with a knowledge of the history of the developments of the OE spelling system, can therefore give some indication of the broad phonetic value of the segments represented by certain graphs in the OE material.

4.2 Loan words

Another way in which the evidence of Latin in particular can assist in the recovery of the broad phonetic values of segments represented by the various
graphs in Cp. and other OE MSS lies in the fact that many words were borrowed from Latin into OE (Campbell, 1959: §§565-7). While in cases where the similarities between a particular Latin and OE form can be seen to recur in an entire set of lexical items the forms must be considered cognates, if an OE and Latin form are similar, and no other lexical items display the particular similarity concerned, it can be assumed that the word has been borrowed from one language to the other. Compare, for example,

Lat. pater    OE fæder 'father'

(which, on the evidence of e.g. Lat. piscis, OE fisc 'fish' must be considered cognates) with forms such as

OE cetil,     Latin catillus 'pot, kettle'
OE cyse,      Latin caseus 'cheese'

the similarities between which are not systematically attested in sets of lexical items, These are therefore presumably best considered to be loan words.

When the same graph is used in the representation of a word when it appears in both Latin and OE MSS alike, this confirms the assumption made in 4.1 above that the segments represented by the graph will show a degree of similarity in both languages. For example, it is unlikely that ñ in OE ele 'oil' would have come to represent a segment which was radically different from that represented by ñ in Latin oleum. In the light of independent evidence that the graph represents segments with the value [1] in Latin (Allen, 1965: 33-34), this
confirms the claim that 1 should also represent [l] in native OE el 'eel'.

Furthermore, as vowel quality can be independently established for most Latin forms (Allen, 1965: Ch.3) and can in some cases at least be assumed to remain constant in the transition to OE (for exceptions, see Campbell, 1959: §503), this can be taken as evidence that the segments represented by i in forms such as OE wind 'wind' and win 'wine' are phonetically, (and presumably phonemically) distinct.

4.3

Where forms are borrowed from OE and other Germanic languages into Latin, a consideration of the ways in which the Latin scribes record the material can provide further information as to the broad phonetic value of the segments represented in Cp. and other OE MSS. According to Penzl (1972: 6), these early Germanic loans in other languages are important because they were partly borrowed before our earliest written texts. They may supplement the Germanic lexical Corpus.

The evidence of Latin, therefore, has special value for the analysis of the phonological structure of the dialect represented by Cp. in that it assists in the recovery of the broad phonetic values of the segments represented by the graphs in the MS. However, it is impossible on the basis of the Latin evidence alone to establish the abstract phonemic inventory of the Cp.
dialect, as this crucially depends on a consideration of the distribution of the graphs in the MS itself (§1.3.1.1).

4.4 Dangers of this type of evidence
(i) One of the main disadvantages of this type of evidence is that varying interpretations of the Latin sound system are, of course, possible. Theoretically, accounts of this are as speculative as any reconstruction of the sound system of OE based on the evidence of PE dialects, although they are generally supposed to be more accurate (Gimson, 1980: 73).
(ii) It can only be assumed that the value of the OE segment represented is 'approximately' the same as that suggested for its Latin counterpart. That it should resemble a particular Latin segment more closely than any other is as much accuracy as we can hope to achieve in this respect.
(iii) It may be the case that the scribe composing an OE MS would be faced with a choice as to which graph from the roman alphabet he might use to represent a particular OE segment. A knowledge of the nationality of the scribe and the nature of his education, the history of scribal practice and the conditions under which the MS was written may be helpful in ascertaining the factors which could influence his choice. This type of information is, however, not always available.
Furthermore, the method of the transmission of a loan
word may also influence its representation in OE, and this is not always recoverable (Penzl, 1972: 12).

(iv) Finally it must be noted that the number of Latin loan words is limited in relation to the entire corpus of extant OE material. Thus, while this source of evidence is extremely valuable for the reconstruction of various aspects of the phonological structure of OE dialects when it does appear, its relative paucity must be acknowledged.

1.3.4 The evidence of diacronically related dialects

The evidence of dialects which belong to the same diachronic linguistic continuum as that represented by the Cp. MS are also of some use to the synchronic analysis of that dialect.

The dialects concerned are

(1) dialects of, or near contemporaries with, present day English (PE)

(2) dialects of the historic English period: i.e. those for which written evidence is available.

1 The nature of the evidence

1.1 PE

As we are not forced to rely crucially on written evidence alone (as is the case with the sources considered in §§1.3.1.-3 above) comprehensive phonological and morphological analyses of PE (or indeed any contemporary language or dialect) can be achieved
without difficulty. The results of such analyses are well-documented in the literature (see, for example, Gimson, 1980; Bauer, 1983; and so on).

1.2 Dialects of the historic English period

Comprehensive accounts of the nature of this material are given by Baugh (1935), Strang (1970) and Barber (1972). The dialect continuum from OE to the present day is traditionally divided into the following sections: Middle English early Modern English and 'English in the Scientific Age' (Barber, 1972: 204), the language of the period from the late 17th. century to the present day. As is the case with OE and the dialects diatopically related to it, the nature of the dialects of the historical English period must essentially be surmised from a consideration of the texts that represent them. No first-hand phonetic information is available.

However, it is possible to achieve a more comprehensive reconstruction of these dialects than is generally the case for OE and the other early Germanic languages. This is due in some respects to the very nature and scope of this written evidence. An extensive number of verse texts survives from the historic English period, which, as in the case of OE verse MSS, supplies evidence for stress assignment and vowel length. In addition, the fact that during the course of the historic English period verse becomes
increasingly based on the principle of rhyme as opposed to alliteration, means that there is increased potential for recovering phonemic shifts, splits and mergers from an examination of this type of evidence (Penzl, 1957: 204-205).

As the ability to write becomes more widespread amongst the population, 'naive' spellings (Penzl, 1957: 202) begin to appear which can reflect phonological development and assist in the recovery of broad phonetic values.

The large influxes of loan words at certain periods in the development of the English language (Strang, 1970: 121-129; 250-258; 313-315; 338), as is the case in OE, can give useful evidence as to the broad phonetic values of the segments represented and assist in the reconstruction of phonological developments.

Furthermore, in the comparatively recent historical period, both the external history and the nature of the language itself are far more extensively documented than is the case with the data considered in §§1.3.1 - 1.3.3. From the early Modern English period, descriptions of the language begin to appear (Gimson, 1980: 57 - 64). These are clearly very helpful to the analysis, particularly in the reconstruction of broad phonetic values and the principles that underlie metrical structure. The only evidence of this type that is even roughly contemporary with the OE period
is that of the First Grammatical Treatise, a 12th-century Icelandic MS (Haugen, 1950). Any information that can be gleaned from this text about the nature of Old Icelandic is, of course, indirectly relevant to the reconstruction of OE and the Cp. dialect, especially in the recovery of broad phonetic values. In addition, its description of the correlation between letter shape and the nature of the segment represented supports our interpretations of the values of the graphs æ, oe and y (§2.1.3; §2.1.7; §2.1.8).

Finally, it must be noted that the more recent the text under consideration, the easier it is to place it diatopically and diachronically, as this type of information becomes more readily available in the later historical English period.

2 The value of the evidence

Much of the value that the evidence of PE dialects and those of the historic English period offer for the reconstruction of the synchronic phonological and morphological structure of the dialect represented by Cp. lies in the fact that they help to establish the nature of synchronic and diachronic phenomena that are to be considered phonetically natural or typologically plausible. This will be given extensive consideration in §1.3.6. In addition, however, the evidence of dialects diachronically related to Cp. can be of some
assistance in the reconstruction of various aspects of that dialect.

2.1 Segmental phonology

The evidence of PE dialects can be seen to be of crucial importance for the reconstruction of the phonological system of Cp.

(i) The recovery of broad phonetic values

This is largely due to the fact that first-hand phonetic evidence of the value of the segments represented by the graphs in PE texts is readily available. If it is assumed (as seems reasonable) that the value of a segment represented by a particular graph in an OE MS will be similar to that represented by the same graph in the PE orthographic system, the broad phonetic values of the segments of OE can be recovered to a large extent (see Hoenigswald, 1960: 135; Penzl, 1957: 206). Thus in §2.1. the phonetic value of the segment represented by the graph in question in the PE spelling system will always be considered.

(ii) The establishment of the phonemic inventory

PE evidence can support the conclusions as to phonemic vowel length based on a consideration of OE metrical structure. This is welcome in view of the inherent circularity of the latter type of evidence. For example, the fact that the vowel in the PE reflex of OE scoh 'shoe' is different (phonetically and
phonemically) from that in the reflex of OE horn. 'horn' suggests that this contrast should also apply to the segments represented in Cp., although the graph o appears in both cases.

Other than this, the evidence of the PE phonemic inventory serves to confirm that suggested for the Cp. dialect on the basis of the distribution of the graphs in the MS (§1.3.1).

As certain aspects of the extant material in historic English dialects (for example, the comments of orthoepists, the evidence of loan words, and 'naive' spellings) suggest that this source of evidence contributes to an awareness of the broad phonetic values of the segments represented by the graphs in question at various stages in the development of the language, this can be of some assistance in the recovery of such information for the Cp. dialect. It must be noted, however, that in certain cases a particular graph or sequence appears in Cp. but does not feature in the PE spelling system (for example, æ, œ, þ). In such an event, PE evidence is obviously of no assistance in the recovery of the value of the segment represented. Furthermore, due to diachronic developments that affect the language (§1.3.5), it cannot always be assumed that the phonetic values of the segments represented by a particular graph will be similar in OE and PE alike. Compare, for example, the difference in the qualities of the segments in the long vowel system at each stage in
the history of the language (§2.1.1.1 and the references therein), or the fact that the segment represented by initial ⟨g⟩ (Cp. [ɢ]) has developed to a stop in PE (§2.1.15.1.1).

2.2 Suprasegmental structure

The main value of the evidence of PE and historical English dialects for the analysis of the suprasegmental structure of forms in Cp. lies in the fact (noted above) that such evidence brings us to a closer idea of what are to be considered phonetically natural phenomena (see §1.3.6). Otherwise, as is the case with that offered by dialects diatopically related to Cp., the value of this type of evidence is largely as a confirmation of conclusions reached on the basis of the OE material. For example, the validity of the suggestion that certain phonotactic combinations are acceptable on the basis of evidence discussed in §1.3.1 and §1.3.2 is supported if the combinations in question are also attested in PE.

Similarly, if the stress pattern assigned to the PE reflex of a form in Cp. agrees with that suggested on the basis of a consideration of the OE data, this confirms that the proposed analysis is acceptable. In some cases PE evidence can be seen to influence the final decision. For example, the suggestion that the root rather than the prefix in misbyrd, (2.3.18) (b), carries the main stress is based on the fact that this is the case in PE (2.3.19). However, as the
actual rules of stress assignment differ greatly between the OE and PE periods (Suphi, 1985: Ch.3), PE evidence is not generally of any value in establishing the abstract principles of stress assignment that operate in OE.

2.3 Morphological structure

The main value of the evidence of PE and historical English dialects for an analysis of OE morphological structure is that semantic information is instantly recoverable.

(i) The identification of components

As noted in §3.2.3, the function and meaning of certain derivational components is not always recoverable from the OE evidence, and if the reflex of the affix concerned exists in PE this may be the only means by which this information may be ascertained.

This type of evidence is particularly useful in the identification of class-preserving affixes. For example, it is presumably largely on the basis of PE evidence that it can be claimed that the prefix (un) has the function of changing the semantic sub-class of the relevant form from 'positive' to 'negative'. It must be noted, however, that this type of evidence is not wholly reliable: while -ock appears to function as a diminutive in PE (‘hillock’, ‘paddock’), the same suffix (or at least a unit with the same phonological shape) does not have the same function in the
Cp. dialect: compare *spærhabuc* (3.2.69).

Otherwise, just as is the case with the evidence of diatopically related dialects, the material in dialects diachronically related to Cp. can assist the morphological analysis by filling in 'accidental' gaps in the OE evidence: compare the analysis of *gehæplice* (3.2.41).

Given the general trend in morphological development (§1.3.5.2.3.1.(iii)), it can be seen that if a root is attested in the historical English period or in PE, this can be taken as fairly convincing evidence that the OE form concerned is derivationally complex. As the complex inflectional system of OE is gradually lost in the course of the historical English period, evidence from PE is normally of little use in the identification of OE inflectional affixes or the components they represent.

3 Summary

3.1 The values of this type of evidence

To view dialects diachronically related to that represented by the Cp. MS as in a sense 'cognate' to that dialect can therefore be of some assistance to the analysis of its phonological and morphological structure. It must be observed, however, that the data discussed in this section is more useful than that of diatopically related dialects in several respects.

(i) it assists in the recovery of what are to be
considered 'typological' and 'natural' phenomena (see §1.3.6).

(ii) as PE can be 'directly observed in the field' (§1.3), it provides first-hand phonetic and semantic information which obviously has great implications for the analysis of the Cp. dialect.

3.2 Disadvantages

(i) Although the features mentioned in 1.2 mean that a more comprehensive awareness of the nature of dialects of the later historical English period is possible than is the case with OE or the contemporary Germanic languages, the evidence of the orthoepists and 'naive' spellings in particular are somewhat sporadic in their appearance, and are also open to misinterpretation.

(ii) It is difficult to establish a direct line of development between the dialect represented by Cp. and a particular dialect of PE.

The latest surviving evidence of a dialect that can be said to be directly related to that represented by the Cp. MS dates from the ME period. (Hogg, 1977; Dresher, 1980). Apparently the dialect concerned is not an ancestor of standard PE, and, as such, various features of the Cp. dialect cannot be recovered on the consideration of this type of evidence alone. Consider, for example, PE 'craft', which might suggest that \( e = [\varepsilon] \) in uuyndecreft (2.1.35), whereas \( [e] \) is in all probability the realisation in Cp. (§2.1.2.4).
(iii) As with the evidence discussed in §1.3.2 and §1.3.3, it must be reiterated that the assumption that the evidence of dialects considered should be directly relevant to the analysis of the Cp. dialect is purely speculative, and ultimately any analysis of that particular dialect must be based on a consideration of the material in the Cp. MS alone.

1.3.5 The diachronic developments that affect the linguistic continuum to which the Cp. dialect belongs

§§1.3.1 to 1.3.4 discuss the evidence for reconstruction of the dialect represented by Cp. that is offered by an observation of synchronic stages of various languages and dialects: the dialect represented by the Cp. MS itself, and those diatopically and diachronically related to it.

It remains to consider the value of the evidence of the developments that can be assumed to occur between the various different stages of the linguistic continuum to which the Cp. dialect belongs. According to Penz1 (1972: 13)

the knowledge of preceding or following stages can, generally speaking, be of great importance in synchronic analysis.

Basically, any conclusions reached as to the synchronic phonological and morphological structure of the dialect represented by Cp. should fit into a diachronic
perspective: the analysis proposed must be seen to have developed from, and to develop into, the preceding and following stages of the relevant linguistic continuum by processes which are either 'typologically plausible' or 'phonetically natural' (see §1.3.6). For the most part this type of evidence supports conclusions reached on the basis of that discussed in §§1.3.1 - 1.3.4, but in some cases it can be seen to provide valuable additional information.

1 The Data
1.1 The stages of the linguistic continuum that 'follow' the dialect represented by the Cp. MS

Evidence of the 'following' stages of the linguistic continuum to which Cp. belongs is to be found in the body of extant material written in English dating from the early 8th century to the present day. This includes

(i) most OE MSS written in the Mercian dialect (see ft. 21)
(ii) the evidence of PE dialects and those of the historical English period, the nature of which have been discussed in detail in §1.3.4.1 above.

1.2 The 'preceding' stages of the linguistic continuum

As established in §1.3.1.1.1, Cp. is apparently one of the earliest surviving texts written in OE (or indeed any other Germanic language). There is therefore very
little extant evidence on the basis of which the nature of the 'preceding' stages of the dialect represented by Cp. can be ascertained. However, this information can be recovered to a considerable extent by the processes of comparative and internal reconstruction, detailed accounts of which are given by Penzl (1957; 1972), Hoenigswald (1960) and Bynon (1977: part one).

By these methods an extensive inventory of proto- and pre-forms (composed of proto- and pre-phonemes) for Proto-Germanic and Pre-OE respectively can be established. The following section gives examples of the type of developments that can be seen to affect the phonological and morphological systems of the English language in the course of its development from PG through OE to PE and discusses their value as evidence for the synchronic analysis of the dialect represented by the Cp. MS.

2 Its value for the analysis of Cp.

2.1 Segmental phonology

Diachronic developments that affect the phonological systems of languages can generally be divided into two main categories:

(i) phonemic changes: i.e. those that affect the phonemic inventory of the dialect concerned

(ii) phonetic changes: i.e. those that affect the broad phonetic values of individual segments without altering their phonemic status.
Obviously, in practice, it is not possible to make a rigid distinction between these two types of development: phonemic change, for example, nearly always involves a change in the phonetic realisations of the phonemes involved. A consideration of the effects of these two types of development can be seen to have considerable influence on possible conclusions as to the nature of the synchronic phonological system of the dialect represented by Cp.

2.1.1 Phonemic change

According to Penzl (1957: 193-197) there are three main types of phonemic change:

(i) phonemic shift
(ii) phonemic split and
(iii) phonemic merger; which can either be total (i.e. attested in all environments) or partial (i.e. attested in a limited number of environments, resulting in the neutralisation of the opposition between two phonemes).

The special case of 'merger with zero' (i.e. phonemic loss) must also be considered.

(a) The evidence for phonemic change

Obviously there can be little direct evidence of any phonemic change that occurs in the period before the composition of the Cp. dialect, as no extant evidence survives from this period. As far as developments in the historic English period are concerned however, it can
be assumed that any regularly attested change in the spelling of certain lexical items between different synchronic stages in the history of the language can be taken as evidence of phonemic change.

By this means the occurrence of shifts, splits and total mergers can generally be recovered, although it must be noted that the spelling system is sometimes slow to reflect these developments: see, for example, the discussion of the segments represented by $c$ (§2.1.17) or of the unstressed vowels represented by $a$, $i$ and $e$ (§2.1.2.6; §2.1.3.5; §2.1.4.5).

After the English orthographic system had been standardised, such developments received no reflection in the spelling, a fact which accounts for the many discrepancies that arise between conclusions based on an observation of PE data and those suggested by evidence from other sources. Compare, for example, the discussion of the broad phonetic values of the long segments represented by most vowel graphs in Cp. see §2.1.1—§2.1.13 and Baugh (1935: 294-296).

Where graphs interchange in the same environment (and, more convincingly, in the representation of the same lexical item) it can be assumed that a neutralisation has occurred between the phonemes normally represented by the graphs concerned (Penzl, 1957: 200-201).

Sporadic evidence of phonemic change, especially in the historic English period, is offered by a
consideration of rhymes, naive spellings and the comments of the orthoepists, as discussed in §1.3.4.1.2.

The treatment of loan words that have entered the English language can give some evidence of the nature of historical developments, even those that have occurred in the prehistoric OE period. For example, by a comparison of OE martyrdom 'martyrdom' and earc 'arc', it can be seen that the stressed vowel in the latter form has undergone certain developments in the prehistoric OE period which the former, having entered the language at a later stage, has apparently escaped (Campbell, 1959: §495).

(b) The effects of phonemic change

(i) Phonemic shift

As a result of this development, a particular phoneme will be lost from the inventory to be replaced by a new one. The term also covers changes into or from consonant clusters ('mono-' or 'di-phonemicisation': Penzl, 1957: 196-197). Examples of phonemic shift relevant to the synchronic phonological analysis of Cp. include:

- The development of /ʊ/ to /d/ in the W-G languages (§2.1.20.1) on the basis of which it can be concluded that there is only one dental fricative phoneme in the dialect represented by Cp: that which has developed from PG /θ/. This type of evidence is particularly useful as in this case a consideration of the distribution of the graphs that appear in the MS offers little indication of
the phonemic status of the segments concerned (see §2.2.2.4).

- The monophonemicisation of /sk'/ to /ʃ/, which is given 'belated recognition' (Penzl, 1957: 201) in the spelling of the forms concerned (§2.1.28), apparently occurred at some stage in the OE period. An awareness of the fact that this development may have been completed by the date at which the Cp. MS was composed leads us to reconsider our interpretation of the graphic sequence sc, and it can be concluded that a single phoneme rather than a cluster is in all probability represented. This fact cannot be recovered from a consideration of the spelling evidence alone.

(ii) Phonemic split

This development, defined by Penzl (1957:196) as 'the bifurcation of two phonemes out of the allophones of one initial phoneme', results in the addition of phonemes to the basic inventory.

Examples of this type of development which may affect conclusions as to the phonological structure of the dialect represented by Cp. include:
The phonemic split of the velar and palatal allophones of the reflex of PG /k/ (see §2.1.17 and references therein) which is again 'belatedly recognised' in the spelling system. On the basis of this development, a phonemic opposition between either /k/ and /k'/ or /k/ and /tʃ/ can be assumed in the inventory of the Cp. dialect (§2.2.2.2). Once more, due to the natural conservatism of the orthographic system and the absence of an appropriate symbol to represent the palatal segment, this contrast is not evident from a consideration of the MS evidence alone.

The split that phonemicises the front rounded allophones of the reflex of PG /u(:)/ which is completed once the evidence of the context for 'i-mutation' has been lost. This presumably occurred in the Pre-OE period (§2.1.7). Although in this case it can be suggested that /y/ and /y:/ have phonemic status in the Cp. dialect on the basis of the distribution of the graphs in the MS itself, an investigation of the relevant diachronic developments confirms this conclusion and also supplies welcome information as to the broad phonetic value of the segment represented by the graph y (§2.1.7).

(iii) Phonemic mergers

Total merger

These result in the loss of a phoneme from the inventory of the dialect concerned. Examples of this
phenomenon which affect conclusions as to the synchronic analysis of the phonological system of the dialect represented by the Cp. MS include:

- The unrounding of /ʌ(:)/ to merge with /e(:)/, as reflected in the replacement of oe spellings by e in the representation of the relevant lexical items in MSS of the early and late OE periods respectively. An awareness that this development had in fact taken place by the period Cp. was composed is essential to avoid misinterpretation of the spellings that appear in that MS. The fact that both oe and e may occur at first seems to indicate that the segments represented are distinct phonemes in the language, whereas in all probability the oe spellings appear as a result of the fact that the orthographic system is slow to reflect phonemic development.

Similarly, the merger of front unstressed vowel phonemes in the prehistoric OE period (as reflected in the replacement of æ and i by e in various inflectional affixes in texts dating from all but the earliest OE period) can be supposed to have been completed in the Cp. dialect (§2.2.1.3.2). Unless one is aware that this is the case, it would be tempting to posit three phonemes (/æ/, /i/ and /ə/) instead of one, whereas the spelling variation between æ, i and e is best explained as being due to the fact that the orthographic system tends to be more conservative than the spoken language.

Partial merger (i.e. 'neutralisation')
In this case the contrast between phonemes is suspended in certain specific environments. While this does not affect the number of phonemes in the basic phonemic inventory of the dialect concerned, it does result in the necessity to include more abstract functional units in the system, i.e. 'archiphonemes' and even 'hyperphonemes' (§2.2 ft.1).

An example of this process as it affects the synchronic analysis of the Cp. dialect would be the neutralisation of the opposition between /f/ and /b/ in foot-medial and (at least temporarily) foot-final position (§2.2.3). This leads us to suggest that the archiphoneme //V// occurs in these positions. Evidence of this development is to be found in the interchange of the graphs f and b, especially in the representation of the same lexical item, (2.2.64) ft.2. In this case a consideration of the relevant diachronic developments is essential for an accurate reconstruction of the phonemic system, as otherwise it would be possible, on the basis of the fact that both f and b spellings appear in the relevant environments in the Cp. MS, to suggest that the /f/ # /b/ contrast was in operation. Only the sporadic examples of 'free variation' in the same lexical item prevent such an assumption.

Merger with zero: 'phonemic loss'

The nearest example of this phenomenon relevant to Cp. would be the loss of the reflex of PG /X/ between voiced segments in the prehistoric OE period, as is
evident in the fact that h spellings are very rarely attested in this environment (§2.1.13.3). This development results in the neutralisation of the contrast between /x/ and /k/ in Cp. and the archiphoneme //x// can be posited (§2.2.2.1.2.3).

Again, the fact that the contrast is suspended in the Cp. dialect may not be immediately obvious from a consideration of the spellings that appear in the Cp. MS itself. A very careful scrutiny of the distribution of the graphs in the MS would be necessary before the (almost) complete absence of h spellings in medial environment could be detected.

The value of the consideration of diachronic evidence for a satisfactory analysis of the synchronic phonemic inventory of the Cp. dialect is therefore illustrated once more.

2.1.2 Phonetic change

As noted in §1.3.2.1.2, allophonic variation is rarely systematically recorded in the spelling evidence. Any suggested instances of phonetic change (i.e. developments that affect the broad phonetic realisation of segments without altering their phonemic status) must therefore be based primarily on considerations of 'phonetic naturalness' (§1.3.6).

§2.2.1.2.3 however, reveals that due to the fact that the general pattern in OE is for the same graph to represent both long and short vocalic segments with the
same quality, it is occasionally the case that segments which have the status of allophonic variants, for example [æ] and [ə], are given separate representation in the spelling, as ea and a. The appearance of such spellings can be interpreted as suggesting that phonetic change not only affects the stressed vowels in the forms concerned but also certain adjacent consonantal segments, such as /l/ or /r/ when followed by non-velar consonants (§§2.1.24.2; 2.1.25.3).

Examples of phonetic change which are relevant to the synchronic analysis of the phonological system of the dialect represented by the Cp. MS include:

The development of Pre-OE [æ] (the existence of which can be postulated in the case of the forms concerned or the evidence of comparative and internal reconstruction ) to [æ] or [ə] when followed by a 'back' consonant (§2.1.1.2.1;2.2;2.3;2.4). On the basis of this development it can be suggested that [æ] and [ə] are allophones of /æ/ (§2.2.1.2.3).

The development of Pre-OE [k] to [k'] and [χ] to [ç] in certain contexts reveals that the archiphonemes concerned show allophonic variation (§2.2.1.2; 2). Again this development, as well as being phonetically natural (§1.3.6.2.1.2), is reflected to a certain extent in the spellings that appear: monograph spellings are attested for the reflexes of Pre-OE diphthongs (§2.1.2.1.2.1;2.6;§2.1.3.1.3).
2.1.3 Summary

(i) The value of this type of evidence

A consideration of the diachronic developments that can be assumed to affect the linguistic continuum to which the dialect represented by Cp. belongs is therefore crucial for a satisfactory analysis of the synchronic phonological system of that dialect.

On the basis of this source of evidence

(a) the phonemic inventory suggested by a consideration of the distribution of the graphs that appear in the relevant MSS is supported

(b) the necessity for occasional amendments to this inventory is revealed (§2.2.1.2.3)

(c) the existence of certain allophonic variants can be posited, information which is not as a rule evident from a consideration of the spellings that appear.

The basic analytical procedure followed in §2.2, where analyses of the phonological system based on both a consideration of the distribution of the graphs concerned and the diachronic development of the various segments are compared and contrasted can therefore be seen to be the most effective means of reaching a comprehensive and convincing final reconstruction. While in many cases the developments that can be assumed to have affected the language before the Cp. MS was composed (i.e. those in the PG and Pre-OE periods) are in a sense more crucial to the analysis and therefore receive more extensive consideration, the evidence of
developments that occur in the historic English period is also useful in that it allows the apparent discrepancies between the analyses suggested for the Cp. and PE data to be reconciled.

(ii) Disadvantages

The main disadvantage in the use of this type of evidence for a synchronic analysis of the Cp. dialect lies in the fact that the available evidence for phonemic change can be open to misinterpretation.

The suggestion that the nature of changes that affect the language in the historical period can be recovered from a consideration of consistent changes in the spelling of certain lexical items holds true in the vast majority of cases (as in the replacement of oe by e discussed in 2.1.1.(b) (iii) above).

However, in addition to the fact that the orthographic system is slow to reflect such developments, thus obscuring the correct synchronic situation (§1.3.2.1.2.1(i)), it must be acknowledged that such a phenomenon could merely reflect a change in spelling convention. For example, the replacement of th spellings by þ in MSS dating from the later OE period (§2.1.22) does not reflect a change in phonemic status or broad phonetic realisation. The only conclusive proof that phonemic change has occurred is in cases where 'back', 'reverse' or 'inverted' spellings are attested, see Lass (1969:461); Penzl (1957: 203), which confirm that the segments once represented by the graphs
in question are no longer distinct.

Such spellings, therefore, are considered to be of great value in the analyses in §2.1 and §2.2. This is particularly evident in cases such as the neutralisation of the opposition between /f/ and /b/ in certain contexts, where the natural conservatism of the spelling system may lead us to suggest that the contrast is still attested (§2.2.2.3.3).

It must be stressed that such changes in spelling convention must be relatively consistent before they can be taken as evidence of phonological change. Otherwise the possibility of scribal confusion or error cannot be discounted. For example, on the evidence of the form sarwa alone, it is not desirable to suggest that Pre-OE [ɔ] became [o] rather than [ə] before /r/ followed by a labial consonant in the Cp. dialect, (2.2.13) ft. 2 (see further Penzl, 1957: 198).

The fact that the evidence of rhyme, naive spellings and the orthoepists in the historic English period can be open to misinterpretation has been noted in §1.3.4.3.2.

2.2 Suprasegmental structure

A consideration of diachronic developments that essentially affect individual segments in the linguistic continuum to which the dialect represented by Cp. belongs can also be seen to be of some assistance in the analysis of the synchronic suprasegmental structure of
certain forms in that dialect.

(i) The monophthongisation of diphthongs at certain stages in the history of the language, for example of PG /ai/ to OE /aː:/ (§2.1.1.1), and of the OE diphthongs in the late OE period (Campbell, 1959: §329.2) can be taken as evidence of the fact that syllabic and non-syllabic elements within the nucleus should be regarded as distinct units relevant to suprasegmental structure (§2.3.1.4).

(ii) The merger of certain vowel phonemes (/æ/, /i/ and /ə/) in the Pre-OE period can, as discussed in §1.3.1.2.2.1, be taken as indirect evidence of the degree of stress to be assigned to the syllables concerned. The loss of contrast between these phonemes only occurs in syllables that are totally unstressed and this provides a welcome confirmation of conclusions reached on the basis of metrical evidence.

(iii) Finally, as noted in §2.2.5.3.2, an examination of certain diachronic developments that affect the shape of certain consonant clusters can bring us towards a closer appreciation of the nature of the phonotactic constraints that operate in the language. For example, an awareness of the fact that /d/ devoices to /t/ or /f/ develops to /p/ before /s/, or that /n/ becomes /m/ before /b/ in the prehistoric OE period draws attention to the fact that the clusters */nb/, */ds/ and */fs/ are unacceptable in the synchronic structure of syllables in the dialect represented by Cp. This fact is not
immediately obvious from some of the spellings attested in the MS, such as, for example, gidsung, weps and ambras (§2.1.20.3; §2.1.30.4; §2.1.31.4).

A consideration of the phonological developments affecting certain segments can therefore be of some assistance in the analysis of suprasegmental structure. Perhaps the most significant contribution of such evidence is that it gives some indication of the fact that the nucleus is composed of both syllabic and non-syllabic elements, of which the syllabic is the more prominent (§2.3.1.4).

2.3 Morphological structure

2.3.1

An awareness of the diachronic developments that affect the status of certain morphemes and the nature of their expression can be of some assistance in ascertaining the synchronic morphological structures of forms in the Cp. dialect.

(i) The tendency for the leftmost or rightmost root in a compound to cease to represent a lexemic component but come to form part of a disyllabic root is noted in §3.2.7.3.2.

In some cases an awareness of the possibility of such a development merely serves to explain the differences in the synchronic structure of certain forms in OE and PE respectively. For example, the facts that hlafweard is a compound in early OE, but its PE reflex
'lord' is derivationally simple, can be reconciled when it is considered that this is the result of a likely diachronic development.

Occasionally, however, the different sources of available evidence as to the synchronic morphological structure of certain forms in Cp. conflict (3.2.73). For example, the fact that phonological reduction has operated may suggest that the forms concerned are simple, whereas their apparent semantic transparency may lead us to conclude that it may be best to classify these entries as compounds. In such cases a knowledge of the nature of the diachronic development that is in all probability taking place can explain this discrepancy, and it can be seen that the most satisfactory analysis of the forms concerned would be to give them separate classification as 'obscured compounds': forms which are at an intermediate stage in the transition from compound to simplex, see the discussion of weosend, sceptog and wulfmod (§3.2.7.3.2).

(ii) Similarly, a morpheme that was apparently originally a root can assume the status of a derivational affix. An awareness of the likelihood of such a development can confirm the classification of, for example, forgrindet and gegdradon as forms that are derivationally complex rather than compounds in terms of their synchronic morphological structure, (3.2.30) ft.6; (3.2.29) ft.1.

Consider also the difference in the status of the
morphemes represented by **to** in **tohald** and **toslog** respectively, (3.2.32) ft. 1.

Once more, in some cases the semantic evidence suggests that the form in question should be regarded as a compound, whereas the apparent phonological reduction suggests that the form is best classified as derivationally complex. It is possible, however, to achieve a satisfactory analysis by suggesting that such forms are in fact 'obscured compounds', see the discussion of **onwicum** (3.2.74) (a).

(iii) Another attested trend in morphological development is for derivational affixes to cease to be regarded as such (i.e. cease to be 'productive': Crystal, 1985: 247) and form part of a disyllabic stem.

In some cases an awareness of this development can serve to confirm the analysis based on a consideration of the distribution of phonological strings in OE MSS ($\S$1.3.1; $\S$1.3.2), even though this may conflict with PE evidence. For example, while **-ung** may not be a productive derivational affix in PE, it would clearly seem to function as such in the Cp. dialect. This discrepancy can be accounted for when it is noted that affixes are likely to lose their derivational function through time.

The analysis of the synchronic status of the morphemes in certain forms discussed in $\S$3.2.2.3.2 is also greatly assisted. Despite their phonological shape and the fact that a root can be isolated in diatopically
related dialects, on the basis of which it would be tempting to assume that the forms in question are derivationally complex, it is best to consider that they are, in fact, essentially derivationally simplex. As there is a strong possibility that the 'affix' concerned will have lost its derivational function by the OE period. It is, however, reasonable to classify such forms under a separate heading: i.e. 'diachronically derivationally complex'.

It is for this reason that when a root is isolated in a form from a cognate Germanic language, this is only taken as evidence of the derivationally complex nature of an OE form if we have independent evidence of the productive nature of the derivational affix concerned, as is the case in the analysis of the form lynisas (§3.2.2.3.2.4).

On the other hand, if evidence of the existence of a 'root' in a particular form is attested in stages of the language dating from after the composition of the Cp. MS, it can be claimed that the form in question is synchronically derivationally complex in that dialect with a fair degree of certainty.

As the trend is clearly for syllables to cease to represent derivational affixes and become part of a disyllabic root rather than vice-versa, the evidence of the existence of a root hap, [HAP], in historical dialects of English (assuming, for the sake of argument, that we have no independent evidence of the status of
-lice as a derivational affix) constitutes more support for the derivationally complex nature of the form gehāplice than would be the case if the root [HAP] was only attested in dialects that are diatopically related to Cp. In the latter case -lice in the OE form could well have lost its derivational function in the course of its development from PG and have become part of a disyllabic root. In the former, however, it is unlikely that the syllables [ltJa] would comprise part of a disyllabic root in an OE form and then become regarded as a derivational affix in form attested in the language at earlier stages in its development, see (3.2.41) ft. 1.

(iv) Finally, an awareness of the likelihood of this development can assist in the analysis of forms containing the sequences represented by -oc, -uc, -or, -ur and -ils/els, see (3.2.19), (5.2.4) ft. 2 and §2.1.6.4.4, where the evidence of the distribution of the strings in question and the possibility that they convey semantic information (which suggests that derivational affixes are represented) conflicts with the fact that the apparent phonemic status of the vowels concerned indicates that this is not the case. Once more this discrepancy can be explained with reference to the fact that the forms concerned in all probability represent an 'intermediate' stage in the development from derivationally complex to simple.

Other diachronic developments that can affect the
synchronic analysis of the morphological structure of forms in Cp. affect the nature of the inflectional categories represented.

(v) Developments affecting non-lexical inflectional categories

An observation of assumed historical developments from I-E to PE shows that there is a very strong tendency to reduce the number of non-lexical morphological categories expressed in the linguistic continuum to which the Cp. dialect belongs (the major period of change occurring during the late OE and ME periods: Strang, 1970: 294-312).

The suggestion that, for example, four case categories should be attested in OE seems reasonable on consideration of the general trend in diachronic development. OE represents an intermediate stage in the movement towards greater simplification of the English case system. If, for example, it is assumed that I-E distinguishes between eight noun cases and PE between two (or three in the case of pronouns), see Strang (1970: 415-416), Quirk, Greenbaum et. al. (1985: §5.112; §6.2), to posit four in OE would seem to be an appropriate intermediate number. This conclusion is of course supported by the fact that a maximum of four different case categories seems to be expressed in conjunction with the vast majority of relevant lexical items in OE MSS.

An awareness of this fact contributes to the
analysis of certain forms in Cp. where it is possible to claim that the locative or instrumental case (as opposed to the dative) is represented by the affix -i. (3.1.4) ft. 1 and the references therein. A close examination of the evidence, however, not least the fact that there is apparently no phonemic distinction between the unstressed segments represented by æ, i and e in the Cp. dialect (§2.2.1.3.3.1), suggests that such claims are unfounded. The i spellings are apparently 'archaic', and it is reasonable to maintain that there is no longer any distinction between the locative-instrumental and dative case in the inflectional system of the Cp. dialect as these are never given separate expression.

Clearly, the analysis of such forms cannot be discussed without a consideration of the phonological status of the vowels concerned. In fact, an awareness of the fact that the trend in diachronic development in morphological structure is to reduce the number of inflectional components (i.e. the number of inflectional affixes represented) in the system supports the conclusions reached about the loss of contrast between the front unstressed vowel phonemes. Apparently, parallel developments affect both phonological and morphological systems, and an awareness of both confirms the synchronic analysis proposed for both levels of the grammar.

(vi) Developments affecting lexical categories
The basic trend of diachronic developments that affect
lexical categories and their expression in the linguistic continuum to which the dialect represented by Cp. belongs seems to be towards a reduction in the number of categories expressed: most nouns joining the 'strong masculine' class and most verbs the 'weak' conjugation (Strang, 1970: 294-312).

Again, the vast majority of the relevant developments are attested after the OE period. An awareness that this is the likely direction of diachronic development can be of assistance in the analysis of forms such as lynisas and burnitu (§2.1.26.5; §2.1.27.3.2) where the fact that they have apparently joined the more regular declensions (a- and o-stems respectively) suggests that these nouns have ceased to be regarded as derivationally complex in the Cp. dialect.

2.3.2 Advantages of this type of evidence
(i) Generally a consideration of the fact that the number of lexical and non-lexical categories that are given separate expression in the English language was greatly reduced in the course of the historic period reconciles the vast differences in the morphological structure of forms in OE and PE respectively and explains why the evidence of PE is of little value in the recovery of the nature of the inflectional categories that are expressed in the Cp. MS.

Thus, to a large extent, a consideration of the
diachronic developments that affect the nature of the morphological system of the linguistic continuum to which the dialect represented by Cp. belongs seems to confirm the synchronic analysis of the structure of forms in that dialect based, for the most part, on the evidence of the distribution of the phonological strings that appear.

(ii) In addition, an awareness of the general trends that seem to influence morphological developments is of great importance in the analysis of forms where there is apparently some conflict between the various types of evidence as to their synchronic morphological structure. Such forms are to be described as representing an 'intermediate' stage in the relevant diachronic development.

2.3.3 Dangers and Limitations

The main danger of this type of evidence would seem to be that semantic information is not easily recoverable for historical data (§1.3.2.3.2). It is not always evident whether a form is to be considered semantically transparent or otherwise from a consideration of the textual evidence alone and it may well be the case that, for example, weosend is in fact not semantically transparent in the Cp. dialect and should therefore be classed without doubt as 'derivationally simple' (as, for example, PE 'lord').
2.4 Summary

2.4.1 The advantages of this type of evidence

The evidence of the diachronic developments that can be assumed to operate between the various synchronic stages of the linguistic continuum to which the dialect represented by Cp. belongs is therefore extremely useful for the reconstruction of that dialect, in particular its phonological structure. Perhaps the main value of this type of evidence is that it establishes a direct chain of development between OE and PE, which confirms the relevance of the data in PE (as assumed in §1.3.3) to the analysis of the Cp. dialect.

As noted in §1.3.4.1.1, it is only for PE and other modern languages that we have conclusive evidence of the broad phonetic values of the segments they contain, the nature of their phonemic inventories, their stress assignment rules, the synchronic morphological structure of any forms encountered and the meaning and function of their inflectional and derivational affixes.

In the case of all other dialects investigated in the present account (§§1.3.1; 1.3.2; 1.3.3 and 1.3.4.1 and 2), such information must be surmised from a consideration of the available written evidence. While this is more easily achieved in the case of some dialects than others (especially those of the late historic English period), such material is ultimately open to misinterpretation.

Thus, while it may be reasonable to assume that,
for example, the graph \( p \) represents \([p]\) in OE and PE alike, or that the main stress should fall on the root of OE unclæn and PE 'unclean' respectively and (un) function as a negative 'affix' at both stages of the language, the conclusions as far as the OE data is concerned are ultimately based on speculation.

If, however, we are aware of the most likely nature of the processes that occur in the continuous line of development of the English language from the period at which Cp. was written to the present day, it is possible to 'trace back' from the 'tangible' PE evidence to arrive at a reasonable reconstruction of the dialect represented by the OE text, a fact which clearly adds considerable weight to the analysis proposed on consideration of other available sources of evidence. This is especially useful when the analysis reached on the basis of evidence considered in §§1.3.1; 1.3.2; 1.3.3. and 1.3.4.1; 2. conflicts with that suggested by PE data. Unless we are familiar with the nature of the developments that have occurred within the historic English period it is difficult to ascertain which type of evidence will provide the most accurate reconstruction. For example, it is only the knowledge that certain developments occurred in the historic English period that allows us to suggest that \([u:]\) rather than \([au]\) is the value of the segment represented by \( u \) in Cp. \( ulæ \) (2.1.84) as in the PE reflex.
2.4.2 Disadvantages

The main disadvantage in the use of diachronic evidence to reconstruct the synchronic dialect represented by the Cp. MS lies in the inherent problems that arise in the method of comparative reconstruction. It is possible that the assumed correspondences on which the reconstruction is based may not be genuine but are the result of separate developments in each of the languages concerned, borrowings between the cognate languages or may even have arisen by chance (Penzl, 1972: 28).

Furthermore, the fact that the assumption that the preceding stages of a language can be reconstructed by the comparative method is based entirely on hypothesis must to an extent undermine our confidence in the whole procedure. It must be noted, however, that the few instances in which reconstruction may be checked against recorded texts in the proto-language, or a very close equivalent thereof, have shown, on the whole, that they are rather effective 31 (Hoenigswald, 1960: 137), a fact which provides some welcome reassurance on this matter.

The danger of confusing diatopic and diachronic variation must also be acknowledged. Problems arise particularly in the early literary stages of a language (such as OE) where extensive evidence as to the dating and provenance of MSS is not generally available. It is therefore not always easy to ascertain whether the
differences observed between equivalent forms in various MSS are the result of diatopic or diachronic distinctions, see again Colman and Anderson (1983: 168-169).

Finally, it is possible to allow too much diachronic information into the synchronic analysis. An example of this would be the suggestion in traditional grammars (Wright, 1954: §§10; 11) that the Gothic digraphs _ai_ and _au_ each represents three distinct segments, purely on the basis of the fact that they arise from three different sources. In fact, in all probability the segments have merged by the Gothic period and only one phoneme occurs in the synchronic phonemic inventory of that language, see further, Moulton (1948).

Ultimately, therefore, the fact that any synchronic analysis of the dialect represented by the Cp. MS should rely on the evidence of that MS itself, as much as this is possible, must be reiterated.

1.3.6 The evidence of typological and natural features (see Crystal, 1985: 319;214)

The final type of evidence that must be considered for a successful reconstruction of the dialect represented by the Cp. MS is that of the nature of phonetically natural and typologically plausible features and developments.

Any conclusions based on a consideration of the types of evidence described in §§1.3.1.—1.3.5 above must
ultimately be seen to conform to these criteria. Certain preferences and regularities can be observed in both the synchronic structures and diachronic developments of known languages. In view of the fact that many of the world's languages have yet to be studied, it is perhaps not entirely feasible to refer to 'linguistic universals' (ibid: 321-322). The present account, therefore, describes the regularities discussed in this section as 'typological' or 'natural' to avoid any commitment to their universal status.

The term 'natural' is reserved for cases where the regularities concerned seem to be determined by physiological and articulatory factors: for example those concerning broad phonetic values, phonetic change and most of the regularities that are to be observed in the analysis of suprasegmental structure.

Preferences and tendencies which do not seem to be determined by physiological factors are referred to as 'typological': examples being those attested in the shape of abstract phonological systems, any evidence of phonemic change and all regularities attested in morphological development and structure.

It seems likely, therefore, that phonetically natural regularities should be more universally attested than those that are 'typological'. Obviously physiological characteristics are universal and will always influence both the range and relative complexity (i.e. difficulty in articulation) of possible speech
sounds and the direction of phonetic change. As, however, no such underlying basis can be claimed for typological regularities, it is conceivable that the latter may not be as widespread in their occurrence.

1 The evidence for the establishment of typological and natural features

1.1 Synchronic features

The nature of the various typological and natural features that are attested in synchronic stages in the development of languages and dialects can obviously be recovered from an observation of contemporary data. The relevance of the evidence of non-standard dialects and morphophonemic alternants within a single language must not be overlooked. Compare, for example, the fact that non-standard dialects of PE provide evidence for the non-phonemic status of the segment [ŋ] in OE, (§2.1.32.5; §2.2.5.2.7).

1.2 Diachronic developments

Some evidence for the preferred direction of sound change, for example, can be found in a consideration of diatopic variation, either between contemporary languages or diatopically related dialects of the same language.

For instance, evidence of the tendency to neutralise vowel length in Germanic languages can be observed both in dialect variation within English, and
in variation between various languages in the Germanic family. The relevant developments are attested in Scots and Scandinavian dialects but not in standard English or the majority of Germanic languages, Lass (1976: Ch.2; 1980: Ch.3).

The bulk of the evidence for natural and plausible diachronic development must, however, come from an observation of assumed diachronic developments within a selection of languages, the evidence of the more recent periods in linguistic history being the most useful in this respect as these are more extensively documented (§1.3.4.1.2).

The value of the evidence of typological and natural features for the synchronic analysis of the dialect represented by Cp. depends on (i) the number of languages in which the feature or development in question is attested and (ii) their proximity (both diatopic and diachronic) to the Cp. dialect.

If a diachronic development or synchronic feature is observed in only one language or dialect other than that which is represented by the Cp. MS, the suggestion that it should be relevant to an analysis of that dialect is clearly not as well supported as would be the case if it were observed in many other languages. A suggested typological or natural regularity will be of more importance to a synchronic analysis of the Cp. dialect if it can be observed in another OE dialect, or at least another member of the Germanic branch of the I-E
language family, than if, for example, it is only attested in a Romance language.

The main value of the evidence of 'typological' and 'natural' criteria for a reconstruction of the Cp. dialect is, therefore, that it acts as a check on the conclusions based on consideration of the evidence discussed in §§1.3.1–1.3.5 above. No suggested synchronic analysis or diachronic development can be accepted in the account unless it can be seen to phonetically natural or typologically plausible.

2

The following examples show how a consideration of this type of evidence can assist a synchronic analysis of the dialect represented by Cp.

2.1 Segmental phonology

2.1.1 The establishment of the phonemic inventory

As shown in §1.3.1. and §1.3.2, the abstract phonemic inventory is established largely on the evidence of the distribution of the graphs in the MS with some consideration of relevant diachronic developments (§1.3.5.2.1.1). The suggested nature of the phonemic inventory and the diachronic developments that are assumed to affect it must, however, be seen to conform to natural and typological principles.

(i) The synchronic phonemic inventory

There is a widely attested tendency (in I-E
languages at least) for phonological systems to be symmetrical, containing no gaps or imbalances.

For example, it can be suggested (on the basis of the evidence considered in §§1.3.1-1.3.5) that the vowel system of OE (and, of course, the Cp. dialect) consists of pairs of long and short vocalic nuclei, corresponding in quality. Such an analysis conforms to this typologically attested tendency towards 'symmetry' and is therefore wholly acceptable.

A consideration of typological criteria can be particularly useful when the evidence from other sources seems to be inconclusive. For example, there is a conflict between the evidence of the spellings that appear in the MS and that of suggested diachronic developments as regards the phonemic status of the segments [œ], [œ] and [œ] in the Cp. dialect. The fact that separate graphs represent segments that are not phonemically distinct can be explained with reference to the observed typological tendency towards symmetry in the OE vowel system (§2.2.1.2.3).

(ii) The relevant diachronic developments

One typological factor that seems to determine the direction of phonemic change is the tendency for systems to become increasingly complex through time (Barrack, 1975: 28). The suggested phonemic split of /y:/ from the reflex of PG /u(:)/, whereby the Pre-OE system becomes increasingly more complex with the addition of front rounded vowel phonemes is therefore supported.
by this type of evidence as it conforms to typologically attested patterns of phonemic change.

2.1.2 The broad phonetic values of the segments represented

Evidence for this comes mainly from a consideration of the use of the graphs concerned in PE and Latin, backed up by an awareness of the fact that any suggested synchronic value must be seen to result from plausible and natural phonetic developments.

(i) Synchronic phonetic values

Any broad phonetic value assigned to a segment must conform to values attested in the world's known languages (and preferably those in the I-E family). Ultimately, the most acceptable value that can be suggested for a segment is that which occurs most commonly. A consideration of physiological and articulatory factors is clearly relevant, as the most commonly attested segments are the least complex phonetically, they are more easy to articulate. For example, the choice of the broad phonetic values [e(ː)ː] and [e(ː)ːo] for the segments represented by ea and eo (§2.1.9; §2.1.10), rather than, for example, those suggested by Antonsen (1961) is determined by the criterion of phonetic naturalness: back spread vowels being segment types which are phonetically complex and comparatively rarely attested in the world's languages.

(ii) Diachronic phonetic developments
Any postulated phonetic change must also be seen to be phonetically natural. For example, the suggestion that the processes of voicing and devoicing should affect the PG labial and velar fricatives in their transition into Pre-OE is supported as these seem to be a manifestation of the natural phonetic processes of lenition and strengthening, (2.1.122). Physiological and articulatory factors are evidently crucial as the nature of the phonetic change that affects a particular segment is usually determined by the phonetic characteristics of the segments that surround it (see, for example, §2.1.1.2; §2.1.2.1.2.2; §2.1.14.2.2).

(iii) The recovery of allophonic variants

As this is not as a rule recorded in MSS the main motivation for any allophonic variation suggested in §2.1 and §2.2 is that the existence of variants can be suspected if it is accepted that factors that seem to be phonetically natural in PE and other languages are also attested in OE. Again, this is largely determined by physiological criteria: segments will generally be influenced by those that surround them as this, of course, facilitates the articulation of sequences.

It is largely on the basis of this type of evidence, therefore, that it is suggested that the segment [ŋ] is an allophonic variant of /n/ (§2.1.33.5), or that it can be suspected that OE /k/ should have velar and palatal allophones (§2.1.17.2.3;2;3.3). Where allophonic variation is indicated in the spellings that
appear (compare the suggestion that most OE consonants have velarised allophones in §2.1.18.4.2) the evidence of PE and a consideration of what is phonetically 'natural' is crucial to our interpretation of the spellings concerned.

The suggestion that OE /l/ and /r/ had 'clear' and 'dark' allophones, for example, would be extremely difficult to maintain were it not for the fact that such allophones are attested in PE dialects (see §2.1.25.3; §2.1.24.4 and the references therein).

The evidence of typological and natural considerations are therefore very helpful in all aspects of synchronic phonological analysis. It must be emphasised that essentially they act as a check on conclusions reached on the basis of other sources rather than offer any independent solutions. Any postulated synchronic analysis or diachronic development must ultimately conform to what can be observed to be phonetically natural and/or typologically plausible.

2.2 Suprasegmental structure

A great deal of the evidence for the analysis of suprasegmental structure is based on a consideration of phenomena that can be observed in many PD languages and can therefore be assumed to be phonetically natural or typologically plausible. While much of the data cited in the relevant literature (Lass, 1984; Anderson and Durand, 1986; Anderson, 1986a) is taken from PE
dialects, these accounts include enough material from other languages to justify the discussion of this type of evidence in the present section rather than in §1.3.3. Any relevant phenomena observed in PE are examples of what can be assumed to be phonetically natural.

(i) The identification of the basic units of suprasegmental structure

The main evidence cited in §2.3 for the very existence of the basic units of suprasegmental structure comes from an observation of what appears to be phonetically natural. As can be seen in §2.3.1; §2.3.2.5, the existence of such units as the syllable, foot, group and rhyme (the last at least in Germanic languages) as units relevant to suprasegmental analysis is supported basically by the fact that they are the domains for certain phonetic and phonological processes in various languages. On the grounds that such units are evidently phonetically 'natural', it is suggested that they are also attested in the suprasegmental structure of the material in the Cp. MS.

(ii) The nature of the well-formed syllable

The 'naturalness' of the units that comprise the well-formed syllable (the syllabic, nucleus and rhyme) is discussed in (i) above. A knowledge of the phonotactic constraints that operate in a language is also crucial to an awareness of the syllable structures that are to be considered well-formed. It seems to be
phonetically natural that the ordering of segments in syllables is determined by their relative sonority, given that this phenomenon is attested in a wide range of languages, (§2.2.2.5.3.1). Therefore, while detailed phonotactic constraints may be language specific (§2.2.2.5.2.2), the basic shape of the well-formed syllable is to a large extent determined by the concept of phonetic naturalness, and this can be assumed to apply to the structure of syllables in Cp.

(iii) Stress assignment

The principles of stress assignment seem to be language specific and therefore the concept of naturalness is not of primary importance in the recovery of stress patterns in OE and the Cp. dialect. However, an observation of OE and other contemporary Germanic languages reveals that in these languages the underlying tendency is for the main stress to fall on the initial syllable, and the principle can be held to be if not 'natural' or 'universal', at least typologically characteristic of Germanic languages.

A consideration of this type of evidence can therefore provide confirmation of conclusions based on the evidence of the OE metrical system in this aspect of the analysis. From a diachronic point of view the fact that the process of reduction in vowel quality is phonetically natural in unstressed syllables can assist in stress assignment, at least where the occurrence of such a process is indicated in the
spellings that appear in Cp.

(iv) Syllable boundary placement

The division of polysyllabic forms into syllables depends to an extent on an awareness of what is to be considered a well-formed monosyllable in the language concerned and the role of the evidence of 'naturalness' in establishing this has been discussed in (ii) above. Detailed observation of phenomena in present day languages reveals that the concept of 'initial maximalism' seems to be an underlying principle in the placement of syllable boundaries in the vast majority of cases (§2.3.3.2 and references therein). It can therefore be claimed that this principle is phonetically 'natural' and it is reasonable to assume that it should apply to the OE data.

The concept of 'ambisyllabicity' and the suggestions as to the conditions under which it is attested (§2.3.3.3 and the references therein) is again largely motivated by a consideration of phenomena observed in PD languages which are in all probability phonetically natural.

Thus the evidence of phonetic naturalness and typological plausibility is of considerable importance to an analysis of suprasegmental structure, especially as far as the identification of the basic units of the analysis and the establishment of the principles of syllable division is concerned.

It must be acknowledged that the assumption that
what is observed to be phonetically natural in present
day dialects should apply to OE data may not be wholly
valid. In the absence of evidence to the contrary,
however, it seems reasonable to accept that this is in
fact the case and the analysis in §2.3.3 proceeds on
this basis.

2.3 Morphological structure

2.3.1 Synchronic morphological structure

Any inflectional lexical or non-lexical category
that can be supposed to exist in the Cp. dialect must
also be attested in other languages of the I-E family.
The evidence of non I-E languages is not generally
considered to be of any relevance to this aspect of the
analysis, as the morphological structure of many of
these languages seems to be radically different from
that attested in the I-E data, see (for example) Brown
and Miller (1980: part two). On the whole, morphological
regularities are in all probability best considered to be
'typological' rather than 'natural', as they seem to be
characteristic of restricted sets of languages rather
than attested universally.

2.3.2 The direction of diachronic morphological
developments

Many of the trends of morphological development
suggested in §1.3.5.2.3 (for example the changes in the
status of certain roots and affixes, or the processes
involved in the simplification of the inflectional system) can be seen to occur in the historic stages of many I-E languages, and it is largely on the basis of this type of evidence that it is suggested that they affect the morphological structure of forms in the linguistic continuum to which the dialect represented by the Cp. MS belongs.

The evidence of attested phonetically natural and typologically plausible features and developments is therefore of great assistance in the synchronic analysis of all aspects of the Cp. dialect, if only in that any conclusions reached on the basis of a consideration of the evidence discussed in §§1.3.1.- 1.3.5 must ultimately conform to this type of criteria.

1.4 Summary

It can be seen from §1.3 that out of all the possible sources of evidence for a reconstruction of the phonological and morphological structure of a historical dialect such as that represented by Cp., not one provides sufficient evidence for a comprehensive analysis of all three levels of grammatical structure.

Different types of evidence contribute to different aspects of the analysis, and in many cases conclusions based on the evidence from one of the sources used will support and confirm those reached on consideration of the other five. This is most effectively illustrated by the following brief account of how the available
evidence can be seen to supply the appropriate information for the achievement of the aims of each aspect of synchronic analysis, as discussed in §1.3.

1.4.1 Phonological analysis

(i) The recovery of the broad phonetic values of the segments represented relies crucially on the evidence of PE and Latin (§1.3.3.4.1; §1.3.4.2.1), together with a consideration of the phonetically natural developments that can be supposed to operate between the various synchronic stages of the language (§§1.3.5-1.3.6).

(ii) The nature of the abstract phonemic inventory is ultimately established on the evidence of the distribution of graphs in Cp. (§1.3.1.2.1.1) and other OE MSS.(§1.3.2.1.1) with some confirmation from diatopically and diachronically related languages and dialects (§§1.3.3-1.3.4 ). However, a consideration of the various diachronic developments that can be seen to affect the system (§1.3.5.2.1.1) is also crucial, especially as this may avoid any possible misinterpretation of the spelling evidence.

(iii) The recovery of allophonic variants relies mainly on the evidence of what can be assumed to be phonetically natural, in terms of both synchronic and diachronic developments (§1.3.6.2.1.2.iii). Occasionally a consideration of certain spellings that appear in the MS (§§1.3.1 : 1.3.2) and the typological factors (§1.3.6.2.1.1) that affect their interpretation can be
of assistance in this venture.

1.4.2 Suprasegmental structure

Considerations of phonetic naturalness (§1.3.6.2.2) are very important in establishing the units that are relevant to suprasegmental structure and the conventions that underlie the placement of syllable boundaries. The suggestions as to what should constitute a well-formed syllable in the dialect concerned are based to a large extent on a consideration of the distribution of the graphs in the MS (§1.3.1; §1.3.2) and are supported by the evidence of diatopically and diachronically related dialects. The concept of phonetic naturalness is also relevant (§1.3.6), at least as far as the influence of the sonority hierarchy on the nature of phonotactic constraints is concerned.

Conclusions as to stress assignment are based largely on the evidence of OE metrical structure (§1.3.2.2.1), but given the problems that arise in the exclusive use of this type of evidence, it is useful to note that the evidence of PE (§1.3.4.2.2) and typological factors that can be observed within it can also be consulted. Furthermore, the fact that stress reduction is also occasionally reflected in the spelling evidence (§1.3.1.2.2.1; §1.3.2.2.1) is also of use in this analysis.
1.4.3 Morphological structure

Conclusions as to word division and the isolation of roots and affixes must be based primarily on consideration of the distribution of phonological strings in Cp. (§1.3.1) and, more importantly, other extant OE MSS (§1.3.2). The evidence of diatopically and diachronically related dialects supports these conclusions and in some cases draws attention to the fact that a form is either synchronically or diachronically derivationally complex when this is not apparent from the OE material (§§1.3.3. 3.1; §1.3.4.2.3).

The meaning and function of derivational affixes can generally be recovered from a consideration of the syntactic and semantic contexts in which a particular form appears (the former being of use in the identification of class-changing, the latter of class-preserving components respectively). Clearly, extant OE material other than the Cp. MS itself is of greater value in this respect (§1.3.1.2.3.2).

The nature of the categories represented by the various inflectional affixes can generally be deduced from a consideration of OE MSS other than Cp. (§1.3.2), as these show how the affixes concerned are distributed in syntactic structure.

Finally, a consideration of the diachronic developments that affect the morphological structure of the language (§§1.3.5.2.3.1; 1.3.6.2.3.2) can be seen to
assist in the analysis of certain 'problem' forms. Once
the nature of the root and function of the various
derivational and inflectional affixes has been
established, the recovery of the abstract components in
the word structure is a fairly straightforward matter.

1.4.4

The above summary, therefore, gives an effective
illustration of the necessity to consider all types of
evidence listed in §1.3 in conjunction with each other
in order to achieve a satisfactory and comprehensive
analysis of the synchronic phonological and
morphological structure of the dialect represented by
the Cp. MS. Thus the constant balancing of and cross-
reference between the conclusions reached on the basis
of each of the sources of evidence listed in §1.3 can be
seen to be both necessary and justifiable when such an
analysis is attempted in chapters 2 and 3.
Chapter 2

This chapter presents a synchronic phonological analysis of the dialect represented in the Cp. MS based on the types of evidence and principles outlined in §1.3. A comprehensive phonological analysis of a historical dialect such as that represented in Cp. must attempt to

(a) reconstruct the broad phonetic values of the segments represented
(b) establish a phonemic inventory
(c) formulate realisation rules for these phonemes (see §2.1.2 and the references therein).

In this chapter §2.1 is concerned with the first of these aims: each graph will be considered in turn with a view towards recovery of the broad phonetic value of the various segments it represents. §2.2 is concerned with aims (b) and (c): the phonemic status of these phonetic segments will be discussed in detail. In practice, however, it is not possible to separate rigidly the two aspects of the analysis.

There is a great deal of spelling variation within Cp., even in the representation of the same lexical item 1. This variation has implications for the phonemic status of the segments represented which in turn can affect conclusions as to their broad phonetic value. In many cases, therefore, it is necessary to cross-refer within the various sections in §2.1 (i.e. between the discussions of the values that can be assigned to each of the individual graphs), and also to refer forward to §2.2 (i.e. to the discussion of their phonemic status).
2.1 The broad phonetic values of the segments represented by the graphs in the Cp. MS

2.1.1 a
On the evidence of its use in the spelling systems of PD languages (especially English) and Latin, see (2.1.1)

(2.1.1)

PE  [æ] 'cat'
    [o:] 'pass'
    [ə] 'was'
    [ɔ:] 'all'

(Gimson, 1980: §7.12; §7.14; §7.15; §7.16)

Latin  [ʌ] mare  (Allen, 1965: 50)

it can provisionally be assumed that a represents some sort of low vowel. When the evidence of the data listed in (2.1.2) is considered,

(2.1.2)

(a) Cognate forms in the various Germanic languages
(b) The PE reflexes of the forms under consideration
(c) The spellings of equivalent forms in Cp. itself and other OE MSS
it will become clear that the graph \( \text{a} \) in Cp. in fact represents several different phonetic segments within this general area.

1 \( \text{a} \) appears in several forms in Cp. for which
(a) The vowel in the Germanic cognates is spelt with ai (Go.), ei (ON), e or a (OFr), e (OS), ei, e (OHG). (Prokosch, 1939:40a);
(b) The reflexes in standard dialects of PE have [au] (Gimson, 1980: §7.25);
(c) Equivalent forms in other OE MSS are spelt with a.

(a) From the evidence of the 'correspondence class' illustrated by the cognate forms, it is possible to reconstruct the PG diphthong [ai] (see §1.3.5.1.2 and the references therein). It is unlikely that in any spelling system a monograph such as \( \text{a} \) would represent a diphthong unless historical changes had brought this situation about. That a process of monophthongisation should affect the PG diphthong is, however, phonetically natural and the segment [a:] would be the most likely outcome.

(b) In its development into standard dialects of PE the segment in question seems to have been rounded and raised. Both of these processes provide clues as to its synchronic value in the dialect represented by the Cp. MS. The features 'backness' and 'lip-rounding' seem to co-occur in vowel segments almost universally (Gimson, 1980:41). This suggests that \( \text{a} \) in the relevant forms in Cp. is likely to have represented a back vowel rather than a front vowel, as this would be a more suitable input to the
rounding process. It has been observed in several languages that the long monophthongs in particular are prone to undergo raising and this process is a well-attested feature of the development of the English vowel system in the historic period (Lass, 1984:126-30). We can therefore conclude that in the forms in (2.1.3) in all probability represents a long rather than short segment, i.e. [a:], and this is presumably supported by the evidence of the positions these forms occupy in OE metrical structure (§1.3.2.1.1 and references therein).

(c) is the spelling universally found for the vowel in the relevant forms in MSS from all OE dialects and thus there is no reason to suppose that the segment concerned has anything other than the value proposed on the evidence of types (a) and (b) above.

Therefore would seem to be the most likely broad phonetic realisation of the segment represented by in the forms in (2.1.3).

(2.1.3)

cænum: wase 'mud, ooze, slime' 386
(Icel. veisa, OFr. wase)
allox: tahæ 'toe' 141
(OHG zeha, Icel. ta)
avena: ate 'oats' 241
(ON at, Frs. oat)

The principles of OE stress assignment are discussed at length in §2.3.2. §2.3.2.6 establishes that the second elements of
compounds presumably carry an 'intermediate' degree of stress in Cp. It appears, therefore, that unlike those in totally unstressed syllables (Campbell, 1959: §353), the vowels in the second elements of compounds will show the same length and quality distinctions that operate between vowels in syllables that carry the main stress. The present account assumes that a vowel will have the same quantity and quality irrespective of whether it appears in the leftmost or rightmost root in a compound, and it can thus be claimed without hesitation that the graph a represents [a:] in the second syllables of forms such as those in (2.1.4).

(2.1.4)

\[
\begin{align*}
\text{calculus, ratio} \\
\text{vel sententia vel} \\
\text{numerus vel: teblstan} & \quad \text{'die, piece in a game'} \quad 349 \\
& \quad \text{(Go. stains, OS, OFr. sten, OHG stein, PE 'stone')} \\
\text{bolides: metrap} & \quad \text{'a line for sounding'} \quad 319 \\
& \quad \text{the depth of water'} \\
& \quad \text{(Go. raip, OHG reif, PE 'rope')} \\
\end{align*}
\]

In some forms the vowel graph is doubled. While this is not infallible as an indication of vowel length (see Campbell, 1959: §26; and the discussion of past in §2.1.1.2.5), the sequence aa presumably represents [a:] in the forms in (2.1.5).

(2.1.5)

\[
\begin{align*}
\text{alga: waar} & \quad \text{'seweed, waur'} \quad 120 \\
& \quad \text{(cf. Sc. dial. 'ware': Jamieson (1808))} \\
\text{color: asac} & \quad \text{'oak'} \quad 535 \\
& \quad \text{(OFr. ek, OHG eih, ON eik)} \\
\end{align*}
\]
The vowel in

[curtina: wagryft 'wall-covering, curtain', 624
cf. Go waddjues]

shows a slightly different historical development, the original [ai] diphthong having arisen in W-G by a process discussed by
Campbell (1959: §120).

2 Forms with PG [a]

The cognates of many forms in which the stressed vowel is
spelt with a in Cp. contain a 8, on the basis of which an original
PG mid 9 low vowel can be reconstructed (Prokosch, 1939: §38c).
The proliferation of variant spellings in other OE MSS and within
Cp. itself suggests that a number of different phonetic segments
are in fact represented, generally arising as a result of the
influence of the surrounding segments on the original vowel.

The discussion will therefore be subdivided into a
consideration of the reflexes of PG [a] as it appears in a number of
synchronic environments in Cp.

2.1 Before u, uu, w

a appears representing the stressed vowels in forms in Cp.
for which

(a) The cognates in Germanic languages are spelt with a;
(b) The PE reflexes have [ɔ:] (Gimson, 1980: §7.16);
(c) a is the only spelling that appears in equivalent forms
in Cp. and other OE MSS.
(a) The unconditioned reflex of PG [a] in most OE dialects ($2.2.1.2.2.2$) is a segment represented by \( \dot{a} \) which is generally assumed to be a front rather than central low vowel, \([æ]\) (see §2.1.3). The graphs \( u, uu \) and \( w \) are assumed to represent the labio-velar approximant \([w]\) (see §2.1.6.5).

§1.3.6.2.1.2 established that it is a phonetically natural phenomenon for segments to be influenced by those that surround them. It is therefore not unreasonable to suppose that a 'front' segment such as \([æ]\) would in some way alter its realisation if it preceded a segment such as \([w]\) which is clearly back. A number of phenomena that can be observed in OE dialects, see (2.1.7), suggest that the sequence of a front vowel plus a back consonant was generally considered to be unacceptable in OE, and different means of avoiding such a sequence were adopted in the relevant environments in the various dialects of OE. According to Campbell (1959: §139)

> front vowels are either retracted to whichever back vowel of the language is nearest in height ... or are protected from the following consonant by the development of a vocalic glide.

A basic assumption that is held throughout the present account is that vowel graphs in OE are used to represent segments that are similar in quality but not necessarily in quantity (Campbell, 1959: §30). Given that \( a \) represents a long low back vowel \([a:]\) (see §2.1.1.1), it is reasonable to suppose that this same graph will represent a back rather than front (or even central) low vowel when it appears for a short nucleus. In this case, evidently, the option of 'retraction' (ibid: §139) has been chosen as a means of assimilating the Pre-OE front vowel to the back consonant that follows it.
(b) In this environment the OE vowel has undergone several subsequent developments in the historical English period (the most important of these being lip-rounding). However, the fact that it has apparently not been subjected to the raising process described in §2.1.1.1 supports the conclusion that the segment represented is short rather than long, and presumably OE metrical evidence would confirm this.

(c) a is universally found in OE MSS representing the reflex of PG [a] in this environment. This type of evidence, therefore, presents no challenge to the proposed value. Thus a can be said to represent [a] in the forms in (2.1.6).

(2.1.6)

(h)arpago: awel 'awl', 'meat hook' 211  
(OHG ala, ON alr, OE awil, awel, al, al, eal)\(^1\)

(h)arpago: clauuo 'claw' 211  
(OHG kla\(\aa\), kloa, OE cla, cleo, clawu\(^2\)

1. 'The OE variants awul, awel etc have not been accounted for' (O.E.D.).
2. For an explanation of the variants with diphthongs see Campbell (1959: §§120.3; 597).

2.2 Before l followed by a graph representing another consonant a appears for PG [a] in forms in Cp. where

(a) The vowel in the cognate forms in other Germanic languages is usually spelt with a;

(b) The PE reflexes have [a], [ɔ:] or [au] (Gimson, 1980: §7.12; §7.16; §7.25);

(c) In equivalent forms in MSS representing other OE
dialects, in particular W-S, ea spellings frequently appear (Campbell, 1959; §143).

(a) An observation of a range of phenomena in Cp. and MSS representing other OE dialects, see (2.1.7)

(2.1.7)

(a) The appearance of a for PG [a] before [w] (§2.1.1.2.1)
(b) The appearance of a for PG [a] before a consonant followed by a back vowel (§2.1.1.2.3)
   - both of which are unambiguously 'back' environments -
   and, moreover
(c) The appearance of ea for PG [a] before /r/ followed by a consonant and a consonant followed by a back vowel (§2.1.9.4.1)
(d) The appearance of ea for PG [a] before /l/ plus a consonant and /χ/ in other OE MSS (Campbell, 1959: §§143; 145)

1. The ea spelling presumably represents the segment that resulted when a glide developed between Pre-OE [æ] and a 'back' consonant (§2.1.9.4.1).

suggests that, although it is not immediately obvious, this environment must be considered 'back' in OE. The reflex of PG [l] has apparently developed a velarised realisation in OE when followed by another consonant. The fact that a appears uniformly in Cp. for the reflex of PG [a] in this context suggests that once more the option of 'retraction' as a means of assimilating the
original front vowel to the back consonant has been chosen. [a] is therefore the most likely phonetic value that can be ascribed to the stressed vowel in the forms in (2.1.8).

(b) The PE reflexes, in that they do not suggest that the vowel has been raised 11, support the claim that the segment represented is short, as, presumably, does the behaviour of the relevant forms in OE metrical structure.

(c) The ea spellings in equivalent forms in W-S can be explained as representing a dialectically divergent means of dealing with the Pre-OE sequence of a front vowel followed by a back consonant (ibid: §139). a, therefore, represents [a] in the forms in (2.1.8).

(2.1.8)

altrinsecus: on ba halfe 'half' 121
(Go. halba, OHG halb, OS halba, W-S healf)
bratium: malt 'malt' 322
(OHG malz, ON malt, W-S mealt)
anus: ald uuif 'old' 173
(Go. albeis, OS ald, OHG alt, W-S eald)

2.3 Before a consonant followed by a back vowel graph 12 a appears for PG [a] in forms for which

(a) The cognates in Germanic languages are spelt with a;

(b) The vowel in the PE reflexes is [a] or [ei] (Gimson, 1980: §7.12; §7.22);

(c) Equivalent forms in W-S MSS, for example, have a, but
variant spellings within Cp. itself include ea (Campbell, 1959: §206).

(a) It is likely, accepting that the nature of the back vowel may well affect the consonant that precedes it causing it to become back in its realisation (§1.3.5.2.1.2.iii), that here, too, the sequence in Pre-OE would consist of [æ] followed by a velarised consonant. This assumption is supported by the appearance of either a or ea in this environment in Cp., both of which, as established in (2.1.7), represent the segments that result from attempts to avoid such an 'undesirable' sequence in historic OE.

(b) The relevant PE reflexes (which, it must be noted, may be directly developed from an OE dialect other than that represented by Cp., see §1.3.4.3.2.ii and the references therein) at least support the suggestion that the segment is short in OE (see also §2.1.9.4.1).

(c) It would seem, therefore, that either [a] or [æo] is represented by the graph a in this environment in the Cp. MS. The fact that ea variants appear in the MS itself, however, means that it is difficult to determine whether the Pre-OE vowel [æ] was 'retracted' or whether a glide was developed before the back consonant in the dialect represented.

In §2.2.1.2.3.3.i, it is established that there is no contrast between the segments normally represented by a and ea in this particular environment. Presumably the graphs have become equivalent and can be used interchangeably, which explains the variation that occurs (§1.3.2.1.2.1.ii). The phonetic segment
represented could, however, theoretically be either [a] or [æ], or even have some intermediate value. Given that according to Campbell (1959:§207), 'in Cp. forms with ea are much more frequent', it seems reasonable to suggest that it is in fact the diphthongal segment that occurs 14. a in all probability represents [æ] in the forms in (2.1.9).

(2.1.9)

carpella: sadulboga 'saddle bow' 388
(OHG satalbogo)

cefas: heardhara 'the name of a fish' 447
(OHG haso, PE 'hare')

2.4 Before r followed by a graph representing another consonant

Very occasionally, a appears for PG [a] in forms in Cp. for which

(a) The cognate forms in other Germanic languages are spelt with a;

(b) The PE reflexes have [o:], [æ] or [ei] (Gimson, 1980: §§7.18; 7.2; 7.22);

(c) Alternative spellings for the vowel concerned, both in Cp. and other OE MSS include ea (Campbell, 1959: §144).

(a) Given that ea is the more regular spelling in Cp. and most other OE MSS (a being simply an occasional variant), in the light of the evidence discussed in (2.1.7) it would seem that this, too, is best considered to be a 'back' environment in OE. PG [r] has apparently velarised in this position (§2.1.2.5.2) 15. Presumably, therefore, either [a] or [æ] will result in OE from the Pre-OE sequence of a front vowel plus 'back' consonant.
However the fact that both a and ea spellings are attested in Cp. means that it is difficult to determine whether the option of 'retraction' or the development of a glide has been chosen as a means of avoiding the juxtaposition of [ə] and [ɛ]. As with the environments described in 2.1, 2.2 and 2.3 above, §2.2 (2.2.35) reveals that the contrast between [o] and [əo] has been suspended in this context. The existence of spelling variation between a and ea is therefore easily explained. However, it is not so easy to determine whether the segment [o], [əo] or one with some intermediate value is represented. The fact that ea spellings are by far the most regular in this environment suggests that the diphthongal realisation is the most likely, and the occasional a spellings can be explained as being a natural consequence of the phonemic status of the segments concerned.

a therefore presumably represents [əo] in forms such as adventio: sarwo 'device. contrivance', 88 (cf. OHG saro, Go. sarwa, W-S searu, searo).

2.5 Before morpheme final consonants followed by either a word boundary or a front vowel graph a appears for PG [a] in forms Cp. for which

(a) The cognate forms in other Germanic languages are spelt with a:

(b) The PE reflexes have [ɔː]. [ə] or [ei] (see §2.1.2.4);

(c) The spelling found in the forms concerned in most OE
MSS is æ, and in Cp. both e and æ occur.

(a) The regular development of PG [a] in this 'unconditioned' environment is to [æ] in the majority of OE dialects (see §2.2.1.2.2.2). In the dialect represented by Cp., however, the segment develops to the mid vowel [e] (Campbell, 1959:§168). §2.2.1.2.3.2 establishes that as a result of this development there is no phonemic contrast between the segments normally represented by the graphs a, æ and e 16 in this particular context. Given that [e] is the end result of the suggested phonological development, the very fact that e spellings occur in the Cp. MS suggests that [e] is in all probability the segment represented in the dialect concerned. It would otherwise be extremely difficult to account for the appearance of such spellings. The appearance of the occasional a spelling in this environment (and this is the exception rather than the norm in Cp.) can therefore be explained as being a natural consequence of the phonological status of the segments concerned. There is no contrast between the segments normally represented by the graphs a, æ and e in this particular context and they can therefore be used interchangeably.

(b) The PE reflexes suggest an original OE [æ] (PG [a]) rather than [e], but given that the development to [e] is particular to the dialect represented by Cp. and that of a few related MSS (Campbell, 1959: §259) which do not appear to be those from which PE is directly developed (§1.3.4.3.2.ii), this does not present any great difficulty for the proposed analysis. Thus a can be said to represent [e] in the forms in (2.1.10).
(2.1.10)

anata (anas): cladersticca 'clapper, rattle' 171
(OE cleadur, PE 'rattle')

achalantis, vel luscinia: nehtegale 'nightingale' 52
vel roscinia: (OS nahtigala)

calatum: agraben cf. agrafón 'to engrave' 424
(OG. graban, OHG graban)

The value that is suggested by the spelling of the stressed vowel of the form in (2.1.11) conflicts with that suggested by a consideration of its diachronic development.

(2.1.11)

callis: paat 'path, track' 420
(OG. pap, OIF. path, pedd, OHG pfad)

While the double graph might suggest that the vowel is long (Campbell, 1959: §26), all other available evidence points to the segment's being short 17. In this case, the possibility of scribal error or carelessness must be acknowledged. According to Campbell (1959: §26), 'some mistakes occur in the application of this device', and the value suggested by the diachronic data would seem to be the most likely.

2.6 Before graphs representing nasal consonants

a appears in forms in Cp. for which

(a) The cognates in Germanic languages are spelt with a;

(b) The PE reflexes have [a] (Gimson, 1980: §7.12);
(c) Alternative spellings of equivalent form in Cp. and other OE MSS are o and a (Campbell, 1959: §32; §130).

(a) Given that segments are frequently influenced by the nature of the segments that surround them (§1.3.6.2.1.2), it can be suggested that PG [a] would develop into a nasalised segment in OE when followed by [m], [n] or [ŋ] (ibid: §130). Spelling variants in Cp. and other OE MSS include o, a graph which is normally used to represent a mid, back rounded vowel (§2.1.5). In §2.2.1.2.3.9 it is established that the contrast between the segments normally represented by the graphs concerned, i.e. [a] and [o] respectively, does not operate in this particular environment. While this explains the spelling alternation (§2.2.1.2.2.2), the exact phonetic value of the segment represented is open to question. While a nasalised vowel (Ladefoged, 1982:208) would be perfectly feasible in this position, the fact that o spellings appear suggests that a segment intermediate in value between [a] and [o], i.e. [ɔ], may occur (Hogg, 1982). The present account will adopt the latter solution, largely due to a consideration of the economy that such an assumption would produce for the phonological analysis as a whole, and, of course, its subsequent representation within the dependency framework 18.

Ultimately, all that need be indicated is that the segment represented by a before a graph representing a nasal consonant is phonetically distinct from that represented by the a that appears as a reflex of PG [a] in other environments. Whether this is by virtue of the segment's 'roundness' or 'nasality' is a purely arbitrary decision. In this account more weight is given to the
solution that allows for greater economy of description.

(b) While the absence of rounding in most of the PE reflexes does not support the proposal that $a$ should represent [ã] in this environment, this does not present too great a threat to the above analysis. Either segment, [ã] or [o], is presumably similar enough to that which developed from all the OE reflexes of PG [a] in the late OE period (Campbell, 1959: §130; §329.3), and an eventual merger in [a] is well motivated. $a$ therefore represents the segment [o] in forms such as that in (2.1.12)

(2.1.12)

corben (-is): mand 'basket' 511
(cf. PE archaic and dialectal 'maund')

3 Unstressed syllables

The graph $a$ also appears in syllables which are presumably unstressed in Cp. (see §2.3.2).

3.1 Unstressed $a$ in inflectional affixes

(a) The vast majority of totally unstressed syllables in OE represent inflectional affixes ($§2.3.2.1.2$) which have apparently undergone a number of different developments from a variety of sources in PG. The present study accepts the value assigned to the vowels in each of these affixes in PG, and the account of their development into OE, given by Campbell (1959: Chapters VII and XI-XVI), and Prokosch (1939: part 3).
(b) (2.3.12) establishes that the vowels in unstressed syllables very rarely have reflexes in PE, due to developments that have occurred in the historic English period. This type of evidence, therefore, is not generally available to assist in the reconstruction of the vowels in the forms concerned.

(c) In contrast with those discussed in §2.1.2.6.1; 6.2; §2.1.3.5 and §2.1.4.5.1, there is very little spelling variation within OE MSS in the representation of the inflections represented in (2.1.13). According to Campbell (1959: §375) 'unaccented a is fairly stable in OE'. Largely on the evidence of its development from PG therefore, it can be concluded with a fair degree of certainty that a represents a low unrounded back vowel in the unstressed syllables of the forms in (2.1.13).

(2.1.13)

<table>
<thead>
<tr>
<th>Noun inflections</th>
<th>PG [ð] (Campbell, 1959: §616)</th>
</tr>
</thead>
<tbody>
<tr>
<td>weak masc. non. sing.:</td>
<td></td>
</tr>
<tr>
<td>butio:</td>
<td>cyta</td>
</tr>
<tr>
<td>balneum:</td>
<td>stofa</td>
</tr>
<tr>
<td>strong masc. plural:</td>
<td></td>
</tr>
<tr>
<td>callos:</td>
<td>weorras</td>
</tr>
<tr>
<td>astruaria:</td>
<td>fleotas</td>
</tr>
<tr>
<td>strong fem. plural</td>
<td></td>
</tr>
<tr>
<td>ambulas:</td>
<td>piustra</td>
</tr>
<tr>
<td>tantalus:</td>
<td>euwa</td>
</tr>
<tr>
<td>genitive plural (all declensions):</td>
<td>PG [ð Büyükçe] (ibid: §570)</td>
</tr>
</tbody>
</table>
clavia (ius): borda 'board, plank' 474
conabulum (cunabula): cildatrog 'child's bed' 492

Adjectival inflections

genitive plural: PG [eizôm] (ibid: §640; §645)
alternantium: stafnendra 'alternating' 126
weak masc. nom. sing.: PG [6] (ibid: §§616; 656)
avus: aldra fader 'older' (ibid: §657) 241

3.1.1 Before nasals

In certain cases a appears in unstressed syllables before n ([n]). While it is certainly possible that the vowel may have been influenced by the following nasal and thus have a different phonetic realisation: i.e. [á] or [o] (see §2.1.1.2.6), there is no orthographic evidence to support this suggestion 20. It is possible that a nasalised or rounded segment might appear in the forms in (2.1.14), although this cannot be established with any great certainty.

(2.1.14)

weak masc. acc. pl: PG [on] (Campbell, 1959: §616)
caragios, (caragogos): lyblacan 'sorceror' 408
corimbos (y): bergan 'berry' 509
and the infinitive of the verb: PG [anam] (ibid: §731.f)
confici: gemęngan 'to mingle' 5471

1. The Latin form is in the first person singular, (Gildersleeve and Lodge, 1894: §125), but see the discussion of doema (3.2.34 ft 3).
Problem cases: a in syllables which carry an 'intermediate' degree of stress.

According to principles established in §2.3.2, in a number of cases vowels represented by a seem to carry an 'intermediate' degree of stress. While spelling variants that appear in OE MSS suggest that the segment concerned is not to be considered as being fully stressed, it can be claimed, largely on the basis of its position in the word form or the type of morpheme it represents, that the vowel in all probability carries a greater degree of stress than those in totally unstressed syllables. The forms discussed below, therefore, illustrate the unsuitability of an over-rigid division of the stress continuum.

4.1 The past tense of weak verbs of class II, PG [o:] (Campbell, 1959: §754-6)

Consider the underlined vowel in the forms in (2.1.15):

(2.1.15)

contionatur: maðalade 'to talk, speak' 586
coaluissent: suornadun 'to coalesce' 518

By virtue of its position in the word form and the fact that the syllable concerned represents a certain amount of derivational information (§3.2.2.2.2), the segment represented by a must be assumed to carry some degree of stress in the Cp. dialect. However, there is no evidence of the spelling variants in ea which are attested with fully stressed vowels in this environment (§2.1.1.2.3). It is therefore best to assume that [a] rather than [æ]
is represented, and that the degree of stress assigned to the syllable is very much reduced.

4.2

Consider also, the underlined vowel in the form in (2.1.16)

crepidinem: neobouard 'in a downward direction' 5
(cf. OS -ward; OHG -wart; PE '-ward')

A similar situation seems to affect the vowel in the third syllable, which, on the basis of its diachronic development from PG [a] to PE [ə] (the crucial factor here being that the vowel has not been lost in the historic English period), must be assumed to carry some stress. While it is possible to suggest that the value of the segment represented is in fact [ə] (as in the case of sarwa, §2.1.1.2.4), the existence of alternative spellings in other OE MSS (Campbell, 1959; §338 and ft.1), however, would seem to indicate that the vowel has undergone a considerable amount of stress reduction in OE, and the form is in fact in all probability becoming derivationally complex (§3.2.7.3.1). In this case, it is possible to claim that the diphthong is no longer represented, and the segment that occurs is [a], which is basically stressed but not to any great extent 21.

4.3

That certain prepositional adverbs (the vowels of which will therefore be basically stressed (§2.3.2.1)) appear in reduced form when they co-occur with roots representing verbs in OE is noted in §3.2.7.3.1. Again the vowel concerned may not be totally
unstressed, but, in that the spelling of the vowel in the forms in 
(2.1.17) differs from that of the vowel in the preposition when it 
appears as a 'free' form, it must be concluded that any stress it 
does carry is comparatively slight. Thus a in the forms in (2.1.17)

(2.1.17)

\[ \text{concesserim: arecte 'to speak out, relate'} \quad 523 \]
\[ \text{attoniti: afyrhte 'to terrify'} \quad 237 \]
\[ (\text{cf. OE } \acute{a}, \text{ o 'ever', 'always': Go. aiw, OS, OHG, eo}) \]

presumably represents the short vowel [a], which has lost its 
length as the degree of stress it carries was reduced 22. A similar 
situation exists in the forms in (2.1.18)

(2.1.18)

\[ \text{afflarat: ansueop 'to sweep'} \quad 100 \]
\[ \text{aporians: anscungendi 'to shun'} \quad 177 \]
\[ (\text{cf. OE and 'against, before, into': OS aht, Ofr. anda, and, Go. and, OHG ant, ON and}) \]

where the prepositional adverb and has apparently undergone 
stress reduction (Campbell, 1959: §73). It is significant that 
alternative spellings in o exist; compare

\[ \text{atflarat, (adfl): onsueop, 235} \]

As the orthographic alternation between a and o before a nasal is 
more characteristic of stressed rather than unstressed syllables, 
(see §2.1.1.2.6 and 3.1.1), this provides additional support to the 
view that the segment must carry some degree of stress in the Cp. 
dialect.
On the evidence of the use of this graph in the spelling systems of PE and Latin, see (2.1.19)

(2.1.19)

PE 'bed' [e]/[ɛ] (Gimson, 1980; §7.11)
Latin uerum (Allen, 1965: 48-49)

it can provisionally be suggested that it represents some sort of mid, front unrounded vowel in Cp. An examination of the various types of evidence available, as listed in (2.1.2), reveals that the graph probably represents a considerable range of different phonetic segments in this general area.

1.1 The graph e occurs in several forms in Cp. where

(a) The cognate forms in Germanic languages are spelt with a or e (Prokosch, 1939: §37);

(b) The PE reflexes generally contain the segment [i:] (Gimson, 1980: §7.09);

(c) Equivalent forms in other OE dialects (notably W-S) are spelt with æ (Campbell, 1969: §128).

(a) On the basis of the cognate forms in related Germanic languages, we can reconstruct the PG segment [a:], and possibly an intermediate W-G [a:] (ibid: §129). A development to [e:] in OE would be feasible phonetically. The PG vowel has presumably been raised in the course of its transition into OE, a process which
frequently affects long vowels (see §2.1.1.1 and references therein) 23.

(b) The PE reflexes support this conclusion. As the raising of long monophthongs is a phonetically natural process which affects the English vowel system after the OE period (§2.1.1.1), [e:] is a most likely candidate for the 'ancestor' of the PE segment [i:]. The fact that it has undergone raising supports the suggestion that the vowel should be long, and this presumably agrees with the position occupied by the relevant forms in OE metrical structure.

(c) The appearance of equivalent forms spelt with æ in W-S MSS does not conflict with the suggested value. §2.1.3 suggests that the symbol æ represents a segment which is low rather than mid front. It is perfectly feasible that such a slightly divergent development should occur from the proposed common ancestor in PG or W-G: the segment simply has a higher realisation in the dialect represented by Cp. than it does in that of the W-S MSS. Furthermore, it is an attested typological feature that parallel developments should regularly affect similar sets of segments in languages (Barrack, 1975: 30). It does not, therefore, seem unreasonable to suggest that, if a development affects a particular short vowel in the OE system, it should also affect its long counterpart.

As discussed in §2.2.1.2.2.2, the low short vowel in PG, [a], developed to the segment [æ] in the vast majority of environments in most OE dialects (Campbell, 1959: §131) but to [e] in the dialect represented by Cp. (ibid: §164). If such a dialectally divergent development is assumed to affect the short vowel system in Cp., the
suggestion that a parallel development (i.e. of W-G [a:] to [æː] in W-S, and to [eː] in the dialect represented by Cp.) should have affected the equivalent long vowels is given further support. Thus the graph e presumably represents [eː] in the forms in (2.1.20) 24.

(2.1.20)

angui(l)la: el 'eel' 174
(OHG al, ON all, W-S al)

cicad (æː): secggescre 'grasshopper' 461
(OFr. skere, schere, OHG scarl, W-S scearl, PE 'shears')

and with doubling of the vowel graph as a sporadic indication of vowel length (§2.1.1.1 and references therein)

basterha: beer 'bier' 264
(OS bara, OFr. bere, OHG bara)

1. The ea spelling is the result of a development peculiar to W-S (Campbell, 1959: §185).

1.2 e occurs in several forms in Cp. for which:

(a) the cognates are spelt with au or iu (Go.) au, io, or ju (ON), o, eo/io, or iu (OS), ou, eo/io or iu (OHG) (Wright, 1954:25);

(b) The PE reflexes usually have [iː] (Gimson, 1980: §7.09);

(c) The spellings of the relevant forms that occur in other OE MSS and indeed Cp. itself show considerable variation in different phonological environments. The account will therefore be sub-divided accordingly.

1.2.1 Before the graphs h c k which represent the essentially 'velar' consonants [x], [k] and [ɣ] respectively (see §2.1.14, 15 and 17)

(a) The cognates suggest original PG diphthongs [au] and [eu]
which enter OE as [æː] and [eː] respectively (see §2.1.9.1; 2.1.10.1). The most feasible explanation for the appearance of these monograph spellings in Cp. (ea and eo being the most usual representations of the reflexes of the PG diphthongs (see (c) below) would seem to be that for some reason, (possibly that the first element of the diphthongs has become more 'salient' (see §4.2.2.2.2.2.i and references therein)), the velar consonant has undergone a palatalisation process (Kuhn, 1970: §3.3.3; §5.31; §4.32). This would result in a sequence of a 'back' vowel followed by a 'front' consonant. The loss of the back second element of the diphthong (and the apparent subsequent raising of the first in the case of [æː]) can therefore been seen to be a phonetically natural development, making for ease of articulation (§1.3.6.2.1.2).

It is therefore quite reasonable to suggest that e should represent [eː] in the forms in (2.1.21) on the evidence of its supposed development from PG. The PG diphthongs develop into nuclei that function as 'long' in OE (Campbell, 1959: §38) and therefore it can be assumed that when they are monophthongised the resulting segment will be long. This also supports the supposition that a long vowel occurs in the forms in (2.1.21), which is presumably confirmed by OE metrical evidence.

(b) As the OE vowel has evidently been raised in the course of the transition into PE, the fact that the PE reflexes have [iː] supports the suggestion that [eː] should be the most likely value of the segment represented (§2.1.2.1.1).

(c) The only difficulty, therefore, in the assignation of a broad phonetic value to the graph e in the forms in (2.1.21) lies in the
extent of the spelling variation that occurs in the representation of
the relevant forms, both between the forms that occur in Cp. and
their equivalents in other OE MSS and between various forms
within the Cp. MS itself. Forms which presumably contain reflexes
of PG [au] are spelt with a, ea and e, and those with reflexes of PG
[eu] with e and eo in this environment in the Cp. MS (Campbell,
1959: §225; §227).

§2.2.1.1.3.2 concludes that the opposition between the long
segments normally represented by e, a, ea, and eo (i.e. [e:], [a:],
[a:o] and [e:o] respectively, see §2.1.2.1.2.1; §2.1.3.1.3) is suspended
before velar consonants. While it is possible to suggest that any
one of the values listed above could be represented by the graphs
that appear, given that [e:] seems to be the terminal value for the
historical developments outlined under (a) above, the appearance of
e spellings would seem to imply that [e:] is represented
irrespective of whether the source of the vowel is Pre-OE [a:o] or
[e:o]. Otherwise, the existence of such spellings would be difficult
to explain.

The variation between e, ea, eo and a spellings can therefore
be accounted for with reference to the phonemic status of the
segments concerned. As the value of those segments can
automatically be predicted from their environment, any graph that
is normally used to represent any of the phonemes that enter into
the neutralisation can appear. Furthermore the fact that the
written language is slow to reflect the developments of the spoken
(§1.3.2.1.2.1.i) provides an additional explanation for the existence of
these variants. Presumably, they represent the segment at
previous stages in its diachronic development. There is, therefore,
little doubt that e represents [e:] in the forms in (2.1.21).
calciculium: ieces sura 'cuckoo sorrell' 380
(OHG gouch, gauch, PE (dial.) 'gowk', W-S geac)\(^1\)

al(l)ium: gaarleec 'garlic, onion' 113
(OHG louch, PE 'leek', W-S leac)\(^2\)

1. Compare Cp. geac, 618
2. Compare Cp. leac, ynnilæc, 154, 448

1.2.2

e also appears in forms in Cp. for which, similar to those
discussed in 1.2.1,

(a) The Germanic cognates are spelt with au (Go.), au (ON),
g (OS), ou (OHG) (Wright, 1954: 25);

(b) The PE reflexes have [i:]; but

(c) Equivalent forms in MSS from other 0E dialects are spelt
with y and ie (Campbell, 1959: §200).

(a) The Germanic cognates suggest an original PG [au]. Unlike
the forms in 1.2.1, the stressed vowels do not seem to occur in any
specific synchronic environment, but an examination of the PG
protoforms suggests that the diphthong in these cases was always
followed by a high front segment, [i] or [j], in the unstressed
syllable. That such a segment should influence the preceeding
stressed vowel in some way, causing it to become more high and
front, is a well-attested phonetically natural development
(§1.3.6.2.1) \(^25\). It is therefore reasonable to expect that PG
[au]>Pre-0E [aːi] should be influenced by an [i] or [j] that follows
it. As e usually represents a mid front monophthong (see the rest
of this section), and such a segment is a feasible outcome for the reflex of Pre-OE [əː] in this environment 26, it can be concluded that e represents [eː] in forms such as that cited in (2.1.22) with a fair degree of certainty. As in 1.2.1, the fact that the segment has PG diphthong as its ancestor supports the conclusion that the segment should be long.

(b) The PE reflexes in [iː] also suggest that [eː] is the most likely value of the segment in the form in (2.1.22).

(c) In MSS representing the W-S dialect y or ie is the regular spelling of the vowel in the relevant forms. (Campbell, 1959: §200). This can, however, be accounted for as being the result of a perfectly natural dialectically divergent development (see ft. 26).

 e therefore represents [eː] in the form in (2.1.22).

(2.1.22)

casis: ned 'necessity, need' 420
(Go. naubs, OS nod, OFr. ned, W-S nied, nyd)¹

¹ This noun belongs to the j-declension, which suggests that the underlying unstressed syllable was [iz] (Campbell, 1959: §604).

1.3 e appears in certain forms in Cp. for which

(a) The PG cognate forms are spelt with o (Go, ON, OS) or uo (OHG) (Wright, 1954: 25);

(b) The PE reflexes have [iː] (Gimson, 1980: §7.09);

(c) Alternative spellings in Cp. and other OE MSS include e (Campbell, 1959: §36).
(a) The cognate evidence suggests an original long mid rounded back vowel in PG: [o:]. It also appears that a high front segment [i] or [j] followed in the underlying unstressed syllable in the forms concerned. As with the forms in 1.2.2 a natural phonetic development of the stressed vowel in this environment would be that it should, influenced by the following [i] or [j], become fronted to the segment [s:] (Campbell, 1959: §198). As front rounded vowels, especially when non-high, seem to be 'marked' segments 27, it seems natural that [s:] should eventually unround and merge with the more established phoneme /e:/ (see §2.2.1.1.2.5.iii). Thus [e:] is a likely value for e in the forms in (2.1.23), on consideration of the evidence of the suggested development of the vowel concerned from PG.

(b) As noted in 1.1 the fact that the PE reflexes have [i:] supports this assumption.

(c) The alternative spellings in æ in Cp. and other OE MSS present problems for the above analysis, as these may be interpreted as representing the rounded segment [s:] (§2.1.8), suggesting that the development from [s:]→[e:] is not complete. §2.2.1.1.3.1 concludes that there is no phonemic contrast between the segments [s:] and [e:] in the Cp. dialect. The use of the graph æ to represent [e:] can therefore be explained as being a result of the fact that developments in the spoken language are slow to be reflected in the spelling system, see §1.3.2.1.2.1.i. It is, therefore, fairly certain that æ represents [e:] in forms such as that in (2.1.23).
calleo: frafeleol 'to be cunning' 431
(OS gefolian, OFr. feleol, OHG fuolian, fuolen, PE 'feel')

1. While Bosworth and Toller (1898) suggest that the vowel represented by the e is short, it seems reasonable to regard this form as a compound of fele 'exceedingly' and felan 'to feel, perceive, touch'. The possibility of the verb being related to the adjective frafele 'saucy', 'impudent' must, however, be acknowledged.

1.4 'Compensatory lengthening'

In the form

accearium: stelil; 'steel', 55
(cf. OS stehli)

the cognate form suggests that the sequence [exi] occurred in PG. As noted in §2.2.1.2.2.3, PG [e] became [eo] before [x] in OE and this would revert to [e] in the Cp. dialect (compare §2.1.2.2.5, 2.6). The loss of [x] between voiced segments is a phonetically natural phenomenon (see §2.1) and it seems reasonable to suggest that the vowel should lengthen to 'compensate' for the loss of this segment (Campbell, 1959: §241; de Chene and Anderson, 1979). The PE reflex supports the suggestion that the stressed vowel in the form should be [e:].

2

The graph e occurs in a number of forms in Cp, the Germanic cognates of which are spelt with e and i. On this basis the PG segments [e] or [i] can be reconstructed. There is, however, considerable variation between forms containing a stressed vowel with this origin, both in the nature of their PE reflexes, and the range of possible spelling variants in the extant OE data. In view of this, therefore, it is best to sub-divide the material according to
the synchronic, and sometimes the diachronic, environment in which
the vowel appears. As with the forms in §2.1.1.2, constant cross
reference within §2.1, and forward reference to §2.2 is essential
before a satisfactory account can be achieved.

2.1 before r followed by a graph representing a consonant (other
than c, g, h, see 2.6)

(b) The PE reflexes of the forms concerned generally have [3:]
(Gimson, 1980; §7.19) 30;

(c) eo spellings also appear for PG [e] in this environment in Cp.
and other OE MSS (Campbell, 1959: §146).

As discussed in §2.1.1.2.4, it is likely that a sequence of [r]
followed by a consonant constitutes a 'back' environment in OE.
The frequent appearance of eo spellings would seem to indicate that
a glide usually develops after the original front vowel (compare
again, Campbell, 1959: §139), and the sequence [eo] might be
expected. §2.2.1.2.3.6 establishes that although the segments
normally represented by e and eo 31 contrast in this particular
environment, the contrast between the two segments is otherwise
very rarely attested. Given that the cognates do not suggest an
underlying [i] or [j] in the unstressed syllable, (see 3.4) it would
seem to be extremely likely that the segment [eo] is represented.
Of course, eo is the spelling that must be expected, and indeed it
is the prevailing representation of the segment concerned
(§2.1.10.2.1). The occasional appearance of e is, however,
understandable given that the contrast between the segments [e]
and [eo] only arises in one specific environment. In every other position [e] and [eo] do not contrast and therefore can be, and are, used interchangeably (see, particularly, 2.2). It is reasonable to suggest that e represents eo in the form

bitorius: erdling *farmer*, 302

(compare OS erba;

OFr irthe, erthe, erde; OHG erda, erada; Go airbe;
OE eorbe, and PE *earth*)

2.2 Before a consonant followed by a back vowel graph

(b) The vowel in the PE reflexes of the relevant forms is in this case usually [e]/[e] (Gimson, 1980: §7.11);

(c) Alternative spellings of these forms both within Cp. itself and other OE MSS include eo (Campbell, 1959: §205; §207) 32.

As discussed in §2.1.1.2.3, it is likely that this environment was considered 'back' in OE and, as with the form discussed in 2.1 above, [eo] is in all probability the segment represented in the forms under consideration. The suggestion that e should represent [eo] is more strongly motivated in this instance, as there is no phonemic contrast between the segments normally represented by e and eo in this environment (§2.2.1.2.2; 2.2.7) and the graphs are therefore interchangeable. Furthermore, the fact that eo spellings are by far the more frequent (Campbell, 1959: §210) and the diphthong is the 'terminal' value of the suggested sound change (compare §2.1.1.2.5) means that it is more likely that [eo] is represented than [e]. Thus e represents [eo] in the forms in (2.1.24)
(2.1.24)

crucus (cro cus): gelo 'yellow' 598
(OS, OHG gelo, OE geolu)

bapis (baptes): treu teru 'gum, resin, tar' 279
(OE teroru, Cp. 6161)

1. The 'free variation in the same lexical item provides strong evidence that the segments represented by e and eo respectively are equivalent in this context ($2.2.1.2.2.2$).

2.3 Before a morpheme-final consonant, followed by either a word boundary or a front vowel graph.

(b) In certain forms in Cp. the PE reflexes have either [e]/[ε], [i:] or [ei] (Gimson, 1980: §7.09; §7.22);

(c) e appears to be the only spelling in Cp. or any other OE MS.

Evidence from all the sources mentioned in (2.1.2) therefore supports the suggestion that [e] should be the segment represented by e in the forms in (2.1.25). The PE reflexes in [ei] and [i:] can be explained as being the result of developments that occurred after the OE period 33.

(2.1.25)

carbasus: segibusom 'the swelling of a sail' 412
(ON segel, OS segal)

avehit: on weg aferide 'way' 246
(OS, OHG, weg, Go. wigs, ON vegr)
That the segment has this value is also supported by the fact that the Latin words *signum* and *cista* apparently contained a mid rather than high front vowel when they entered the OE language (Campbell, 1959: §498). Thus *e* represents [e] in the forms in (2.1.26).

(2.1.26)

---

2.4 Before *l* followed by a graph representing a consonant (except *h*, see 2.5)

As noted in §2.1.1.2.2, when the reflex of PG [l] is followed by another consonant this may well be considered a 'back' environment in OE. There is reason to suppose, therefore, that PG [e] would be followed by a glide in Pre-OE and the segment [eo] would ultimately be attested (compare 2.1, 2.2). However, although digraph spellings are frequent for the reflexes of PE /e/ before /r/ followed by a consonant in OE (§2.1.10.2.1), variants with eo spellings are rare in this context, occurring, according to Campbell (1959: §146) 'regularly only when s precedes'.

It is therefore best to assume that the segment represented by *e* in the forms in (2.1.27) should be [e] rather than [eo]. Given
that a phonemic contrast operates between the segments [e] and [eo] in the Cp. dialect (if only in one environment, see 2.2.35), we would expect the segment [eo] to be given separate representation by the appropriate digraph 34 with far more regularity if it were the segment that occurred. The occasional eo spellings can, of course, be explained by the fact that as there is no contrast between [e] and [eo] in this particular environment, an occasional interchange in the use of the symbols e and eo can be expected. Thus e represents [e] in (2.1.27).

(2.1.27)

clavis(us): helma 'helmet' 4
bradigabo: felduop 'peewit' 327
(OS, OHG feld, OFr. feld, field, PE 'field')

and even, despite the digraph spelling

biothanatos: seolfboran 'a suicide' 299
(Go. silba, OS, OFr. self, OHG self, PE 'self')

1. The vowel has subsequently undergone 'homorganic lengthening' (Campbell, 1959: $283$).

2.5 Before l followed by h

It is worth noting that when l is followed by one particular consonant graph, namely h, eo spellings appear in W-S forms with a fair degree of consistency (Campbell, 1959: $146$). This suggests that in this environment a glide did in fact develop between the front vowel and the following back consonant group. The fact that [x] is fundamentally a 'back' consonant ($2.1.14$) would make this a fairly reasonable assumption.

In Cp., however, e is by far the most common spelling (ibid: $227$). This can be explained as being a result of the same process
that affected the reflexes of PG [au] and [eu] discussed in §2.1.2.1.2.1. Once more, it can be assumed that the 'velar' consonant (and, in this case, the whole consonant group) was 'palatalised'. The back element of the diphthong subsequently was lost and [e] is most likely to be the segment represented in forms such as that in (2.1.28)

(2.1.28)

\[\text{cer(v)us: elh 'elk'}\]
\[\text{(OHG elaho, elho, W-S eolh)}\]

2.6 Before \(r\) followed by \(h, g, c\)

That the same phenomenon should affect 'back' consonant groups with \(/r/\) explains the appearance of \(e\) representing \([e]\) in forms such as that in (2.1.29), see Campbell (1959: §227).

(2.1.29)

\[\text{bitulus (betula): berc 'birch'}\]
\[\text{(OHG bircha)}\]

3

\(e\) also appears in many forms in Cp. where the cognates suggest that the origin of the stressed vowel is PG [a]. Again, there is much variation in the spelling of the reflexes of this segment in the various OE dialects, depending on the particular diachronic or synchronic environment in which it appears. The discussion will therefore be sub-divided accordingly.
3.1 Before a morpheme-final consonant followed by either a word boundary or a front vowel graph, e appears in certain forms in Cp. for which:

(a) The Germanic cognates have a;
(b) The PE reflexes have [e] or [ɛ] (Gimson, 1980: §7.11);
(c) æ spellings occasionally appear in Cp. and other OE MSS (Campbell, 1959: §194).

(a) In the forms concerned, the cognates (see (2.1.30)) reveal that the stressed vowel in the proto-form was PG [a], followed by an [i] or [j] in the unstressed syllable. As noted in §2.1.1.2.1, PG [a] developed to [a] in Pre-OE. It can be assumed that a following high front segment would cause the vowel to raise as well as front, and on the evidence of what must be considered a plausible phonetic development 35, the mid vowel [e] can be suggested as the most likely value for the segment represented by the graph in the forms in (2.1.20).

(b) The PE reflexes support this assumption. The fact that the vowel has not been raised to [i] but remains mid indicates that the segment is to be regarded as short rather than long (see ft.10).

(c) The occasional æ spelling does not present too much difficulty for the proposed analysis. §2.2.1.2.2.6.iv reveals that there is no contrast between the segments that are normally assumed to be represented by æ and e in this context, thus it is possible that these graphs may be used interchangeably. As [e] is the 'terminal value' of the sound change that presumably affects the vowel in
the forms concerned, the fact that \( e \) spellings are more frequently attested than any others, supports the evidence already cited to the effect that \( e \) should represent \([e]\) in the forms in (2.1.30).

\( (2.1.30) \)

acies: \( ecg \) 'edge' 51  
(OS \( eggia \), OFr. \( eg \), \( ig \), OHG \( ekka \) cf Lat. \( acia \))

culcites(ta): \( bed \) 'bed' 610  
(OHG \( petti \), Go. \( badi \), ON \( beðr \))

The vowel in the Latin loan
caldaria; cetil 'kettle', 405 (Lat. catillus)

has also presumably undergone this development 36.

The derivational affixes

\(-ende\) PG [andi] (Campbell, 1959: §339; §355.3)
as in

convincens: oberstælende 'to confute, convince', 506

and

\(-ett\) PG [atjan] (ibid: §339)
as in

campus: cleppettende 'palpitating', 411

presumably also contain the segment \([e]\) from the same PG source.

§2.3.2.1.2 establishes that these affixes are basically stressed in OE.

The vowel in the affix

\(-ere\), PG [\(æ:ri\)] (Campbell, 1959: §337)
as in

augur: hælsere 'soothsayer', 253

advocatus: thingere 'advocate, intercessor', 89

has apparently lost its length and quality 37. This may suggest
that the syllable concerned is to be considered 'unstressed' in synchronic OE, and the segment represented by the graph e is likely to be [ə] (see 6 below).

(2.3.12) however shows that the nature of the PE reflexes of this affix indicate that in all probability the vowel concerned retained some degree of stress in OE. The present account therefore suggests that [e] is, in fact, the value of the segment represented. The syllable is basically stressed, although it is possible that the degree of stress carried is very slight (ibid: §92). Clearly this is one of the cases where the conclusion reached on the basis of the evidence of the OE spellings conflicts with that suggested by that of the PE reflexes. The controversy exemplifies the type of difficulties that can arise from an over-rigid division of the stress continuum (see §2.3.2.3 and the discussion of 
-ed and -en in 6.2 below).

3.2 Before \( l \) followed by a graph representing another consonant, e appears in this environment in forms in Cp. for which, as in the forms in 3.1

(a) The cognates in Germanic languages have \( a \);
(b) The PE reflexes are \( [\varepsilon] \) or \( [e] \);
(c) \( æ \) commonly appears as an alternative spelling in Cp. and other OE MSS (Campbell, 1959: §193a).

(a) As in 3.1 above, the cognates suggest PG [a] followed by an underlying [i] or [j] in the unstressed syllable. §2.1.1.2.2 established that PG [a] \( > [\varepsilon] \) but then retracts to [a] before /l/ followed by a consonant in the Cp. dialect. Given the existence of
a high front segment in the following syllable, however, it can be predicted that a plausible phonetic development would be for the vowel to front to [æ] and subsequently raise to [e] (Colman and Anderson, 1983; Campbell, 1959: §193a).

(b) The PE reflexes support this assumption, again the fact that the vowel is mid, rather than high, confirms that the segment is short.

(c) The fact that æ spellings are fairly common in OE MSS and Cp. itself does not pose too great a threat to the proposed analysis. §2.1.2.3.5 establishes that the contrast between [e] and [æ] is suspended in this environment. The realisation of the segment concerned could therefore be either [æ] or [e] or any suitable intermediate value. Given that the ultimate result of the proposed phonetic development is [e], the very fact that æ spellings are attested is best explained by the assumption that the raising process has already taken place in the Cp. dialect. The æ spellings are, of course, to be explained by the fact that the spelling system is always slow to reflect phonetic development. Thus æ represents [e] in forms such as those in (2.1.31).

(2.1.31)

\[\text{fortex (v): edwelle 'whirlpool' 908}\]

\[\text{conc(h)is: scellum 'shell' 560}\]

\[(\text{Go. skalja, OE scill, scyll})^1\]

1. The W-S form has i or y due to the fact that Pre-OE [æ] was diphthongised by the preceding palatal (Campbell, 1959: §185) before mutation occurred.
3.3 Before a graph representing a nasal consonant

e appears in this environment for PG [a] in Cp. in forms for which

(b) The PE reflexes have [ɛ] or [i];

(c) Variant spellings in OE MSS include æ (Campbell, 1959; §193d).

(a) The Germanic cognates of the forms in this section once more suggest that [a] was the original stressed vowel followed by a high front segment in the unstressed syllable. As noted in §2.1.1.2.6, when PG [a] occurred before a nasal, it developed into a segment represented by a or o (i.e. [ɔ]) in Pre-OE. It seems plausible to suggest that this segment would be influenced by the [i] or [j] that followed it and become fronted to [ə] and even raised to [ɛ]. Thus, from a consideration of its likely historical development [e] can be suggested as a possible value for the sound represented by the graph e in the forms in (2.1.32).

(b) The PE reflexes (where these are available) support this conclusion. The reflex is [ɛ] (sometimes [i]) which confirms the operation of the raising process, and the quality of the vowel (i.e. [i] rather than [i]) (Gimson, 1980; §7.10)) leaves us in little doubt that the segment represented should be short.

(c) Occasionally æ spellings appear in other OE MSS. §2.2.1.2.2.6.ii suggests that there is no phonemic contrast between [ə] and [ɛ] in this environment, thus it is perfectly conceivable that both graphs æ and e should appear in this context without
risk of confusion. Given that the segment concerned ultimately ends up with spellings that indicate a mid rather than low realisation in OE (Campbell, 1959: §193d), it seems reasonable to assume that [e] is in fact the segment represented. Any æ spellings can be explained as being orthographically 'archaic'. This suggestion is more easily maintained than in the case of the e spellings discussed in 3.2. The e spellings 'outnumber the æ forms in Cp. by about three to one' (ibid: §193d) and it is fairly certain, therefore, that [e] is the value of the stressed vowel in the forms in (2.1.32).

(2.1.32)

confusione: *gemeng⁴unjoge* 'to mix, mingle' 523
(OS mengian, OFr. *mengia*, OHG *menghid*, OE *mengan*)

aneta(anas): *enid* 'duck' 158
(OHG anut, OE (Ep.) anid)

3.4 Before r followed by a graph representing a consonant e appears for the reflex of PG [æ] in this context in certain forms in Cp. for which

- The PE reflexes have [e]/[e];
- Alternative spellings in OE MSS include i, y (in W-S) (Campbell, 1959: §200.2) and æ in MS representing other dialects (ibid: §193a).

(a) The cognates once more suggest PG [a] followed by a high front element in the unstressed syllable. As noted in §2.1.2.4, PG [a] develops to a diphthong [æo] in this environment in most OE dialects, and it can be assumed that the [i] or [j] that follows will
affect its realisation. As with the diphthong that is developed from PG [au] discussed in 1.2.2 above, the segment that results from this process is represented by e in Cp. and a mid front vowel is a plausible phonetic outcome for the proposed development.

(b) The PE reflexes (such as are available) do not conflict with this proposition.

(c) As with their long counterparts, the W-S spellings ie and y can be explained as representing the result of a divergent development in that dialect (see §2.1.2.1.2.2 and references therein).

Less easy to explain are the occasional æ spellings within Cp. itself, such as

\[\text{convaluit : gewærpte 'to recover', 572}\]
\[(W-S \text{ gewyrpan})\]

Given that there is no contrast between the segments [æ] and [e] in this environment (the contrast is rather between the segments [æ] [eo] and [e], see (2.2.35)), the most likely explanation would seem to be that the graph æ in this case represents the segment [e]. Given that æ and e frequently interchange in a number of environments (see 2 above and §2.1.3.2), this does not seem an implausible suggestion. It must be noted that such spellings are comparatively rare. Confusion of this type is only to be expected, given the complex nature of this phonological sub-system in Cp., see (2.2.35).

Thus [e] is the stressed vowel represented by e in the forms
in (2.1.33).

(2.1.33)

convenientes : seruuende 'to plan, devise' 581
(W-S sirwan cf. searu 'a device', OHG saro, gi-sarwi, Go. sarwa)

bolides : sundgerd in acipe 'sounding pole' 319
(OHG gardea, garda, W-S gird)

3.5 Before graphs representing 'back' consonants and back consonant groups

This is another environment in Cp. where the graph e stands for the reflex of PG [a] followed by a high front segment. Corresponding forms in W-S are spelt with i and y (Campbell, 1959: §200). As noted in §2.1.1.2.2.1, 2.3 and 2.4, PG [a] developed to [æ] before velar and velarised consonants. This diphthong was presumably influenced by a following [i] or [j], and [e] is a reasonable value that can be suggested for the segment that results from this process (see 3.4 above).

Thus e represents [æ] in forms such as that in (2.1.34).

(2.1.34)

schalantis vel luscinia : nehtegale 'nightingale' 52
(cf. Go. nahtu, OS naht, OFr. 'nacht, OHG naht
OE niht, naht, neaht, nyht : Campbell, 1959: §628.c)

4

In some forms in Cp. however, e appears for PG [a] where there is no evidence of an underlying high front segment in the following syllable.
(b) The PE reflexes of these forms usually contain [æ], [ei] or [
][o:] (Gimson, 1980: §7.16; §7.12; §7.22);
(c) In most other OE MSS, and also in Cp. itself, æ (and very
occasionally a, see §2.1.1.2.5) spellings are attested.
(Campbell, 1959: §168).

(a) As noted in §2.1.1.2.1, the reflex of PG [a] in most OE dialects
is a segment represented by æ. The appearance of æ spellings in
many forms in Cp. and closely related MSS (see §1.3.1.1.1
and references therein) is traditionally explained as representing the
result of a raising process specific to the dialects of the MSS
concerned (Campbell, 1959: §164; Colman and Anderson, 1983). Given
that there is no other feasible explanation as to why a graph which
represents the mid vowel in most other environments should occur,
it is reasonable to accept that æ represents [æ].

(b) As the development of PG [a]>[e] is dialect specific, there is no
difficulty in explaining the PE reflexes, which suggest an original
low vowel. Presumably these have developed from an OE dialect
other than that represented by the Mercian MSS (§1.3.4.3.2.ii).

(c) Similarly, the æ spellings in other OE MSS represent the more
regular development of PE [æ] in OE. The existence of occasional æ
(or even a) spellings in Cp. itself can be explained with reference to
the phonemic status of the segments concerned (see §2.2.1.2.3.1.ii;
2.3.2.i). As a result of the development described in §2.1.1.2.2.5,
there is no contrast between [æ], [e] or [a] in this context in the
Cp. dialect. It follows, therefore, that the graphs æ, e, and a which
represent these segments can be used interchangeably without
confusion.

Thus [e] is represented by e in the forms in (2.1.35).

(2.1.35)

ars plumaria : uuyndecreft 'the art of weaving' 217
(OFr. creft, OS, OHG craft, PE 'craft', W-S craft)

aleator : teblera 'gamesman, gambler' 111 1
(OHG zabel, W-S tefl, Lat. tabula)

1 This Latin loan presumably entered OE at an early enough date to undergo the relevant developments (Campbell, 1959: §495)

5 e also appears in forms in Cp. for which

(a) The cognate forms in Germanic languages have o;

(b) The PE reflexes generally have [e]/[e] (Gimson, 1980: §7.11);

(c) Cp. and other MSS have variant spellings in e (Campbell, 1959: §196).

(a) The cognates suggest that the origin of the stressed vowel in these forms was PG [o], and that this [o] was followed by a high front element. As with its more frequently attested long counterpart 38, it seems reasonable to suggest that the segment would develop to [o] and eventually to [e] in this environment in Cp.

(b) The PE reflexes support this suggestion, also confirming by their quality that the vowel is short (i.e. it has apparently escaped the raising process that affects long vowels in English).

(c) The e spellings can be explained with reference to §2.2.1.2.2.6.v.
There is apparently no contrast between [ə] and [e] in the Cp. dialect and ə simply remains in the spelling of some forms because the orthographic system does not immediately reflect phonological development.

Thus [e] is the segment represented by e in forms such as that in (2.1.36).

(2.1.36)

cerefolium : cerfelle 'chervil' 456
(Latin charfolium : Campbell (1959: §196))

6. Unstressed syllables

6.1

The graph e also occurs in syllables which are, according to the principles outlined in §2.3.2, totally unstressed in OE. Like the graph a ($2.1.1.3.1), e frequently appears in inflectional affixes which are presumably unstressed. The present account accepts that their origins and history are as outlined by Campbell (1959: Chs VII, XI, XII and XVI) and Prokosch (1939: part 3). These sources suggest that in the vast majority of cases the value of the segment in Pre–OE was either [ə] or [i], which subsequently underwent development to a segment represented by e (Campbell, 1959: $369), presumably with the value [ə] 39.

(b) The PE reflexes of the affixes concerned (if they remain 40) support this suggested value, they generally have [ə].

(c) There is considerable variation in the spelling of the particular
Nominal affixes

Strong masc. dat. sing.: Pre-OE [a] (Campbell, 1959: §571)
- caumati : suole 'heat, burning' 415
- casso (in cassum) : idle 'idle' 421

Masc. i-stem nom. plural: Pre-OE [i] (ibid: §600)
- competentes portiunculas : gelimplice daele 'part' 548

Fem. i-stem nom. plural: Pre-OE [a] (ibid: §604)
- antennae : wade 'garments, weeds; rigging' 164

Fem. weak nom. sing: Pre-OE [a] (ibid: §616)
- concha : beme 'trumpet' 571
- cænum : wase 'ooze, mud, slime' 386

Fem. i-stem acc. plural: Pre-OE [æ] (ibid: §591)
- altrinsecus : on ba halfe 'half' 121

Masc. ja-stem nom. sing: Pre-OE [i] (ibid: §576)
- cereacus : hornblauuere 'horn-blower' 454

ja/jœ stem adjective nom. plural: Pre-OE [a] (ibid: §645)
- attoniti : hiysnende 'listening' 267

a/o stem adjective nom. plural: Pre-OE [æ] (ibid: §640)
- conjurati : gemode 'agreed' 520
- aporiamur : biað breade 'to be reproved' 180

Adverbial suffix: Pre-Oe [litæ] (ibid: §661)
- annua : gerlice 'yearly, annually' 170

Verbal affix
3rd person preterite singular: Pre-OE [a] (ibid: §750)
- actionabatur : scirde 'to bring a charge against' 62
- contionatur : maðalade 'to speak, say' 586
affixes involved within Cp. and certain other OE MSS (ibid: §369 and §2.1.3.5; §2.1.4.5.1; 5.2). §2.2.1.3.3.1, however, suggests that it is in fact unlikely that any phonemic contrast remained between [a], [i] and [α] in unstressed syllables in the Cp. dialect. The graphs e, æ and i have therefore presumably become equivalent and the segment [a] alone is represented. The appearance of æ and i can once more be explained as being a result of the conservative nature of spelling systems in general.

Thus e represents [a] in the unstressed syllables of the forms in (2.1.37).

6.2

In the above instances the affixes in question have no reflex in PE, which confirms the suggestion that the OE vowel was unstressed and 'unspecified' in quality.

In some cases, however, the vowel in the PE reflex of the affix in question remains. While this presents no problem in the case of the forms in (2.1.38)

(2.1.38)

3rd person singular present tense of verbs of all classes: Pre-OE [a] (Campbell, 1959: §750)

cotizat : tebleth 'to gamble' 497
cf. PE [æs] (s) 'watches' 1, and archaic [eθ] 'blesseth'

Genitive singular of strong masc. nouns: Pre-OE [a] (ibid: §571)

calciculum : jeces surz 'cuckoo's sorrel' 380
cassidias : helmes 'helmet' 418
cf. PE [æs] (s) 'witches' 1

1 The vowel only appears in certain allomorphs, conditioned by the

as purely inflectional material is represented and it is impossible to suggest that the vowels concerned should carry any stress (§2.3.2.1.2), the value of e in the underlined syllable of the forms in (2.1.39) is more difficult to determine.

(2.1.39)

Past participle of weak verbs of Class I: Pre–OE [i] (Campbell, 1959: §750)

clabatum(v) : gebyrđed 'bordered, edged' 487
cf. PE [ad] (D) 1 'wanted'

Past participle of all strong verbs: Pre–OE [ə] (ibid: §731.e)

bat(t)uitum : gebeaten 'beaten' 265
concretrum : gerunnen 'run together, congealed' 593

1 Again, the realisation of the morpheme is phonologically conditioned.

On the one hand, the fact that æ and i spellings can represent the vowel in these affixes (§2.1.3.5; §2.1.4.5.2) suggests that the syllable must be unstressed, as otherwise the vowel reduction which results in the spelling variation would not have occurred. Thus e must represent [æ]. On the other hand, §3.2.2.2.2 established that the syllables concerned represent derivational as well as inflectional material in OE, and as such must be said to retain some degree of stress. §2.1.2.1 – 5 have established that e represents a mid front rather than 'indeterminate' vowel in stressed syllables.

Clearly, it is impossible to reach any certain conclusion. The present account suggests that as the vowel regularly remains in
the PE reflexes of the affixes concerned, this may well indicate that the syllables probably carried a higher degree of stress than those that represented affixes that were purely inflectional. The morphological and phonological status of these syllables and affixes is obviously ambiguous, and the proposal that the vowel occurs in a syllable which carries a very slight degree of stress, and is realised as either [e], [ə] or a segment with some intermediate value is as precise an interpretation as can be hoped for. Once again, the inherent difficulties in the over-rigid division of the OE stress continuum are brought to our attention.

Similarly, the fact that i occasionally appears in other OE MSS to represent the vowel in the derivational prefix ge-, [i] (Campbell, 1959: §369) suggests that the morphological and phonological status of the syllable is uncertain. As noted in (3.2.29.ft.1), this affix seems to be losing its derivational force, and it is therefore reasonable to assume that e represents [ə] in the first syllable of the forms in (2.1.40)

(2.1.40)

ge- : Pre-OE [i] (Campbell, 1959: §369)
(OHG ge-, ka-, ki-, ge-, ke-, Go. ga-, OS gi-)
concessit : geuæt 'to go, withdraw' 576
compactis : geædrædon 'joined, gathered together' 512

6.3

In the forms in (2.1.41), e presumably represents a 'linking vowel' (§3.2.5) and it cannot therefore be claimed that it derives from any particular segment in PG. The syllabic is definitely unstressed, and [ə] would seem to be its most plausible phonetic
realisation.

(2.1.41)

coa
gulum(ulum) : ceselyb 'rennet, cheese drug' 562
carduelis : linetuige 'linnet' 397

6.4

In the forms in (2.1.42), e appears for Pre-OE [a] and [i], although no inflectional affix is involved: i.e. the syllable is the second in a disyllabic root (but see further §3.2.2.3).

(2.1.42)

conpos : fe
gen 'fain' 544
(OS f
gen) (Campbell, 1959: §334)
cardella(uelis) : Distetuige 'goldfinch' 381
(OHG distil, PE thistle)
cupa : by
den 'bushel' 613
(OHG butin, Latin butina)
byrseus : le
er\yrhts 'tanner' 344
(PE 'leather')

6.5

Where e appears before a liquid or a nasal consonant, as in the forms in (2.1.43), it can frequently be supposed to have arisen by a process of 'parasiting' (Campbell, 1959: §363). There is, however, some controversy over the question of whether the e in these forms actually represents a phonetic segment at all. In PE, liquid and nasal consonants in word-final position often assume a syllabic
function (Gimson, 1980: §8.22), and it is possible that a similar process has operated in OE (Campbell, 1959: §331.4). According to Campbell (1959: §363), 'owing to the co-existence of the types nagl and nagel the groups el, er, em, en become regarded as expressing syllabic consonants', (see also Colman, 1983b: 274). Ultimately, the precise nature of the phonetic sequences represented is irrecoverable, and given that the difference between the sequences [əl] [ər] [əm] [ən] on the one hand, and [l] [r] [m] and [n] on the other is phonetically very slight (they occur in free variation in most PE dialects, see O'Connor, 1973: 146; 149) it will suffice to acknowledge that e either represents the segment [ə] or functions simply as a diacritic, indicating the syllabic nature of the final consonants in the forms in (2.1.43).

(2.1.43)

citonium (cydonia) : **goodappel** 'crab apple' 447
abelena : **hæselhnutu** 'hazel nut' 33
cauterium : **merciseren** 'branding iron' 362 (Go. *isarn*)
corbus(is) : **cauuel** 'colewort, cabbage' 513 (Latin *caulis* Campbell, 1959: §§509; 517)

6.6 In a few cases the Germanic cognates suggest that e represents the reflex of a PG back vowel.

While the development of the back vowels [u] [ə] and [o] in unstressed syllables to an 'indeterminate' segment such as [ə] is phonetically plausible, and this does in fact occur in the late OE period (Campbell, 1959: §379), the prevailing spellings in Cp. suggest that the change is not generally attested in that dialect,
except when the vowel is the first in a sequence of two unstressed vowels (ibid: §385). [ə] is therefore the value of the vowel represented by e in the third syllable of the form

\[ \text{conpagem : gegederung 'a gathering', 549} \]

The fact that the Germanic cognates of the form in (2.1.44) suggest that the segment represented by e was originally a back vowel shows that the second element of this 'obscured compound' (§3.2.7.3.2) must have undergone a considerable amount of stress reduction, and is in all probability totally unstressed. The e spelling would otherwise be difficult to account for.

(2.1.44)

bubalis(us) : weosend 'buffalo' 337
(cf. wees 'a soaker', hund 'dog', OHG wisunt: see §3.2.7.3.2)

This symbol does not appear in the orthographic systems of PE, and by the time the roman alphabet was being adapted to record OE data, it apparently represented 'mere variants of e' (Campbell, 1959: §67; Allen, 1965: 60–62). It is therefore not possible to make a general statement about the broad phonetic values of the segments represented by the graph along the lines suggested for a and e in §2.1.1 and §2.1.2 respectively. The most that can be claimed is that it is likely that e represents segments which did not occur in the Latin sound system, as the OE scribes felt it necessary to make frequent use of a symbol that was rarely used in the roman alphabet. The fact that the graph does not appear in
the orthographic systems of most other Germanic languages must also be noted 42. However, it is possible to gain some idea of the general phonetic value of the segment represented from an examination of the letter shape itself.

The symbol æ is adapted from a ligature of the graphs a and e of the roman alphabet. It seems reasonable, therefore, to suggest that the segments represented will have features in common with both segments represented by a and e respectively. As [a(:)] are essentially low and unrounded, and [e(:)] essentially front and rounded, it is likely that the low front unrounded segments [æ(:)] are represented, and the use of the graph æ to represent 'variants of e' in Latin would seem to support this conclusion 43.

An examination of (a) the cognate forms in Germanic languages, (b) the PE reflexes and (c) the OE spelling variants of forms containing æ in Cp. again suggests that the graph represents a number of segments with different broad phonetic values within this general area.

1.1 æ appears in forms in Cp. for which:

(a) The Germanic cognates are spelt with a (ON, OS, OHG) and e (Go.) (Wright, 1954: 25);

(b) The PE reflexes have [i:] (Gimson, 1980: §7.09);

(c) Variant spellings in W-S MSS are æ, and e appears more regularly in Anglian texts including Cp. (Campbell, 1959: §128).

From this evidence, it would appear that we are dealing with exactly the same set of segments as those represented by e, discussed in §2.1.2.1.1. The diachronic evidence, therefore,
suggests that the segment [e:] is represented, whereas the use of a
different symbol in forms such as those in (2.1.45) may lead us to
suppose that a different phonetic segment occurs. In view of the
relatively small number of forms where ã appears for the segment
in question, it is advisable to give more weight to the evidence of
diachronic development of the sound rather than that of the
synchronic spellings in the MSS, and the ã spellings are perhaps
best explained as being 'due to the imperfect differentiation of the
symbols which were equivalent in the contemporary spelling of
Latin' (Campbell, 1959: §128 ft.2) . Thus ã in all probability
represents [e:] in the form in (2.1.45).

(2.1.45)

(h)alitus : ãthm 'vapour, breath' 130
(OS aðum, OFr. ethma, adema, OHG atam, atum, OE eðm)

This form, therefore, illustrates the dangers of over-literal
interpretation of the spellings that appear and the necessity for
constant cross-reference between the various sources of evidence
listed in (2.1.2) in order to reach a satisfactory analysis.

1.2 ã appears in forms in Cp. for which:

(a) The Germanic cognates are spelt with ai (Go.), ei (OHG, ON),
    e (OS) (Wright, 1954: 25);
(b) The PE reflexes contain the vowel [i:] (Gimson, 1980: §7.09);
(c) ã is the only spelling found in the relevant forms in Cp. or
    any other OE MS (Campbell, 1959: §157).
(a) As noted in §2.1.1.1, PG [ai] can be reconstructed from this particular correspondence class. The difference between the forms considered in this section and those discussed in §2.1.1.1 is that the cognate evidence reveals that the stressed vowel was, in the case of the forms in (2.1.46), followed by a high front segment in the unstressed syllable. §2.1.1.1 noted that the regular development of PG [ai] into OE was to the segment [a:]. It may be expected that the following [i] or [j] would cause this segment to be fronted to the long low front vowel [æ:]. This proposed value does not conflict with that suggested on the basis of the letter shape above, and that æ should represent [æ:] would seem to be a reasonable assumption.

(b) The PE reflexes presumably result from the raising process which is very commonly attested with long monophthongs in the historical English period (see §2.1.1.1 and the references therein). This, therefore, provides additional evidence of the length of the segment represented by æ in the forms in (2.1.46), and the fact that the PE reflex is 'front' supports the conclusion that æ should represent a 'front' rather than 'back' segment in Cp.

(c) There is no variation in the spellings of the relevant forms in the extant OE MSS to support or refute this conclusion. It is therefore very likely that æ represents [æ:] in the forms in (2.1.46)

(2.1.46)

competentes portiunculas : gelimplice dæle 'deal, part, portion' 548
(OS del, deil, OFr. del, OHG teil, Go. daila)
ambages: *ymbeuspe* 'a digression' 147
(OHG *umbisueifan*, OE *swapan* 'to sweep')

in

*agastrum*: *agmang* 'a mixture of eggs' 105
(OHG *ei*, ON *egg*)

the [ai] diphthong arose in W-G rather than PG, as described by Campbell (1959: §120).

1.3 æ appears in forms in Cp. for which:

(a) The Germanic cognates have au (Go., ON), o (OS), ou (OHG) (Wright, 1954: 25);

(b) The PE reflexes contain the segment [i:] (Gimson, 1980: §7.09);

(c) Alternative spellings of the forms concerned in Cp. and other OE MSS include ea and e (Campbell, 1959: §225).

In this group of forms, æ appears for the reflex of PG [au] before a 'velar' consonant. It is evident, therefore, that the segment in question is the same as that represented by e discussed in §2.1.2.1.2.1. The reasons behind the assumption that [e:] should be the value of the segment represented, and that the existence of variants in æ can be seen to be the result of the fact that spelling systems are conservative by nature, have been discussed at length in the relevant section. Thus æ in all probability represents [e:] in the forms in (2.1.47).

(2.1.47)

cuculus: *geac* 'cuckoo, gowk' 618
(OHG *gouch*, W-S *geac* (Cp. *iaces*, 380)

ambula: *lac* 'leek, onion' 154
c(a)e*p*a: *ynnilac* 'onion' 448
(ON *laukr*, OHG *louch*, W-S *leac*, Cp. *gearleec* 113)
1.4 In the forms represented in (2.1.48)

(2.1.48)

convincens: _oberstalende_ 'to confute, convict' 506
convicta: _oberstaled_ 'convicted' 515

it would seem that the original PG sequence was [aζ]. PG [a] would become [æ] in Pre-OE, and after the loss of [θ], the segment would presumably undergo 'compensatory lengthening' to produce the vowel [æː] (Campbell, 1959: §421; Colman, 1981).

2. The graph æ appears for the reflex of PG [a] in many forms in the Cp. MS. An examination of the relevant cognate forms, reflexes in PE and alternative spellings that appear in Cp. and other extant OE material suggests that the segment represented is in all probability identical to that represented by e, discussed in §2.1.2.3 & 4. The reasons for assuming that [e] is its most likely broad phonetic value and that the graph æ appears as a result of the fact that the spelling system is slow to reflect the phonological developments that affect the vowel in the forms concerned has been discussed at length in those sections, and it is therefore fairly certain that æ represents [e] in the forms in (2.1.49) 45.
(2.1.49)

arx : fæstin 'fortress' 204
(OS festi, OFr. fest, OHG fasti, festi cf. PE 'fast')
cuneus : wæcg 'wedge' 626
(OHG wecki)

conliso : slegge 'stroke, blow' 582
(Go. slahts, OS slegi, OFr. slet, OHG sleg PE 'slay'
OE sleg. see §2.1.2.3.1)
tantalus : albitu 'swan' 30
(OHG albis, alpis, elpis, OE iliffe cf. Latin albus
'white' and the river name Elbe)
alveum : edwelle 'whirlpool' 137
(OE edwielle PE 'well')

sublatorium (suffl) : bloestbælg 'bellows' 28
(Go. balga, OHG balg, OE blastbelg, see §2.1.2.3.2 cf.
PE 'belly')
convaluit : gewarpte 'to recover' 572
(OE gewerpan, gewyrpan see §2.1.2.3.4)
avus : ældra fader 'father' 241
(OS fader, fadar, OFr. feder, fader, OHG fatar,
Go. fadar)
canalibus : waterørum 'water pipe' 372
(OS watar, OFr. weter, OHG wazzar, Go. wato)
avellanus : hesel 'hazel' 243
(OHG hasal)
citonium (cydonia) : goodæppel 'crab apple' 477
(OHG apfel)
ap(parable): winfat 'wine vat' 191
(OHG winfaz see §2.1.2.3.6)
capillatur(io) : faxnis 1 'hairiness' 364
(OHG fahs, OFr. fax, OHG fahs, W-S feax)
axis : æx 1: 'axis, axle tree' 259
(OHG ahsa see §2.1.2.3.5)

1 In these two forms the vowel presumably undergoes the historical
development
[a] > [æo] > [æ] > [e]  
($\S$2.2.2.2.2)
For reasons outlined in $\S$2.2.2.3.10 it seems that [e] is the most
likely value of the segment, and the æ spellings can be explained
by the fact that
(a) the spelling system is slow to reflect recent phonological
developments, and
(b) synchronically, there is no distinction between [æ], [e] and
even [æo] ($\S$2.1.9.4.2) in this position.
3. In the form

amites : laergae 'pole, weaver's beam', 143
(W-S lorrh, cf. Ep. lorge)

it would appear that the underlying vowel is PG [o]. This has considerable implications for the phonemic status of the segments represented by a, æ and e respectively, which will be discussed in §2.2.1.2.6(v) and ft.27).

4. In the form

cucumis : popaeg 'poppy', 611,
(Latin papaver, OE popig)

æ occurs in a derivational affix, which has apparently been substituted for part of the Latin word papaver (Campbell, 1959: §518). Given the nature of the PE reflex, it seems reasonable to accept that the syllable concerned carried some degree of stress in OE (§2.3.2.1.2). It is, however, difficult to determine the exact synchronic quality of the vowel represented in the form in Cp. While it is possible that the vowel in the 'suffix' may at one time have had the value [a], given that the suffixes (ij) and (æj) merged in OE (Campbell, 1959: §381), [i] would seem to be its most likely value.

5. æ in unstressed syllables

The graph æ (as noted in §2.1.2.5) is used to represent segments in unstressed syllables in Cp. (see §2.3.2). In many
cases, æ appears in an inflectional affix in which the vowel is also represented by e. The reasons for the assumption that [æ] is the most likely realisation of the segment concerned, and the fact that æ appears because the written language is slow to reflect developments in the spoken have been discussed at length in §2.1.2.6.

Thus æ represents [æ] in the forms in (2.1.50).

(2.1.50)

Weak fem. nom. sing.: Pre-OE æ (Campbell, 1959: §616)
- calciculum : leces suræ 'cuckoo sorrel' 380
- acinum(os) : hindberia 'raspberry' 59

jœ stem fem. nom. plural: Pre-OE æ (ibid: §591)
- amites : lœge 'pole, weaver's beam' 143
and the 'linking vowel' in the compound
- alneum : fulatreo 'black alder' 117

1 The æ spelling in the second syllable of
- arbata : sibre 'sifted' 216

apparently the past participle of siftan 'to sieve', a weak verb of class II, has significant implications for the analysis. The fact that æ appears for the reflex of Pre-OE [i] (§2.1.2.5.2) suggests that the syllable must be totally unstressed and that the vowel it contains is in all probability [æ]. As noted in §2.1.5.5.2 however, a strong case can be made to support the suggestion that 'past participle' suffixes carry some stress in OE, and the segment represented may, in fact, be [e].

Note, however, that is is doubtful whether this form is a past participle. Campbell (1959: §444) suggests that the entry represents the noun sîfeæ 'siftings, bran' and thus perhaps it is unwise to attach a great deal of significance to this variant.
The use of this graph in the spelling systems of Latin and PE allows us to conclude provisionally that it is likely to represent some sort of high front vowel in Cp., see (2.1.51).

(2.1.51)

PE [i:] 'machine, police' (Gimson, 1980: §7.09)
[ɪ] 'sit, filth' (ibid: §7.10)
Latin vivere minus (Allen, 1965: 48–50)

Again, an investigation of the various types of evidence available suggests that in fact several different phonetic segments within this general area are represented.

i appears in Cp. in forms for which

(a) The Germanic cognates have i (ON, OS, OHG), ei (Go.)
(Wright, 1954: 250);

(b) The PE reflexes have [ai] (Gimson, 1980: §7.23);

(c) i is the only spelling attested in the relevant forms in OE MSS (Campbell, 1959: §35).

(a) The cognate evidence allows us to reconstruct PG [i:], which we can assume passed unchanged into OE (Wright, 1954: §48).

(b) The PE reflexes show that the vowel has undergone diphthongisation, a phonetically natural development that affects long high monophthongs in several languages, including English in the historic period (Lass, 1976: Ch.2, in particular pp.75ff). This supports the suggestion that the segment represented should be
[i:] and its length is presumably confirmed by the position the forms concerned occupy in OE metrical structure.

(c) The uniform appearance of i in OE MSS supports the above conclusion.

Thus i is the segment represented in the forms in (2.1.52).

(2.1.52)

albi pedius : huitfoot 'having white feet' 122
(Go. hweits, OS hwit, OHG hwiz)

byssum : tuin 'twine' 343
(OFr. twin)

and the Latin loan win in

amtes : wiingardes 1 'vineyard' 151

appotheca (apotheca) : winfat 'wine vat' 191
(Lat. vin)

1 Note the double graph ii indicating vowel length (Campbell, 1959: §26).

Problems arise with the interpretation of the segment represented by the i in the forms in (2.1.53).

(2.1.53)

aporiamur : biað preade 'to be rebuked' 180

crus : scia 'the shin' 602

as conclusions reached on the evidence of diachronic developments, and that of the spellings that appear in other OE MSS contradict each other. At the level of morphological structure, the forms concerned comprise a root ending in [i:] followed by an inflection
which begins with [a]. Diachronic evidence would therefore suggest that the two vowels occur in 'hiatus' (Lass, 1969: 460) with an intervening morphological boundary. Compare the paradigms of the forms concerned (2.1.54):

(2.1.54)

Sing.  Nom. scia  Plural  Nom. scian
Acc. scian  Acc. scian
Gen. scian  Gen. sciana
Dat. scian  Dat. scian

(Campbell, 1959: §619.3)

Sing.  1st. beo  2nd. bist  3rd. bip
Plur.  biap

(ibid: §768d)

In equivalent forms in other OE MSS, ea spellings frequently appear (Campbell, 1959: §238), which suggests that the sequence either was (or had come to be regarded as) a diphthong, [i:a], which subsequently developed to [æ:o], conforming to existing templates for diphthongs in the language (see §2.1.9, §2.1.10 and references therein; Colman, 1983a; 1985). It is difficult to ascertain the exact stage in the diachronic development which is represented by the forms in Cp. If the vowels are still in hiatus, the segment [i:] is represented by the graph ı; if not, i must be considered as part of a digraph representing a diphthongal nucleus, with the realisation [i:a] or, as is more likely by the historic OE period (§2.1.9), [æ:o]. If we accept the latter solution, ia must be explained as an archaic spelling. Given the fact that spelling systems do not immediately reflect phonological developments, the
latter situation is in all probability the more likely, but the exact synchronic value of the sequence represented is ultimately irrecoverable.

2 In many cases in Cp. \( i \) appears in forms for which

(a) The Germanic cognates are spelt with \( e \) or \( i \)

(Wright, 1954: §61)

which suggests an underlying segment [i] in PG. As is the case with the other short front monophthongs (see §2.1.2; §2.1.3), there is considerable variation in the representation of the reflex of this segment in several environments, both within Cp. itself and in other OE MSS.

The discussion will therefore be subdivided accordingly.

2.1 Before \( n, m, ng \)

\( i \) appears in certain forms in Cp. for which

(b) The PE reflexes have [i] or [ai] (Gimson, 1980: §7.10; §7.23);

(c) The only spelling that appears in OE MSS is \( i \).

(b) The diphthongal reflexes in certain PE forms can be explained with reference to developments that occurred after the OE period.

In general, the non-diphthongal quality of the PE reflexes in the forms concerned supports the suggestion that the vowel is short.

(c) No spelling variants occur in OE MSS to contradict this proposed value. Thus \( i \) represents [i] in the forms in (2.1.55).
circinni : windeloccas 'curly hair' 473
(cf. windan 'to wind' Go. bi-windan OS windan,
OHG wintan)

ment(h)a : minte 'mint' 23
(Lat. mentha)

bariulus : reagufinc 'the name of some bird' 284
(PE finch, OHG finco)

2.2 Before l followed by a graph representing another consonant,
(except h, c, g, see (2.4))

Despite the fact that there is evidence to suggest that this is a
'back' environment in OE (see §2.1.1.2.2 and §2.1.2.2.2, 3.2), there
is no indication that attempts have been made to avoid the
sequence of 'front' vowel plus 'back' consonant by the
development of a glide between each segment as was the case with
the pre-OE sequence [aɪ] discussed in §2.1.1

No spelling variants that indicate that the segment may have had a
diphthongal realisation are attested (Campbell, 1959: §148). It must
therefore be supposed that [i] rather than, for example, [iu] is
represented in the forms in (2.1.56), and their PE reflexes support
this assumption.

agrestis : wilde 'wild' 104
(Go. wilpeis, OFr. wilde, OHG wilde)

cuna : cild cladcas 'child cloth, swaddling cloth' 623
(OHG kint, kind, Go. kilpei)
callos : ill 'hard skin' 400
(OFr. ill, ile, il)

2.3 Before a consonant followed by a back vowel graph

As noted in §2.1.1.2.3 and §2.1.2.2.2, this may be considered a 'back' environment in OE, and it is possible that a glide may have developed between [i] and the following consonant along the lines of that discussed with reference to the forms in (2.1.9), (2.1.24), (2.1.106), (2.1.112) and (2.1.118). In fact, io and eo spellings are attested in corresponding forms both in Cp. itself and other OE MSS, which would suggest the diphthongal realisation that would result from such a development. The diphthong in these forms would presumably have the realisation [iu] in Pre-OE (§2.1.10). In §2.2.1.2.3.3, however, it is established that there is no distinction between the segments represented by eo, io, eu, io and i in this particular environment. Thus the broad phonetic realisation of the segment concerned could in fact be either [eo] or [iu], i.e. a diphthong with a high or mid first element. Given that eo spellings are more frequent, and that the general trend of the development seems to be from [iu] to [eo] rather than vice versa, eo would seem to be the most likely value of the segment concerned (see §2.1.10.2.2 and references therein).

The appearance of i spellings can be explained by the fact that there is no phonemic contrast between the monophthong and diphthong in this environment, and the graphs i, io and eo have become equivalent. Thus i presumably represents [eo] in forms such as that in (2.1.57).
conquillum (conchillum) : wiloc scel 'whelk' 499
(cf. Cp. wiolocread, 496; OE weoloc)

2.4 Before graphs representing back consonants and consonant groups, i.e. (l or r) + ɡ, ɦ, ɣ

Where i appears for PG [i] in this environment, the alternative 'diphthongal' spellings io and eo are attested in Cp. and other OE MSS (Campbell, 1959: §228).

As noted in §2.2.1.2.2.8, as a result of a development parallel to that described in §2.1.2.2.5, 2.6 and 3.5, there is no phonemic contrast between [i] and [iu] in this context. While the reflex could either be monophthongal or diphthongal, the fact that monograph spellings are relatively frequent and that [i] is presumably the 'end result' of the proposed development suggests that [i] is the most likely realisation. Thus i presumably represents [i] in forms such as that in (2.1.58).

(2.1.58)

(h)ariolatus : frihtrung 'devination, soothsaying' 196
(OE ferht, ferhp, fyrhp, ferp 'soul, mind, life'; Go. fairhwus, OHG ferah)

2.5 Other environments

There is no reason to suppose that the segment represented is anything other than [i] in the forms in (2.1.59). The suggested value is supported by every source of evidence listed in (2.1.2).
balbus :  *wlisp* 'lisp'  271

*cartilago* :  *nasgristle* 'the gristle or cartilage of the nose'  350

3 In the form *risel*, see (2.1.60)

(2.1.60)

arvina :  *risel* 'fat'  219
(OLG  *rusli, hrusli*)

the Germanic cognates suggest an original [u] followed by a high front segment. As discussed in §2.1.7.2, this would develop to OE [y], which according to §2.2.1.2.2.6 (v) remained a segment distinct from [i] in Cp. and most other OE dialects. (see §2.1.7.2 and references therein). The conflict between the values suggested by the evidence of the diachronic development of the segment concerned and the spellings that appear is perhaps best resolved by regarding i as 'a spelling slip for ui' (Campbell, 1959: §315), which frequently represents the segment 'in early manuscripts' (ibid: §42). Compare:

foratorium :  *buiris* 'chisel'  II.
(OLG  *bursa*)
Furthermore, as this is the only instance where an ĭ spelling is attested for a reflex of PG [u] in the data under consideration, the claim that the form is in all probability an error is strongly supported.

4

į is also presumably the segment represented in the following derivational suffixes, albeit with a possible slight reduction in stress (§2.3.3.3.2):

-lice (Campbell, 1959: §664) see (2.1.61)

(2.1.61)

annua : gerlice 'yearly' 170
adrogansissime : wlonclice 'proudly' 85
(cf. OE gelic 'like'; Go. ga-leiks, OS gelik, ON glikr
OHG gelich)

-nisse (ibid : §592f), 1 see (2.1.62)

(2.1.62)

argutiae : gleaunisse 'glee, joyfulness' 203
(Go. -assus, OHG -nessi, -nissa, -nissi)
acies, et ordo militum : scearpnie 'sharpness' 50
et oculorum visus, et
acumen ferri

1 The W-S ē spelling is in this case the result of a dialectically divergent development (ibid: §384).
-inne (ibid: §597b), see (2.1.63)

(2.1.63)

bacidones : radinne 'a cluster of grapes' 260
amtes : oemsettinne 'a row of vines' 157

-ing (ibid: §574.6), see (2.1.64)

(2.1.64)

bitorius : erdling 'farmer' 302

5

i also appears in what are presumably unstressed syllables in
Cp. (see §2.3.2).

5.1

As noted in §2.1.2.6 and §2.1.3.5, i is attested as an alternative
spelling for e and even æ in some inflectional affixes. The
arguments for suggesting that [æ] is in fact the segment
represented and that the i spellings can be explained as resulting
from the fact that the spelling system is slow to reflect phonetic
developments have been discussed at length in the relevant
sections. It is therefore fairly certain that i represents [æ] in the
forms in (2.1.65).

anxius : sorgendi 'worried, anxious' 169
ar(r)ectas : hiysnendi 'listening' 221

3rd pers. sing. present tense (see 2.1.38)

compilat : stilitth to steel, temper' 589
crebat (cribrum) : siflip 'to seive' 596

nom. sing. ja-stem nouns (2.1.37)

aluvium (alveum) : meeli 'cup, bowl, basin' 123

nom. plural i-stem fem: Pre-OE [i] (ibid: §605)
alvearia : hyfi 'hive' 134

nom. sing. i-stem neuter: Pre-OE [i] (ibid: §607)
crebum (cribrum) : sibi 'seive' 597

In the forms in (2.1.66) ĭ appears for Pre-OE [æ] which has important implications for the phonemic status of the segments represented by ĭ, ĭ and ĥ in unstressed syllables (see §2.2.1.3.3.1).

(2.1.66)

strong masc. gen. sing.: (2.1.38)

bofor : lendislieg 'some sort of plant' 1 316

and possibly
dative singular 2 : (2.1.36)

amiculo : hregli 'garment, dress' 155
capistro : caffli 'bill, beak' 430

wo-stem feminine nom. pl.: Pre-OE [æ] : (Campbell, 1959: §565; 594)
c(a)erula : heawi 'blue, azure, discoloured' 444
None of the sources consulted (Bosworth and Toller, 1898; Lindsay, 1921; Holthausen, 1934) gave a definition of this form. If, however, we compare the fact that the second element lieg = 'flame, dart' (therefore, possibly 'tongue'), and that 'tongue' is used as a second element after a noun in the possessive case in many PE plant names, cf. *lamb's tongue* 'a species of plantain (O.E.D.), it does not seem unreasonable to suggest that the -is inflection represents the OE genitive case used in this function in the form concerned. Compare, also,

OE *lambes cerse* 'lamb's cress' and  
Cp. *wulfes camb* 'wild teazle' 355.

It is equally likely that the locative-instrumental (Pre-OE [ii]) is represented in these forms, (3.1.4) ft.1.

5.2

Once more, the fact that i spellings appear in the affixes representing the past participles of strong verbs and weak verbs of class I (2.1.67) suggests that the morphological and phonological status of the morpheme in question is uncertain 48.

(2.1.67)

confutat : *oberstedid* 'to convict' 588  
balatus : *bletid* 'to bleat' 283  
ablata : *binumine* 'to deprive' 37

In the case of the derivational suffix represented by it (originally PG [atj], Campbell, 1959: §592) in the forms in (2.1.68)

(2.1.68)

*crabro* : *hurnitu* 'hornet' 603  
tantalus : *albitu* 'swan' 30
other evidence (§2.1.26.5) suggests that a degree of stress reduction must have taken place. It is best to conclude that like ge- (§2.1.2.6.2) the derivational status (and hence degree of stress carried) of the affix concerned is uncertain, and indeed it does not appear to be readily associated with a derivational function, see (2.2.29) ft.1.

5.3 ï presumably represents [a] from Pre-OE [i] (Lat. [i]) in the forms in (2.1.69).

(2.1.69)

\[
\begin{align*}
cinnamonum : & \quad cymin 'the herb cumin' \quad 475 \\
& \quad (OE cymen, Lat. cuminum) \\
caccabum : & \quad cetil 'kettle' \quad 346 \\
& \quad (OE cetel, OS ketil, OFr. ketel, szetel, tsetel, OHG kezil, \\
& \quad Go. katila, Lat. catillus)
\end{align*}
\]

The possibility that the liquid or nasal may be syllabic must be acknowledged (§2.1.2.6.5).

5.4 In the forms in (2.1.70) ï presumably represents a 'linking vowel' with the value [a].

(2.1.70)

\[
\begin{align*}
commis(s)ura : & \quad flycticlaë 'a joining, coming together' \quad 491 \\
caepa : & \quad ynnilæc 'onion' \quad 448
\end{align*}
\]

6 Finally, the graph ï represents the segment [j] in the form
calciculium : ieces surea  cuckoo sorrel, 380
(cf. OHG gouch, ON gaukr, Cp. gece sure 58, PE gowk).

The reasons for assuming that the initial consonant in this form is palatal rather than velar will be discussed in §2.1.15.1.2. The use of i, a graph normally reserved for the representation of vocalic segments, to represent a consonant can be explained with reference to the development of the OE orthographic system.

§2.1.15.1.2 reveals that the palatal approximant [j] develops as the initial consonant in this form in OE. This segment had a very limited distribution in PG (see §2.1.15.1.2 and references therein), and is not found in Latin. The OE scribes were therefore faced with the problem of how to represent this relatively unfamiliar sound. As discussed in §2.2.2.1, the segments [y] and [j] very rarely appear in contrast, so in many cases g can be used to represent the palatal sound with no risk of ambiguity. This explains the more regular g spellings for the segment concerned in most OE MSS. However, sporadic attempts are made to represent the palatal by a distinct graph. As the graph i normally appears for a segment the value of which is very close to that of the approximant in its phonetic realisation, it would seem likely that i should represent [j] in the forms concerned (see further §5.1.1).

2.1.5 o

The graph o is used in the spelling system of Latin and PE to represent a low to mid back rounded vowel, see (2.1.71).
Again, a consideration of evidence from other sources (2.1.2) suggests that in Cp. the graph represents a number of different phonetic segments within this general area:

1) o appears in forms in Cp. for which:
   (a) The Germanic cognates are spelt with o (Go., ON, OS),
       uo (OHG), (Wright, 1954: 25);
   (b) The PE reflexes have [u:] (Gimson, 1980: §7.18);
   (c) There is no significant variation in spelling of the segment concerned in OE MSS (Campbell, 1959: §33) except, of course, the occasional oo (ibid: §26).

(a) The cognate evidence suggests that PG [o:] can be reconstructed, which presumably developed into OE as [o:] (Wright, 1954, §79).

(b) The PE reflexes support this suggestion: the monophthong has apparently undergone the usual raising process by virtue of its length (see §2.1.1.1 and references therein).

(c) The spelling of equivalent forms in Cp. and other OE MSS does not conflict with this analysis as o is the invariable representation of the vowel.
Thus o and oo represent [ɔː] in the forms in (2.1.72).

(2.1.72)

caliga : scoh 'shoe' 395
(OHG scouh, OS skoh)

albi pedius : huitfoot 'having white feet' 122

1.2 o also appears in forms in Cp. where:

(a) The Germanic cognates are spelt with a, e.

This suggests an original PG [æː] (§2.1.2.1.1) which is always followed by a nasal segment in the proto-form. That PG [æː] or W–G [aː] should become some sort of nasalised or rounded vowel in this environment and was eventually identified with the reflex of PG [ɔː] is a phonetically plausible development. In view of the fact that such a process would be parallel to that which affected the corresponding segments in the short vowel system (Campbell, 1959: §129), it is clear that this situation is extremely likely on typological grounds. (§1.3.6.2.1.1).

Thus o represents [ɔː] in forms such as that in (2.1.73).

(2.1.73)

(h)auserunt : nomun 'to take' 247
1.3 o appears in forms in Cp. for which:

(a) The Germanic cognates are spelt with ā;
(b) The PE reflexes have [u:] (Gimson, 1980: §7.18);
(c) The spelling of the vowel in corresponding forms in other OE MSS is o.

(a) The cognates suggest the vowel in PG was [a], followed by a nasal segment. When the nasal was lost, the vowel presumably underwent 'compensatory lengthening' and retained (or acquired) some sort of nasalised rounded quality, eventually developing to a segment identical to the reflex of PG [ɔ:] (Campbell, 1959: §119; §121).

Thus [ɔ:] is the likely value of the vowel represented by o and oo in the forms in (2.1.74).

(2.1.74)

anser : goos 'goose' 170
(Go. gana)
aspera : unsmopi 'not smooth, rough' 170
(OS mathmundi, OHG mamunti < * manpi, Holthausen, 1934)

2 o also appears in forms in Cp. for which

(a) The Germanic cognates are spelt with u, au (Go.), o (OS, OHG, ON) (Wright, 1954: 25 and §73);
(b) The PE reflexes have [ɔ] (Gimson, 1980: §7.15);
(c) o is the only spelling that appears in OE MSS (Campbell, 1959: §33).
(a) The cognate evidence suggests that PG [o] or [u] can be reconstructed as the origin of the stressed vowel in the forms concerned which presumably develops into OE as [o].

(b) The PE reflexes of the vowel (when not affected by length adjustment rules in the late OE or ME period, see ft. 11) support the suggestion that [o] is the segment represented in Cp. The fact that the vowel has not been raised supports the claim that the vowel should be short.

(c) As there is no variation in the representation of this vowel in the extant OE material, the proposed value is not challenged by this source of evidence.

Thus o represents [o] in the forms in (2.1.75).

(2.1.75)

cereacus : hornblauuere 'horn blower' 454
(Go. haurnja, OHG horn)

accidia : sorg 'anxiety, care' 67
(Go. sarga, ON sorg, OHG sorge PE 'sorrow')

actionari(i)s : folcgeræbun 'folk governor' 48
(OS folc, folk, OHG folc)

and the Latin loan

balneum : stofa 'a room for a warm bath' 281
(OHG stuba, Italian stofa (Campbell, 1959: §490))

The origin of the segment represented by o in
cucumis : *poppey* 'poppy', 611

(Lat. *papaver*)

is apparently, 'unexplained' (Campbell, 1959: §519, ft.4).

3  o appears in forms in Cp. for which

(a) The PG cognates are spelt with a

(b) The PE reflexes contain the segment [æ] (Gimson, 1980: §7.12);

(c) Alternative spellings of equivalent forms in Cp. and other
OE MSS are o (Campbell, 1959: §130).

In this case we are clearly dealing with the same segment as
discussed in §2.1.1.2.6. On the basis of the arguments contained in
that section, we can assume that o represents [ɔ] in the forms in
(2.1.76).

(2.1.76)

briensis : *honduyrm* 'handworm' 320
(Go. handuus, OHG *hant*, OS *hand*)

balbutus : *stom wlisp* 'stammer' 277
(Go. stamms, OHG *stam*)

alga(e) : * sondhylas* 'sandhill' 125
(OHG *sant*, OS *sand*)

4  o in unstressed syllables

4.1  o appears in the following inflectional suffixes which are
unambiguously unstressed in Cp. ($2.3.2.1.2)$.

(a) The present account accepts the reconstructed PG values of these affixes and their development into Pre–OE as described by Campbell (1959: Chs. VII, XI, XII and XVII) and Prokosch (1939: part 3). Generally Pre–OE [u] or [o] can be posited as the origin of the segment concerned and [u] apparently develops to [o] in the vast majority of cases (Campbell, 1959: §373).

(b) The evidence of the PE reflexes is of little help in recovering the broad phonetic value of the segment in question, as, of course, most OE inflectional affixes are lost in the historic English period.

(c) Often the same affixes appear spelt with u in Cp. and other OE MSS ($2.1.6.4.1$). This can be explained (see $2.2.1.3.3.2$) as being a result of the fact that there is no longer a phonemic contrast between the segments [o] and [u] in OE unstressed syllables, and the graphs o and u have therefore become equivalent. Given the direction of the phonological development described in (a) above, it would appear that [o] is the most likely realisation of the segment concerned in the vast majority of cases, and the u spellings are best explained as being archaic.

Thus o presumably represents [o] in the forms in (2.1.77).

(2.1.77)

nom. sing. of 5 stem nouns: Pre–OE [u] (Campbell, 1959: §586)

beneficium : freomo 'kind deed' 286
nom. sing. of w∅ stem nouns: Pre-OE [u] (ibid: $595)

adventio: sarwo 'device, contrivance' 86
(h)arpago: clauuo 'claw, hook' 211

nom. masc. sing. of wa/w∅ stem adjectives: Pre-OE [u] (ibid: $649)

crucus (crocus): geio 'yellow' 598

neut. plural of ja-stem nouns: Pre-OE [u] (ibid: §§574; 576)

aplustra(-e): geroeso 'rudder, helm' 178

the same ending also appears on the pres. pple. of ja/j∅ stem adjectives: (Campbell, 1959: $644)

coituras: gegeandendo 'to go, happen' 500

past plural of all verbs: Pre-OE [u] (ibid: $736.d)

auspiciantur: hælasdon 'to foretell' 251
compactis: geadradon 'to gather, join' 512

1st sing. pres. tense: Pre-OE [u] (ibid: $731)

consulo: frigno 'to ask, inquire' 514

4.2

When o appears in the past participle affix of weak verbs of class II, Pre-OE [u] (Campbell, 1959: $756), it is significant that alternative spellings in u are not attested. Instead, the variant a occurs in Cp. and other OE MSS (§2.1.1.4.1) 51 Although the vowel seems to have undergone developments that are generally supposed to affect vowels in unstressed syllables in its transition from PG to OE, once more the fact that the affix concerned represents derivational as well as inflectional material suggests that some degree of stress might be assigned to the vowel. The status of the affix is clearly indeterminate and the problems that arise illustrate the shortcomings of an account which over-rigidly divides the stress continuum ($2.3.2.3).

Thus the segment represented by o in the penultimate syllable
accetum(i) : gefeotodne 'to fetch', 63

like that represented by a in megalade (2.1.15) may be supposed to carry a slight degree of stress. It is impossible to determine whether the rounded or unrounded vowel is represented. Presumably the contrast between [o] and [a] has been neutralised in this environment and the graphs o and a have therefore become equivalent (§2.2.1.3.2.2).

Furthermore, the alternation in the spellings of the suffix -uc/oc suggests that despite the claim made in (3.2.69) ft. 1 the vowel in this particular derivational affix is unstressed (Campbell, 1959: §373; §331.5). As with ge- discussed in §2.1.2.6.2, this may be due to the fact that it is difficult to associate the suffix with any specific synchronic derivational function in OE and the derivational status of the affix is therefore uncertain. The 'suffix' is probably best regarded as part of a disyllabic root in the Cp. dialect, and despite the fact that the vowel concerned originally appeared in a 'derivational' affix, it can be claimed that o represents [o] from unstressed Pre-OE [u] in the second syllable of the form in (2.1.78).

(2.1.78)

conquilium (conchilium) : wilocase 'whelk' 499

A similar situation is attested with the affix -or/-ur. (3.2.28) ft. 2 suggests that -or/-ur can be isolated as a derivational affix in the
Cp. dialect, albeit with not quite so much agentive force as -ere. Given that the spelling alternation between -ur/-or and the fact that Campbell (1959: §574.3; §588.4) suggests that the graph in some cases represents a 'parasite vowel', it can be claimed that the status of the derivational affix is dubious, and that o in all probability represents unstressed [o] in the forms in (2.1.79), despite the morpheme's apparent 'derivational' status.

(2.1.79)

<table>
<thead>
<tr>
<th>balus : isernfeotor 'iron fetter' 272</th>
</tr>
</thead>
<tbody>
<tr>
<td>(OHG fezzera, ON fjotor)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>alumna : fosterbearn 'fosterchild' 131</th>
</tr>
</thead>
<tbody>
<tr>
<td>(OS foster)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>bilance : twiheolore 'balance' 304</th>
</tr>
</thead>
<tbody>
<tr>
<td>(OE holrian 'to balance')</td>
</tr>
</tbody>
</table>

1 In this case the vowel must, in fact, be parasitic, but as it occurs in the penultimate syllable of the form it presumably carries a slight degree of stress.

In the second syllable of the disyllabic root

<table>
<thead>
<tr>
<th>aper : ebor 'wild boar', 179</th>
</tr>
</thead>
<tbody>
<tr>
<td>(OHG ebur)</td>
</tr>
</tbody>
</table>

the vowel represented by o has developed from PG [u]. Campbell (1959: §331.2, ft.2) suggests that [o] is in all probability the segment represented.

4.3 o also appears as a 'linking vowel' in the compounds listed in (2.1.80).
1 This form may well have ceased to be regarded as a compound in synchronic OE (§3.2.7.3.2).

As it cannot be seen to be derived from any particular historical source, it is difficult to determine the exact quality of the vowel in question. However, this can be assumed to be [o] with a reasonable amount of certainty, although [æ] is another possibility (see §2.1.2.5.3, §2.1.3.5).

4.4 In the 'obscured compounds' (§3.2.7.3.2) in (2.1.81)

the cognates suggest that an original PG [ai] was the vowel in the second element. The normal development of this segment is, of course, to [æ:] in OE §2.1.1.1). Spellings of the second elements of the forms concerned apparently show an alternation between æ and o (Campbell, 1959: §336), which suggests [o] as a possible broad
phonetic value (§2.1.1.2.6 and ft.18). Clearly the stress has been lost to some extent (the vowel has presumably been shortened: ibid §356). The fact that the graphs a and o alternate in the representation of these forms in OE however suggests that the segment concerned is not completely unstressed in Cp. (see §2.1.1.4). As the reduction of stress in the second elements of obscured compounds is presumably a gradual process, this may well be the case. A similar situation exists in the case of compounds of which the first element is in a sense 'obscured', i.e. the 'compound verbs' discussed in (3.2.74).

o presumably represents [ɔ], a segment which carries some degree of stress, in the forms in (2.1.82), (see again §2.1.1.4.3).

(2.1.82)

atlarat (adfl.) : onsueop 'to swoop, sweep against' 235
cessere : onwicum 'to yield, give way' 437
cf. and 'against, in return'

2.1.6 u

On the basis of its use in the spelling system of Latin and most PD languages it can be suggested that the graph u in Cp. represents a high back rounded vowel, although due to subsequent developments in the historical English period the graph does not usually represent a vowel with this value in standard PE. The mid high vowel [u] is the nearest equivalent, see (2.1.83).
Again, an investigation of evidence from the various sources listed in (2.1.2) suggests that the graph represents a range of segments with values within this general phonetic area.

1 \(\text{u}\) appears in forms in Cp. for which

(a) The Germanic cognates are spelt with \(o\) (Go., ON, OS), \(uo\) (OHG);

(b) The PE reflexes have \(\text{[au]}\) (Gimson, 1980: §7.26);

(c) \(\text{u}\), and occasionally \(\text{uu}\) (Campbell, 1959: §207), are the only spellings that appear for the forms concerned in OE MSS (ibid: §34).

(a) The evidence of the cognates suggests PG \(\text{[u:]}\) can be reconstructed, from which OE \(\text{[u:]}\) is a phonetically plausible development.

(b) The fact that long high monophthongs tend to diphthongise, especially in the historic English period has been noted in §2.1.4. The existence of PE reflexes in \(\text{[au]}\) therefore confirms that \(\text{[u:]}\) is the most likely value that can be assigned to the segment in Cp., as it provides a suitable input to the diphthongisation process.
(c) As there is no variation in the spellings that appear for the forms concerned in Cp. or any other OE MS, there is no reason to dispute the suggestion that u represents [u:] in the forms in (2.1.84).

(2.1.84)

cavanni: uile 'owl' 377  
(OHG uwila, ula)

broel: deortuun 1 'deer park, enclosure' 324  
(OHG sunt, OFr. tun, PE 'town')

clustella: clustorloc 'a prison lock' 481  
(OHG klostar OS klustar, Lat. claustrum 2)

1 Note the double vowel graph as a sporadic indication of length

1.2 In other cases, u appears in forms in Cp. for which

(a) The Germanic cognates are spelt with u;

(b) The PE reflexes contain the segment [au];

(c) u is the only spelling that appears in Cp. or other OE MSS.

(a) The evidence of the cognates suggests that PG [u] can be reconstructed, which is always followed by a nasal consonant in the relevant proto-forms. Presumably, therefore, the nasal has been lost and the vowel lengthened to [u:] in compensation as the form entered Pre-OE (Campbell, 1959: §121). This suggestion is supported by the evidence of the PE reflexes and the fact that no alternative spellings occur in Cp. or any other OE MSS.

Thus u represents [u:] in the forms in (2.1.85).
(2.1.85)

\[ ab \text{ euro } : \text{ easteran sudan } '\text{south easterly}' 40 \]
\[ a \text{ fafonio } : \text{ supan westan } '\text{south westerly}' 101 \]
\((\text{Icel. sunn, OHG sund})\)

\[ 2 \text{ u also appears in sets of forms in Cp. for which} \]
\[(a) \text{ The Germanic cognates have } u \text{ spellings;} \]
\[(b) \text{ The PE reflexes are } [\text{A}] \text{ or } [u] \text{ (Gimson, 1980: §7.17; §7.13);} \]
\[(c) \text{ u invariably appears in Cp. and other OE MSS (Campbell, 1959: §34).} \]

\[(a) \text{ The Germanic cognates suggest an original PG } [u], \text{ which} \]
\[ 53 \text{ developed into } [u] \text{ in OE.} \]

\[(b) \text{ Where the vowel in the PE reflexes of the forms concerned has not been subjected to various length adjustment or raising processes, the segment that appears is } [\text{A}]. \text{ As the vowel concerned did not undergo the unrounding process until the 17th century (Gimson, 1980: §7.13), it is safe to assume that } [u] \text{ was its synchronic value in the dialect represented by Cp. The fact that the vowel has not been raised supports the claim that it is short, as, presumably, does the behaviour of the relevant forms in OE metrical structure.} \]

\[ u \text{ therefore represents } [u] \text{ in the forms in (2.1.86).} \]

(2.1.86)

\[ agitatio : \text{ unstilnis} 1 '\text{calm, absence of motion}' 106 \]
\((\text{OFr., OS, OHG, Go. un, ON } u, o)\)
amites : fugultreo 'a pole for spreading bird nets' 106
(OS fugol, OHG fogol, fugal, Go. fugile PE 'fowl')
camellea (chamæleon) : wulfeacam 'wild teazle' 355
(Go. wolfs, OS wulf, OHG wolf, OE wulf PE 'wolf')
abelena : haselhnutu 'hazel nut' 33
(OHG hnuз, ON hnut)
conc(h)a : musclan scel 'mussel' 593
(OHG muscula, Lat. musculus)
[u] is also presumably represented in the derivational affix -ung
(Campbell, 1959: §590.8) in
aucupatione : setunge 1 'ambush' 294
confusione : gemengiunge 1 'mixture' 522
(h)ariolatus : frihtrung 1 'devination' 196
circinatio : oefsung 1 'shearing, rounding' 474

1 For a discussion of the way stress assignment operates in these forms see §2.3.2.3.

3 u appears in certain forms in Cp. for which
   (a) The Germanic cognates have i spellings;
   (b) The PE reflexes have [u] (Gimson, 1980: §7.17);
   (c) Alternative spellings in Cp. and other OE MSS are i, io, eo
(Campbell, 1959: §218).

(a) The cognate evidence suggests an original Germanic [i], but the PE reflexes would predict some sort of back rounded vowel in OE.
As noted in §§ 2.1.1.2.3; 2.1.2.2.2 and 2.1.4.2.3, the environment of a consonant followed by a back vowel is to be considered a 'back' environment in OE, and causes the realisation of the Pre-OE front vowels [e], [i] and [a] to be modified in order to avoid a sequence of front vowel followed by back consonant. Usually the spelling indicates that a glide has developed between the front vowel and the back consonant. In this case however, it would appear that
the second option, that of 'retraction to whichever back vowel of the language is nearest in height' (Campbell, 1959: §139), has been chosen. That such a divergent development has taken place explains the spelling variation that can be attested in the OE data, and [u] is therefore the segment likely to be represented by υ in the form

_cardiolus : uudusnite 'the name of some bird', 428_

(OHG _witu_, Icel. _viðr_, PE _wood_, compare Cp. _uuidubinde_, 18)

In contrast to the development affecting the reflexes of PG [a], the nature of the development chosen in this case does not seem to be determined by the particular OE dialect in question (Campbell, 1959: §218). Presumably, the PE reflex has developed from the form where 'combinative back umlaut' has operated.

4 The graph _υ_ also appears in syllables that are presumably (on the basis of the evidence discussed in §2.3.2) unstressed in the Cp. dialect.

4.1

Many of these represent inflectional affixes, and once more this account assumes that these have developed from PG as outlined by Campbell (1959: Chs. VII, XI, XII, XVI) and Prokosch (1939: Part 3).

(a) an original PG [u] which lowers to [o] in the majority of cases, especially before consonants, would seem to be the segment represented (see §2.1.5.4.1 and references therein).
(b) The fact that very few of the OE inflectional affixes survive in PE has been noted above.

(c) The vowel in most of the affixes concerned is also represented with an o. It can generally be assumed (§2.2.1.3.3.2) that [o] is the value of the segment represented, the u spellings simply reflect the language at an earlier stage in its development.

Thus u represents [o] in the inflectional affixes of the forms in (2.1.87).

(2.1.87)

nom. sing. o stem nouns: Pre-OE [u], see (2.1.77)

aparatu : axfaru 'a flight of arrows' 186

the same ending is possibly used in the nom. sing. of the athematic noun

abelena : haselhnatu 'hazel nut' 33

although the u-stem inflection (PG [uz]) is another potential source (Campbell, 1959: §612; §625)

This ending has also apparently been introduced to the jœ-stem nouns (ibid: §592e)

crabro : hurnutu 'hornet' 603

tantalus : albitu 'swan' 30

strong neuter plural: Pre-OE [u] (2.1.77)

bibulta : billeru 'a plant name' 305

auriola : stigu 'hall, enclosure' 242

wa-stem nom. sing.: Pre-OE [u] (2.1.77)

bapis (baptes) : treu terus 'tar, tree-gum, resin' 279

cummig : teoru 'gum, resin' 616

1st sing. pres. tense: Pre-OE [u] (2.1.77)

convenio : ic groetu 'to greet' 525
Past plural of all verbs: Pre-OE [u] (2.1.77)

adgreiuntur: geeodun 'to go together' 78
(h)auserunt: nomun 'to take' 247

4.2 In the affix expressing the dative plural, however (Pre-OE [u], Campbell, 1959: §317), as in the forms in (2.1.88)

(2.1.88)

caverniculis: holum 'hole' 416
adnitentibus: tilgendum 'striving after' 80

no alternative spellings with o are attested. It is therefore reasonable to suggest that [u] is in this case the segment represented.

4.3 In the forms in (2.1.89)

(2.1.89)

cardiolus: uudusnite 'some sort of bird' 422
lignarium: uuidubinde 'wood pile, bundle' 18
bombosa: hlægulendi 'deep sounding' 317

the graph u presumably represents a 'linking vowel', and while either [o] or [u] is a possible realisation, in view of developments described in §2.1.5.4 [o] is perhaps more likely.
4.4

That the vowels in the affixes -ur/-uc may well be unstressed despite the fact that they can be considered to represent derivational material has been discussed in §2.1.5.4.2. It seems likely, therefore, that u represents [o] in the final syllable of the forms in (2.1.90).

(2.1.90)

clatrum (clathri) : pearuc 'an enclosure' 486
alietum (halizatos) : sparhabuc 'sparrow hawk' 118
bettonica (betonica) : aturlaöe 'cockspur grass' 293
alitudo : fothur 'fodder' 138

and possibly also in that of

blattis : bitulum 'beetle', 307

(cf. bitan 'to bite')

where again the status of the derivational affix is uncertain (3.2.19). This vowel will, of course, be marginally more stressed as it occurs in the penultimate rather than final syllable. In

colicus (colchicum) : eoburthrote 'the carline thistle', 558

the u represents [o] from PG [u] (see §2.1.5.4.2).
In the forms in (2.1.91), u either represents a 'parasite vowel' (the phonetic value of which is therefore purely arbitrary, [ə] is perhaps the most likely candidate (Campbell, 1959: §363)) or it may be a purely graphic indication of the existence of a syllabic consonant (see §2.1.2.6.5 and references therein).

(2.1.91)

amites : fugultreo 'a pole for spreading bird nets' 50
(Go. fuglēs, OS fugol, OHG fogel, fugal, PE 'fowl')
circinno (circinus) : gabulrond 'a pair of compasses' 469
(Lat. gabium, Italian gabella, Span. gabel, French gabelle)

4.6 In the obscured compound

a(c)erabulus : mapuldur 'maple tree', 51,
(cf. 5orn 'thorn')
it is difficult to determine the degree of stress that is to be assigned to the vowel represented by u. Given the fact that original o has been replaced by u 55, and the existence of alternative spellings in e (OE apulder 'apple tree'), it is likely that the degree of stress assigned to the syllable has been greatly reduced, and unstressed [ə] or even [ɛ] is the most likely realisation of the vowel.

5 The graph u and its double uu also appear in forms in Cp. for which

(a) The Germanic cognates contain w (OS, OHG, Go.) 56, or
v (ON) (Wright, 1954: §149);

(b) The PE reflexes have [w], or in some cases a diphthong has developed (Gimson, 1980: §§8.29; 7.2.6; 7.25);

(c) Alternative spellings in Cp. and other OE MSS include p. (Campbell, 1959: §60). This runic symbol is always replaced by w in modern editions (ibid: §50 ft.1).

The evidence of the cognate forms and the PE reflexes suggests that the segment is a labio-velar approximant [w]. There can therefore be no hesitation in suggesting that this should be the value of the segment represented in the forms concerned in Cp.

As the graph y does not generally have this function in the PE orthographic system, and although it was originally used to represent a semi-vowel in Classical Latin, it is likely that the segment had developed to a fricative by the time we should expect Latin spelling practices to influence those of OE (Allen, 1965: §41-42) it is necessary to find an explanation for the appearance of a graph normally reserved to represent vowels in forms where it is clearly representing a consonantal segment. Such an explanation is to be found in a consideration of the history of OE scribal practice.

As it is traditionally assumed that the [w] of Classical Latin had become [v] in Vulgar Latin (Campbell, 1959: §539), at the time the roman alphabet was being adapted to represent the Old English language there was no segment in Latin that corresponded to the reflex of PG [w]. The scribes were thus faced with the problem of how to represent the semivowel. The segments [u] and [w] are very similar in terms of their articulation, the main difference between them being that they appear in different positions in
syllable structure: [w] at syllable margins, [u] in the syllable nucleus (compare §2.14.6). The choice of the graph ū to represent [w] is therefore a natural one. There is no danger of confusion as to the nature of the segment represented as this can be automatically deduced from its position in the syllable. Eventually the OE scribes adopted another means of representing the segment, in the rune ṣ (Campbell, 1959: §60). The spelling variation between ū, uu and ṣ can therefore be explained as being the result of scribal experimentation with different ways of representing a segment for which there was no readily available graph in the roman alphabet.

It is generally agreed that the distribution of ū, uu and ṣ is arbitrary and a matter for palaeographic rather than phonological study. A consideration of the symbols as they appear in the Cp. MS however, does reveal certain tendencies in their distribution, and while this is in all probability of purely palaeographic significance, it is tempting to suggest that some indication as to the phonetic value of the segments concerned is also conveyed.

In morpheme initial position uu and w seem to be the more popular choices, see (2.1.92),

(2.1.92)

ars plumaría : uuyndecreft 'the art of weaving' 217 (Go. bi–windan, OS windan, OHG wintan)

balbus : uulisp 'lisp' 271

appotheca (appotheca) : winfaet 'wine vat' 191 (Lat. vinum)
the few exceptions to this being in the onsets of syllables representing the second elements of 'obscured compounds' \(§3.2.7.3.2\), see (2.1.93).

(2.1.93)

\[
\text{crepidinem: neopouard} \quad \text{`downwards'} \quad 5 \quad (§3.2.7.3.1)
\]

\[
\text{bradigabo: felduop} \quad \text{`peewit'} \quad 323
\]

Bosworth and Toller (1898) cite the form feld swop:feld = PE 'field'. The second element swop is presumably related to swapan 'to swoop'.

In morpheme-initial clusters after a consonant \(u\) is the prevailing spelling, see (2.1.94)

(2.1.94)

\[
\text{gemellus: getuin} \quad \text{`twin'} \quad 13
\]

\(\text{(OHG zwinal, ge-zuinele)}\)

\[
\text{chaus (-os): duolma} \quad \text{`chaos, destruction'} \quad 457
\]

\[
\text{albi pedius: huitfoot} \quad \text{`having white feet'} \quad 122
\]

\(\text{(Go. hweitz, OHG hwiz, OFr. hwit)}\)

the form \[\text{alacer: swift} \quad \text{`swift'}, \quad 128\]

being the only exception in the section of data under consideration.

Between voiced segments \(uu\) or \(w\) is the normal choice of symbol (2.1.95)
carula (garrula) : craudue 'crow' 401
(OS kraia, OHG kraa)

corbus (-is) : cauuel 'basket' 513

commentis : seorwum 'device, contrivance' 545
(OHG saro, gesarwi, Go. sarwa)

va(e) : euwa 'ewe' 31
(OHG awi, owi, au, Go. awepi, awistr)

and in morpheme final position we invariably find u 59, see (2.1.96).

(2.1.96)

calvariz locus : cualmstou 'place of execution' 2
(OFr. sto)

argutiz : gleasunias 'prudence, skill' 203
(OS glau, Go. glaggwus, OHG glaw)

Given the phonetic developments that may naturally be assumed to affect the segment [w] in these various environments, it is possible to claim that the graph which is regularly used to represent the vocalic segment [u], i.e. u, appears in positions where [w] may be supposed to have been more vocalic (i.e. less 'constricted' in articulation) in its realisation. This variant will be represented in the present account by the symbol [u].

As the second element in an initial cluster (2.1.94) [w] is closer to the nucleus and farther from the syllable
margin than would be the case, for example, in an onset consisting of [w] alone. As noted in §2.2.2.5.3.1 the further a segment lies from the syllable boundary, the more vowel-like it becomes in its articulation. It is therefore possible that u in this environment should represent an approximant which is articulated with less constriction of the vocal tract than initial [w]. Given that post-vocalic [w] (2.1.96) subsequently becomes part of the nucleus (see ft.59), it is very likely that the segment would have a more open articulation in this position. Finally, that morpheme boundaries weaken as a compound becomes 'obscured' may account for the appearance of u in morpheme initial position in the forms in (2.1.93). It is, presumably, no longer synchronically obvious that the segment appears in morpheme initial position.

While such suggestions are somewhat tentative, they may be cited as an explanation of the rather striking patterns that can be observed in the distribution of the graphs concerned. §2.2.2.5.2.5. reveals that there is no evidence in support of a phonemic contrast between the segments [u] and [w], thus the occasional inconsistency in the distribution of the graphs u, uu, and presents no problem for the proposed analysis.

2.1.7 ɣ

The graph ɣ is occasionally used to represent a vocalic segment in PE (Gimson, 1980: §§7.10; 7.23), but more usually it appears for the consonantal segment [j] (ibid: §8.28). It is rarely used in Latin; basically it appears only in Greek loans (Allen, 1965: 52–3; Campbell, 1959: §67), and it is safe to assume that the segment concerned did not occur in Classical Latin. It is therefore not as easy to arrive at a provisional notion of the nature of the
segments represented, as is the case with the graphs a, e, i, o, u discussed above. As with æ, an investigation of the letter shape can be of some assistance in this matter.

The graph is apparently composed of the symbols u and i, and it can therefore be assumed that a sound intermediate in value between [u:] and [i:] is represented: a high front rounded vowel [y] being the most likely candidate (Haugen, 1950: 14)\(^6^0\). The fact that a variant spelling for this sound is the sequence ui supports this supposition (Campbell, 1959: §42)\(^6^1\). Compare

foratorium : buiris, 'chisel', 11,

(OHG bursa).

A consideration of the available types of evidence reveals that the graph in fact represents several different phonetic segments within this general area.

1 y appears in forms in Cp. for which:

(a) The cognate forms in Germanic languages are spelt with u, uo (Wright, 1954: 25);
(b) The PE reflexes have [ai] (Gimson, 1980: §7.23);
(c) In other OE MSS i spellings are attested (Campbell, 1959: §316-7).

(a) The cognates of the forms concerned suggest PG [u:] followed by [i] in the unstressed syllable. Given the usual tendency for such a segment to influence the stressed vowel that precedes it, we can predict that [u:] will front to [y:] and subsequently (front rounded vowels being 'marked' segment types (see §2.1.2.1.3.5 and
references therein)) unround and merge with the reflexes of PG [i:].

(b) The PE reflexes support the assumption that this development has occurred. The reasons why these should suggest an earlier [i:] are given in §2.1.4.1. In Cp. therefore, it would appear that either the segment [i:] or [y:] is represented.

(c) Despite alternative ĕ spellings in forms in other OE MSS, the fact that y is the universal spelling for this segment in Cp. suggests that [y:] is the most likely value of the segment represented. This is confirmed by a consideration of its phonemic status (§2.2.1.1.2.5 (iv)).

Thus y represents [y:] in the forms in (2.1.97).

(2.1.97)

cucum : fyrcrue 'fire pot' 621

(OFr., OS fiur, OHG fiur, ON fur)

butio : cyta 'kite' 333

(MHG kuse)

2 y also appears in forms in Cp. for which

(a) The Germanic cognates have u, au, y (Wright, 1954: 25);

(b) The PE reflexes have [i] (Gimson, 1980: §7.10);

(c) ĕ appears as an alternative spelling in other OE MSS (Campbell, 1959: §199; §316-7).

An identical situation to that discussed in 1 above operates when y represents a short nucleus.
(a) The cognate evidence suggests an original short back rounded vowel, which fronts, under the influence of a high front segment, to [y] and subsequently unrounds to [i].

(b) Again, the PE reflexes suggest that an unrounding process has taken place, and (see §2.1.4.2) confirm that a short nucleus type is represented.

(c) Again, the lack of i spellings in the Cp. MS suggests that [y] is the most likely synchronic value of the segment in Cp., and this is confirmed on examination of the phonemic status of [i] and [y] in §2.2.1.2.2.6(v).

Thus y represents [y] in the forms in (2.1.98).

(2.1.98)

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Source 1</th>
<th>Source 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>bra(c)hiale</td>
<td>gyrdels 'girdle'</td>
<td>ON gurpill</td>
<td>OHG gurtill</td>
</tr>
<tr>
<td>malina</td>
<td>fylled flood 'full tide'</td>
<td>OS ful, OHG foll, fol, full, Go. fulls</td>
<td></td>
</tr>
<tr>
<td>ascalonium</td>
<td>ynnelæc 'onion'</td>
<td>Lat. unio</td>
<td></td>
</tr>
<tr>
<td>doles (-um)</td>
<td>byden 'bushel'</td>
<td>Lat. butina, OHG butin</td>
<td></td>
</tr>
</tbody>
</table>

Thus, mainly from an examination of the historical development of the forms in which it appears, the graph y can be seen to represent a high front rounded vowel despite the fact that it is not used with this value in the spelling system of PE. Its usage in OE can, however, be explained with reference to the development of the OE orthographic system. The segments [y(:)] did not occur in
the Latin sound system, thus OE scribes were faced with the problem of representing these sounds when recording the OE language. Their solution was to adopt a segment which was infrequently used in Latin (Campbell, 1959: §67), the shape of which also conveniently reflected the nature of the segment concerned.

2.1.8 æ

Like æ, this symbol does not appear in the PE orthographic system, and is only rarely used in Latin where it had become a 'mere variant of e' (Campbell, 1959: §67; see also Allen, 1965: 62). Again we can conclude that in all probability the segment represented did not exist in the Latin sound system. Some idea of the approximate phonetic value that may be assigned to the segment once more lies in an examination of the letter shape (see §2.1.3; §2.1.7 and references therein), which suggest a front rounded vowel [ø:], this being a segment intermediate in value between these normally represented by the graphs o and e (see §2.1.5 and §2.1.2 respectively). It remains to investigate the available sources of evidence (2.1.6) to ascertain whether any support can be given to this conclusion.

1 æ appears in forms in Cp. for which:

(a) The Germanic cognates have o, uo (OHG) spellings
   (Wright, 1954: 25);
(b) The PE reflexes have [i:] (Gimson, 1980: §7.09);
(c) Variant spellings in Cp. and other OE MSS include e
   (Campbell, 1959: §198).

Clearly the same set of segments as those discussed in §2.1.2.1.3 is represented. In that section it was suggested that the unrounded
vowel [e:] was the most likely synchronic value of the segment concerned in Cp., and the æ spellings were to be explained as orthographic archaisms.

Thus [e:] is represented by æ in the forms in (2.1.99).

(2.1.99)

ambrosea(-ia) : suoetnias 'sweetness' 148
(OFr. swet, OHG swozi, OS swoti, suoeti)

aurocalcum (orichalcum) : groeni æar 'green' 255
(OS groni, OHG gruoni)

The appearance of æ in the forms in (2.1.100)

(2.1.100)

sublatorium (suffl) : blastbelg 'bellows' 28
(OHG blast, ON blaatr, W-S blast)

agapem : suæsende 'food, victuals' 108
(W-S suæsende, OFr. swes, OS, OHG swas, ON svass, Go. suæs)

where the cognate evidence suggests PG [æ:] rather than [o:] (see §2.1.2.1.1) has very significant consequences for the phonological analysis which will be discussed in §2.2.1.1.2.5 (iii).

2 As noted in §2.1.2.5, [o] before an unstressed [i] or [j] is rare in Pre-OE, and the only example of an æ spelling for the reflex of this segment in the data under consideration is
circinatio : ogleung 'shearing' 474

(ON ups, OHG obasa, Go. ubiswa)

Again, §2.1.2.4 established that [e] should be the most likely broad phonetic value of the segment represented, and that @ is best explained as an orthographic archaism.

The appearance of @ for what is presumably [y] in the forms in (2.1.101)

(2.1.101)

collato(io) : umebecht 'office' 501
amtes : oemsettime 'a row of vines' 151

- the first element of which was presumably originally ymbe- 'about, round' -

can be explained with reference to the phonemic status of the segments concerned. §2.2.1.2.2.6(v) established that there is only one front rounded vowel phoneme in the dialect represented by Cp. It is therefore possible that the graphs @ and y would become equivalent and that @ represents [y] in these forms. Another possible explanation is that the degree of stress assigned to each vowel has been greatly reduced and the segment represented is [ə]. @ would therefore be a possible spelling as, if all unstressed front vowels are assumed to collapse in [ə], any 'front vowel' graph can be used to represent that segment.

That the symbol @ should appear in the Cp. MS is best explained with reference to the history of the development of the OE phonemic and orthographic systems. Like [y], the segment [ə]
did not exist in Classical Latin, and the OE scribes were faced with the problem of how it should be represented in the OE language. It seems that 'the use of the symbol æ was an intelligent use of a symbol which had become useless in Latin' (Campbell, 1959: §42) and, although the segments can be assumed to have developed into [e(:)] by the date of composition of the Cp. MS, the graph æ still appears in the text representing the language at an earlier stage in its development 65.

Digraphs

Many digraphs appear in forms in Cp. which, as they represent segments which constitute single vowels, are evidently to be considered as such rather than as sequences of two graphs (Campbell, 1959: §37). While it is possible that digraphs can be used to represent monophthongs (see ft.4), as a rule they generally appear for diphthongal segments in languages, and the assumption that this is the case in OE will be made throughout this account 66. It is also reasonable to assume that the first and second elements of the diphthong will be similar to those normally represented by the individual graphs that make up the digraph. According to Campbell (1959: §37), the use of digraphs in OE

seems based on a successful attempt to analyse the diphthongs in question, and to express their components with the symbols used to express monophthongs.

In this way, we can arrive at a rough idea of the broad phonetic value of the segments represented.
2.1.9  ea

The digraph *ea* does not occur in the spelling system of Latin, and in that of PE it frequently represents a front monophthong [i:] or [ε] (Gimson, 1980: §7.09; §7.11). Given the existence of early OE spelling variants in *æu* and *æa*, and that the *æ* in these sequences would presumably become *e* by a process of 'graphic simplification' (Campbell, 1959: §37), we can make the preliminary assumption that *ea* represents a diphthong of which the first element is [æ] and the second [ɛ] or [a] (see §2.1.1.2). A consideration of other available sources of evidence (2.1.2) will bring us to a more specific idea of the phonetic value of the segments represented.

1  *ea* appears in forms in Cp. for which:

(a) The cognates in Germanic languages have *au* (ON), *ou* (OHG), *o* (OS), *au* (Go.) (Wright, 1954: 25);

(b) The PE reflexes have [i:] (Gimson, 1980: §7.09);

(c) The normal spelling in Cp. is *ea* but *eo* and *aa* spellings are attested in early OE MSS (Campbell, 1959: §135; §275).

On occasional *eo* spellings see §2.1.10.4.

(a) From an examination of the cognate forms we can reconstruct PG [au]. On consideration of the suggested developments of the individual elements of this diphthong from PG into OE (Campbell, 1959: §132) and also the spellings that appear in early MSS, it can be assumed that [au] developed into [æu] in Pre-OE. Furthermore, as it is an attested fact that the elements of OE diphthongs should agree in height (Lass and Anderson, 1975: 90ff.; Colman, 1985: §3) it can be assumed that [u] would become lowered to [o] and eventually [ɔ]. Traditional accounts (Campbell, 1959: §135) suggest
that the second element then unrounded to [a]. It is, however, not necessary to adopt this conclusion, given that, as established in §2.1.1.2.6, the graph a can represent the segment [ɔ].

(b) The PE reflexes of this segment support this analysis. The monophthongisation of diphthongs is a very frequently attested phenomenon (see §2.1.1.1 and ft.5). In this case the segment [æ:] would be produced by a monophthongisation process, the normal development of which would be to PE [i:] (see §2.1.3.1).

(c) As noted above, the spelling variants, ea, eo, in other OE MSS reflect the segment at an earlier stage in its development. Thus ea represents [æ:ɔ] in the forms in (2.1.102)

(2.1.102)

ab euro: eastan sudan 'south easterly' 40  
(ON austr, OS oat, OFr. asta, ote)

calt(h)a: reade clafre 'red clover' 375  
(Go. rauds, OHG rot, OS rod)

The segment represented by ea in the forms in (2.1.103) results from a similar development, although the [au] diphthong arose in W-G rather than PG (Campbell, 1959: §120).

(2.1.103)

codices: onheawas 'a block for hewing on' 517  
(PG [xawwan-] (Campbell, 1959: §120), ON höggva)

castanea: cistenbeam 'chestnut tree' 374  
(Go. bags, OHG baum, OS bom, OHG poum, PE 'beam')
ee also appears in forms in Cp. for which:

(a) The Germanic cognates have a spellings;
(b) An alternative spelling found in other OE MSS is æ
(Campbell, 1959: §273).

Examples of such forms are given in (2.1.104).

(2.1.104)

c(a)erula : heawi 'blue, grey' 444
(OE hæw)
alcido(-edo) : meau 'sea mew, gull' 135
(OE mæw, OHG meh)

The cognates suggest the PG segment was [æ:], the regular
development of which is to [e:] in the Cp. dialect (§2.1.2.1.1). The
spelling evidence, however, suggests that some sort of diphthong is
represented. Campbell, (1959: §273) maintains that the diphthong
has arisen from the sequence [æ:w], 'ultimately approximated to the
prevailing OE diphthong type ǣa'. That the eaw spellings attested
in Cp. should result from 'analogical reintroduction of w' would
seem to be a fairly reasonable suggestion. There is therefore little
reason to assume that any segment other than [æ:o] is represented
by ea in the forms in (2.1.104).

3 In asapa : earngeat 'vulture', 233
(cf. Cp. earngeol, 213, Erf. ärngeup, Ld. arngeus
(Campbell, 1959: §275. ft.2))

it seems that ea appears for the reflex of PG [eu] (see §2.1.71).
Given that at one point in their development the diphthongs
derived from PG [au] and [eu] respectively were probably very
similar in their phonetic realisations, see (2.1.105)

(2.1.105)

\[
\begin{align*}
\text{PE} \ [au] & \rightarrow \text{Pre-OE} \ [æ:u] > [æ:o] > [æ:o] \\
\text{PE} \ [eu] & \rightarrow \text{Pre-OE} \ [æ:u] > [æ:o]
\end{align*}
\]

(Campbell, 1959: §275–6)

it is not surprising that some confusion should arise in their representation, and scribal error is therefore the most reasonable explanation for the appearance of ea in the above form.

4.1 ea appears in forms in Cp. for which

(a) The Germanic cognates have a;
(b) The PE reflexes have [æ], [ei] and [ø];
(c) Alternative spellings in Cp. and other OE MSS are æ, in the following environments:

(i) before r followed by a graph representing another consonant
(ii) before a consonant followed by a back vowel graph.

We are clearly concerned with the same segment discussed in §2.1.1.2.4 and 2.3 respectively. It was concluded in these sections that, largely due to the fact that it is reasonable to suppose that the short nucleus represented by ea should be similar in quality to its long counterpart (see 1, 2, & 3 above), [æ:o] is the most likely phonetic value that can be assigned to the segment, and the appearance of æ spellings can be explained with reference to the
phonemic status of the segments concerned (§2.2.1.2.3.6; 2.3.3.i).

Thus \textit{ea} represents [æo] in the forms in (2.1.106).

(2.1.106)

acies : \textit{scarpnis} 'sharpnis' 51
(OE \textit{scarp}, OFr. \textit{scarp}, OS \textit{scarp}, OHG \textit{scarph}, ON \textit{skarpr})

alumnæ : \textit{fostorbearn} 'fostor child' 131
(OE \textit{barn}, OS \textit{barn}, OHG \textit{barni}, Go. \textit{barn}, PE 'bairn')

ære alieno : \textit{geabuli} 'tribute' 96
(OE \textit{gafol} M.Lat. \textit{gabulum}, French \textit{gabelle})

crepacula : \textit{cleadur} 'clatter' 599

4.2

\textit{ea} also appears for PG [a] where alternative spellings in OE MSS include \textit{a}, \textit{e}, and \textit{a} before the graph \textit{g} which represents the (basically) velar fricative [ɣ] (§2.1.15.3.1). Presumably, the same segment as discussed in (2.1.49 ft.1) is represented. It was established in that section that the most likely value of the segment would be [e]. The \textit{ea} spellings can however be explained with reference to the fact that there is no phonemic contrast between the segments [a] [æ] [æo] or [e] in this particular environment (§2.2.1.2.3.11) and the graphs \textit{g}, \textit{æ}, \textit{ea} and \textit{a} are presumably interchangeable.

Thus \textit{ea} represents [e] in the forms in (2.1.107).

(2.1.107)

bariulus : \textit{reagufinc} 'some sort of bird' 283
(ON \textit{raginna}, OE \textit{ragufinc})

alba spina : \textit{heagoðorn} 'hawthorn' 114
2.1.10 **eo**

This digraph is not generally found in the spelling systems of PE or Latin. The only assumption that can be made as to its broad phonetic value is that it represents a diphthong of which the first element is [e], the second [o], given the value of the segments normally represented by these individual graphs when they appear in isolation (see §2.1.2, §2.1.5). A consideration of the available evidence reveals that the segments concerned in all probability have realisations in this general area.

1.1 **eo** appears in forms in Cp. for which:

(a) The Germanic cognates are spelt with *iu* (Go.), *eo*, *io* (OS, OHG), *io* (ON) (Wright, 1954: 25);

(b) The PE reflexes have *[i:]* (Gimson, 1980: §7.09);

(c) Alternative spellings in Cp. and other OE MSS include *io*, *eu*, *iu* (Campbell, 1959: §§275–6; §§293–8).

(a) The evidence of the cognates suggests PG *[eu]*, from which a development to *[e:u]* in Pre–OE, and subsequently to OE *[e:o]* in accordance with 'Diphthong Height Harmony' (see (§2.1.9 and references therein) would be considered a phonetically natural process (Campbell, 1959: §§275–6).

(b) The PE reflexes support this conclusion, as the monophthongisation of the diphthong to *[e:]* would be a natural development (see again §2.1.1.1.1 and ft.5). The reasons for
assuming that OE [e:] should develop into PE [i:] have been discussed at length in §2.1.2.1.

(c) The alternative spellings in eu clearly reflect the language at an earlier stage in its development. Those in io and iu can generally be explained with reference to the phonemic status of the segments involved. §2.2.1.1.2.7 establishes that it is unlikely that a phonemic contrast should exist between the segments [e:o] and [i:u] synchronically in the Cp. dialect, and with reference to phenomena outlined by Campbell (1959: §239-8), io and iu can be explained as archaic spellings.

Thus eo represents [e:o] in the forms in (2.1.108).

(2.1.108)

celox : ceol 'the keel of a ship' 442  
(OHG chiol)

broel : deortuun 'deer enclosure' 324  
(OHG tior, OS dior, Go. dius)

In the forms in (2.1.109)

(2.1.109)

mappa : cneoript 'knee cloth' 21  
(OS, OHG knio)

amtes : fugultreo 'pole for spreading bird nets' 150  
(PE 'tree' OS trio)

the [e:u] diphthong has arisen in W-G, rather than PG, by
processes outlined by Campbell (1959: §120.3).

1.2 In the case of the form

\textit{consobrinus} : \textit{sueor} 'cousin', 552,

(Go. \textit{swaihra}, OHG \textit{sweher})

the cognates suggest an original sequence [ex]. The diphthong in this case presumably arises from a process of contraction and 'compensatory lengthening' after loss of intervocalic [x] (Campbell, 1959: §238.2).

1.3 \textit{eo} also appears in a few forms where the cognate evidence suggests that the original segment in PG was [iu]. The diphthong would develop into Pre-OE as [iu], which is presumably the original value of the segment represented by the various \textit{iu} and \textit{io} spellings that appear in OE MSS (see §2.1.11; §2.1.12). As noted in 1, however, §2.2.1.1.2.7 concludes that a phonemic distinction between the diphthongs which appear for the reflexes of PG [iu] and [eu] in OE is unlikely. [e:o] is therefore the most reasonable suggestion for the value of the segment represented by \textit{eo} in the forms in (2.1.110)

(2.1.110)

\textit{contis} : \textit{spreotum} 'pole, sprit' 527
(OHG \textit{spru\text{\'e}zen})

\textit{bitriolus} : \textit{steopf\text{\'e}der} 'stepfather' 300
(OHG \textit{stjof}, ON \textit{stjuf})
1.4 eo also appears in forms in Cp. for which
(a) The Germanic cognates have au, ou and o spellings;
(b) The PE reflexes have [i:];
(c) The more regular spelling in OE MSS and Cp. itself is ea
(Campbell, 1959: §275-6).
Clearly the same segment as discussed in §2.1.9.1 is represented:
the eo spellings result from confusion in the use of the digraphs in
the early OE period. This is presumably due to the fact that at
some stage in their development into OE the reflexes of PG [au] and
[eu] were phonetically very similar (see, again, (2.1.105)).
Thus eo represents [æo] in the forms in (2.1.111).

(2.1.111)

chorus : eostnorōwind 'northeast wind' 460
(OS ost)
applare : eorscripel 'earscraper, earfinger' 151
(Go. ausco, cf. Cp. earwicga, 240)

A problem arises with the spelling of the vowel in the second
element of

gacila : smithstree 'an uncommon plant', 13

which in all probability represents the lexical item strea, PE
'straw' (W-G [au]: Campbell, 1959: §120.3). Given its meaning,
Campbell's suggestion (1959: §275, ft.4) that the form is 'influenced
by træo, tree' would seem to be the most feasible explanation.
2.1  eo also appears in forms in Cp. for which:

(a) The Germanic cognates are spelt with e (OS, OHG), i, ai (Go.), e, io (ON);
(b) The PE reflexes have [e] or [e];
(c) Alternative spellings in Cp. and OE MSS are e, io, iu
   (Campbell, 1959: §§275–6, 263–8), in the following environments
   (i) before r followed by a graph representing another consonant;
   (ii) before a consonant followed by a back vowel.

In these cases we are presumably dealing with the same segment discussed in §2.1.2.2.1; 2.2, in which the reasons for concluding that [eo] should be the segment represented, and the explanation for the appearance of e spellings in the forms concerned are discussed at length.

Thus eo represents [eo] in the forms in (2.1.112).

(2.1.112)

caumeuniz : eordrestes 'a lying on the ground' 360
   (OHG erda, Go. airPa, Cp. erdling, 303, PE 'earth')

cardo : heorr 'hinge, cardinal point' 423
   (OE heorr, Icel. hjarri)

balus : isernfeotor 'fetter' 272
   (OS feteros, OHG fezzaera)

contos : speoru 'spear' 528
   (OS, OHG sper)
1 The simplification of the final geminate consonant in this form has wide implications for the phonemic status of the stressed vowel, see §2.2.1.2.3.1(iii).

2.2

In some cases the cognates suggest an original PG [i] which presumably developed into [iu] in the environments concerned in Pre-OE (Campbell, 1959: §137). However, §2.2.1.2.2.9 establishes that it is likely that the contrast between [iu] and [eo] did not exist in the Cp. dialect, both segments having 'fallen together' in [eo] (Campbell, 1959: §294). Any io and iu spellings are therefore best explained as being 'orthographic archaisms', reflecting an earlier stage in the development of the sounds concerned.

Thus eo is probably represented in the forms in (2.1.113).

(2.1.113)

crepidinem: neopouard 'downwards' 5
(OS nipar, OFr. nither, OHG nidar)

battat: geonaP 'yawn' 268
(OS ginan, OHG ginen)
In

bubulis (us) : weosend 'bison', 337
(OHG wisunt, ON wishundr),

the fact that the unstressed vowel in the second element of this
'obscured compound' (§3.2.7.3.2) is apparently 'central' ([ə])
rather than 'back' (§2.1.2.5.7) has consequences for the phonemic
status of the segment concerned (§2.2.1.2.3.2(i)).

2.3

eo also appears for Pre-OE [e] before Ɉ followed by a graph
representing another consonant. As noted in §2.1.2.2.4, [e] is the
most likely realisation of the segment concerned, and the eo
spelling in the form in (2.1.114) can be explained with reference to
the phonemic status of the segments [e] and [eo] (§2.2.1.2.3.4).

Thus eo represents [e] in (2.1.114).

(2.1.114)

biothanatos : scolfboran 'suicide' 299
(Go. silba, PE self)
In some cases eo appears for PG [a] in environments where it would be expected to develop to [æ] (§2.1.9.4.1). The eo spellings again appear to be the result of scribal confusion in the use of the digraphs ea and eo (see 4 above, and references therein).

eo therefore represents [æ] in the forms in 2.1.115)

(2.1.115)

callos : weorras 'hard skin'  400
(OE wearr, OHG werra)

commentis : seorwum 'device, contrivance'  545
(OE sirwe, searu, Go. sarwa, OHG sarwa, saru, gisarwi)

4  eo in unstressed syllables

eo occasionally appears representing the 1st person singular of the present tense which, as noted in §2.1.2.5.1, is generally assumed to be the segment [ə] ('PG [o:]'), usually represented by e. According to traditional accounts, diphthongs are not attested in unstressed syllables in OE (Campbell, 1959: §331.7; §355). The appearance of eo in the forms in (2.1.116) is therefore best explained with reference to the Latin items glossed.

(2.1.116)

calleo : frafeleo 'to be cunning'  431

alligeo (ego) : recceo 'to reach'  139

Obviously the scribe has mistakenly copied the Latin inflection, and
presumably this is an instance of 'dittographing' (see §1.3.1.1.2.1 and references therein).

5 The graphic sequence eo is also attested in the form

\[ \text{jungula : geocboga} \ 'yolk', 15 \]

(\text{Go. juk, OHG joh, OE goc, ioc})

In this case eo is not to be interpreted as a digraph, but as a sequence of the graph e followed by the graph o. As discussed in §2.1.1.5.1.2, e in this case probably does not represent a phonological segment, but merely acts as a 'diacritic' which serves to indicate the palatal nature of the preceding consonant.

The same explanation may be given for the e in recceo (2.1.116) as cc also represents a palatal segment.

2.1.11 io

Again, this digraph does not appear in the spelling systems of PE or Latin, and any provisional conclusions that are to be made about its broad phonetic value must come from a consideration of the value of the segments represented by the individual graphs i and o. The first element is in all probability the high front segment [i] (§2.1.4). Given the tendency for diphthongs in OE to conform to templates exhibiting 'Diphthong Height Harmony' (§2.1.9 and references therein), it can be assumed that the second element is more likely to be [u] than [o].
The digraph io appears in forms in Cp. for which:

(a) The Germanic cognates have iu (Go., OHG, OS), iu (ON);
(b) The PE reflexes have [i:] (Gimson, 1980: §7.09);
(c) Alternative spellings in Cp. and other OE MSS include eo, eu, iu (Campbell, 1959: §294.8).

On the evidence of the cognates it is possible to reconstruct PG [iu], which would develop into Pre-OE as [i:u] (Campbell, 1959: §137). However, as discussed in §2.1.10.3, it seems reasonable to assume that the Pre-OE diphthongs [e:o] and [i:u] have merged in the Cp. dialect, and [e:o] is in all probability the segment that is represented. This suggestion is supported by the evidence of the PE reflexes of the forms concerned. These have [i:] rather than [ai], the outcome that would have resulted if the diphthong had been [iu] at the time of monophthongisation 73. The io spellings in the forms in (2.1.117) are therefore best explained as reflecting the segment at an earlier stage in its development.

(2.1.117)

apiastrum : biao 'bee' 181
(OhG pia, ON by)

commercium : gestrion 'gain, wealth' 510
(Os gi-striuni, OhG kistruini)

In apricitas, color : hio 'hue' 188
(OhG hiwi)

cabillatio(v) : glio 'glee' 354

the diphthongs have arisen in W-G rather than PG (Campbell, 1959: §120.3).
Where *io* represents a short nucleus it is not easy to ascertain from the available cognate evidence whether the original PG vowel was high or mid (Campbell, 1959: §115). If it can be established that it is the latter, this would provide fairly conclusive evidence that the segments represented by *io* and *eo* are equivalent in the Cp. dialect and that *[eo]* is the most likely broad phonetic value of the segment concerned. The present account assumes that, on balance, it can be maintained that *io* represents *[eo]* in forms such as those in (2.1.118).

(2.1.118)

<table>
<thead>
<tr>
<th>Latin</th>
<th>Cognate</th>
<th>Meaning</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>clavicularius</td>
<td><em>cañghiorde</em></td>
<td>'key keeper'</td>
<td>46</td>
</tr>
<tr>
<td>bobulcus(bu)</td>
<td><em>hriñghiorde</em></td>
<td>'herdsman'</td>
<td>313</td>
</tr>
<tr>
<td></td>
<td>(OS <em>hirdi</em>, OHG <em>hirti</em>, ON <em>hiðir</em>, W-S <em>hierd</em>, Go. <em>hairdeis</em>)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.1.12 *eu*

As discussed in §2.1.10, *eu* spellings in Cp. presumably reflect the reflex of the Germanic diphthong *[eu]* at an earlier stage in the development of the language, and it is likely that the segment *[e:o]* is in fact represented in forms such as

<table>
<thead>
<tr>
<th>Latin</th>
<th>Cognate</th>
<th>Meaning</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>bapis (baptes)</td>
<td><em>treuteru</em></td>
<td>'resin, gum'</td>
<td>279</td>
</tr>
</tbody>
</table>

The appearance of *eo* spellings for the same morpheme in the same text, see (2.1.109), would seem to give a definite indication that the segments concerned had become equivalent. In
conc(h)a : **mundleu** 'basin for washing the hands', 561

(ON **munnlau**g; OE *lea*, *lau*, *leag*; OHG *louga*)

the cognate evidence suggests PG [au], and the eu spelling is best explained as the result of scribal error or confusion along the lines of that attested in §2.1.10.4 above.

In the form in (2.1.119), the cognates suggest an original PG [a] which presumably developed to [e] and then to [eo] as a result of 'suffix transference' (Campbell, 1959: §211). Again, [eo] is in all probability the value of the segment represented, the eu spelling being simply an archaic variant (2.1.119).

(2.1.119)

va(e) : **euwa** 'ewe' 31

(OHG *awi*, Go. *awistr*, *awept*)

2.1.13  **iud**

Similarly, the spelling iu can be interpreted as an early variant of io representing Pre–OE [i:u] which, as noted in §2.1.11, had apparently merged with the reflex of PG [eu] in the Cp. dialect.

Thus in the forms in (2.1.120)

(2.1.120)

adpliciut : **gepiudde** 'to join, connect' 91

ambulas : **piustra** 'darkness' 152

(OS *thiuesta*)

iu presumably represents the segment [e:o].
In accordance with the principles outlined in §2.3.2, this refers to \( h \), or any other consonantal graph, when it appears in the onset...
of a syllable which represents a root or a derivational affix.

\( h \) occurs in this position in forms in Cp. for which

(a) The Germanic cognates are spelt with \( h \), and cognate forms in non-Germanic I-E languages have \( c \) or \( k \) (Prokosch, 1939: §19);

(b) The PE reflexes have [h] (Gimson, 1980: §8.19);

(c) \( h \) is the uniform spelling of the forms concerned in Cp. and other OE MSS (Campbell, 1959: §50.3).

(a) On the evidence of the Germanic cognates we can reconstruct PG \([x]\): the voiceless velar fricative. This is supported by 'inverted reconstruction' (Penzl, 1972: 31) from I-E, as it can be observed that all I-E voiceless stops become fricatives in the Germanic languages (Wright, 1954: §120). It is generally assumed that the segments in the PG obstruent system undergo a process of 'lenition' or 'strengthening' as they develop into Pre-OE, in accordance with

(i) their position in the foot;

(ii) their place of articulation.

For a brief outline of the concepts of lenition and fortition, see Lass (1984: 177-183) and references therein. It is generally assumed that 'we can characterise particular environments as "preferred" for certain strength changes' (ibid: 181) and 'there does not seem to be - in any position - an across-the-board lenition: certain place categories are "weak" or "strong" and they vary from language to language' (ibid: 183).

These 'hierarchies' are usually established 'on the basis of extensive observation' (ibid: 181). As far as the OE data is
concerned therefore, we can claim that OE segments are prone to 'lenition' or 'strengthening' along the principles outlined in (2.1.122). See, further, Lass and Anderson, (1975: 152-187).

(2.1.122)

**Segment likely to strengthen**  
(a) position in foot: initial > final > medial  
(b) place of articulation: dental > labial > velar

In initial position it can be predicted that PG [χ] would remain as such as it developed into Pre-OE (2.1.122a).

(b) The PE reflexes suggest that the segment has subsequently developed to a glottal fricative, the development of [χ] to [h] being in accordance with the tendency towards lenition (Lass, 1984: 179). It is impossible to determine the date at which this change in articulation took place, and it must therefore be admitted that either [χ] or [h] could be the segment represented by the graph h in the forms concerned. Given that [h] represents [χ] in other positions in Cp. (see below), the present account maintains that [χ] is the segment represented, but it must be acknowledged that ultimately the precise value cannot be recovered.

(c) Generally, no spelling variants occur in Cp. or any other OE MSS ⁷⁵. Thus h represents [χ] in the forms in (2.1.123).
briensis: hondwyrm 'an insect supposed to produce disease in the hand'
(Go. handus, OHG hant, OS hand)
cereacus: hornblauuere 'horn blower'
(Go. haurn, OS, OHG horn, Lat. cornus)

1.2

There is some controversy over the value of the segment represented by h where it precedes a liquid or nasal consonant in the initial position. Certain authorities (e.g. Campbell, 1959: §461 76) claim that h is purely a diacritic indicating that the following sonorant is voiceless. The evidence of the PE reflexes of the forms concerned is inconclusive. While no phonetic segment appears to be represented by the graph, there is also no indication that the following sonorant has ever been voiceless (except in the case of the sequence [χw], where [u] is the realisation in some non-standard dialects (Gimson, 1980: §8.29)). Given that h represents [χ] in all other environments in OE, it seems perfectly reasonable to assume that it does so in the forms considered in (2.1.124), and that the segment was simply lost in the subsequent history of the language. This, of course, does not rule out the possibility that the sonorant in question would lose some of its voicing in this environment (see §2.1.23.4, ft.120). A sequence of [χ] plus liquid or nasal consonant is perfectly acceptable as a syllable onset in OE (see §2.2.2.5.3.1) and to assume that the graphic sequences hl, hr, hw and hn should be open to any other interpretation would simply complicate the present account.77
Thus $h$ presumably represents [$\chi$] in the forms in (2.1.124).

(2.1.124)

abelena : **hazelnutu** 'hazel nut' 33  
(OHG **hnuz**)  

albi pedius : **huitfoot** 'having white feet' 122  
(Go. **h,eiz**, OS **hwit**)  

attoniti : **hlysnende** 'listening' 267

$h$ in foot-final position, and followed by a voiceless consonant

In accordance with the principles outlined in §2.3.2, $h$ or any other consonant in this environment appears representing the final segment in a syllable which is either the rightmost in the word form or is followed by syllables representing roots or derivational affixes. Segments which appear medially in disyllabic roots or followed by inflectional affixes are therefore discounted.

2.1 $h$ appears in this position in forms in Cp. for which

(a) The Germanic cognates are spelt with $h$ (Prokosch, 1939: §19);

(b) The PE reflexes either contain no phonetic segment that corresponds to that represented by $h$ in the form concerned, or the segment [f] appears (Gimson, 1980: §8.15);

(c) Alternative spellings in forms in Cp. and other OE MSS include g (Campbell, 1959: §57.4; §446) and, more rarely, gh, ch, c spellings are attested (ibid: §57.3;4).
(a) On the evidence of the cognates, PG [χ] can be reconstructed, which, it can be assumed, will remain unaffected by the lenition process by virtue of its position in the foot (2.1.122a). Thus h can be supposed to represent [χ] in the forms in (2.1.125).

(b) The evidence of the PE reflexes conforms with this suggestion. That [χ] should be lost as a continuation of the lenition process is acceptable, given that the velar series of obstruents is most prone to lenition (2.1.122b). The alternative development to the more regularly attested segment [f] is also perfectly feasible, and the retention of [χ] in some non-standard dialects confirms the suggested value 78.

(c) The existence of g spellings in forms in Cp. and other MSS can be explained with reference to the phonemic status of the segments concerned. §2.2.2.1.2.2 establishes that as a result of a development outlined in §2.1.14.2.2 below, no contrast exists between the segments normally represented by h and g 79 in this position. As [χ] is the only segment that occurs, the two graphs have become equivalent and can be used interchangeably. The appearance of gh, c and ch spellings will be explained in §2.1.17.5 and ft.102.

Thus h represents [χ] in the forms in (2.1.125).

(2.1.125)

caliga : scoh 'shoe' 373
(OHG scuoh, OS scoh)

commentum : afoht 'thought out, thought' 566
2.2

It can also be assumed that the reflex of PG [χ] will be influenced by the nature of the vowel that precedes it in Pre–OE. In addition to the fact that such a phenomenon would be phonetically natural (§1.3.6.2.1.2), the main evidence for this assumption comes from the fact that monograph spellings appear for Pre–OE diphthongs in certain forms in Cp. and other OE MSS. As discussed in §2.1.2.1.2.2, it seems reasonable to suppose that these spellings indicate that the original velar consonant has developed a palatal realisation.

Thus h presumably represents [ç] rather than [χ] in forms such as that in (2.1.126).

(2.1.126)

cer(v)us : elh 'elk' 443
(OHG elaho, elho, elh, W–S eolh)

Purely on the evidence that the corresponding voiced segment (see §2.1.15.2.4) apparently becomes palatalised after a front vowel it seems reasonable to suggest that h represents [ç] in the forms in (2.1.127).

(2.1.127)

clinici : færtlyhted 'patients' 484
(cf. tyhten 'to draw, spread out' PE 'tight', OHG zuhten,
zuhtigan. See (3.2.72b) on the interpretation of this form).

The existence of a similar alternation in PD Scots and German dialects provides further support for this assumption (Prokosch, 1939: §19).

2.3 h also appears in final position in forms in CP. for which

(a) The Germanic cognates are spelt with g (Prokosch, 1939: §18);

(b) There is generally no corresponding phonetic segment in the PE reflex (Anderson, to appear);

(c) Alternative spellings in CP. and other MSS include g (Campbell, 1959: §446).

(a) On the evidence of the cognate forms we can reconstruct the segment [y], a voiced velar fricative, in PG. Following the principles of lenition and strengthening that affect the PG obstruents as they develop into Pre-OE, see (2.1.122), we can predict that this segment would devoice in this context, presumably becoming identified with the reflexes of PG [x], described in 2.1 and 2.2 (Campbell, 1959: §446).

(b) This is supported by the evidence of the PE reflex of the forms concerned from which it can be deduced that the development of the segments represented after the OE period was identical to that which affected the OE segments developed from PG [x], described in 2.1 and 2.2.

(c) The alternative spellings in g can be explained with reference
to the phonemic status of the segment concerned (§2.2.2.1.3). They presumably reflect the language at an earlier stage in its development.

Thus ʰ represents [ç] in the form in (2.1.128).

(2.1.128)

amilarius : meärh ʰ 'marrow' 153
(OHG marag, ON mergr)

1 Despite the digraph spelling, it is evident that the front vowel [e] is represented, and the consonant is therefore best assumed to be palatal rather than velar (§2.1.2.2.6).

3 ʰ in foot medial position and between voiced segments

With reference to §2.3.2, it can be established that if a segment is foot medial, it occurs either at the syllable boundary in a disyllabic root, or between a root and a following inflectional affix.

ʰ appears in this position in forms in Cp. for which:

(a) The Germanic cognates are spelt with ʰ (Prokosch, 1939: §18);

(b) There is generally no phonetic segment in the PE reflex that corresponds to the segment represented in Cp;

(c) Very often forms without the ʰ spelling are attested in Cp. and other OE MSS (Campbell, 1959: §461).

(a) While PG [χ] can be reconstructed on the evidence of the cognates, according to the principles of 'lenition' we can predict that this segment would be lost in the transition from PG to Pre–OE (2.1.122 and Lass, 1984: §179).
(b) The PE reflexes of the forms concerned evidently support this assumption,
as do (c) the vast majority of the spellings that appear for the relevant forms in Cp. and other OE MSS. Given that forms without h spellings appear in Cp., e.g.

    consobrinus : sueor 'father-in-law, cousin', 552
    (Go. swaihra, OHG sweher, OE swehar)

it is reasonable to suggest that [x] has been lost in the dialect, represented by the MS. The h spellings in the forms in (2.1.128) therefore reflect the language at an earlier stage in its development. It is just conceivable that some phonetic value may be attributed to the segment represented. Campbell, (1959: §461) maintains that 'in all West Gmc. languages, medial x became a breathing between vowels, and between vowel and l, m, n, r.'
Thus h in the forms in (2.1.129)

(2.1.129).

    allox : tahæ 'toe' 141
    (OHG zehe, OE ta)
    capria(ea) : raha 'roe buck, roe' 403
    (OHG reho, OE rea)

may or may not represent phonetic material. Given that the Cp. MS often contains spellings that seem to reflect the OE language at an earlier stage in its development, the latter situation is perhaps
the more likely. In the form

acervus : muha 'mow', 46
(cf. Icel. mugi, OE muga, muwa)

the evidence of the cognates would seem to suggest that the segment represented is the reflex of PG [y], which, (see §2.1.15.3.1) can be expected to develop to Pre-OE [y] in this context. (Campbell, 1959: §398, ft.2). The appearance of h in this particular form is therefore best explained as the result of scribal error, as the symbols h and g are generally equivalent in other environments (see §2.1.15.2, and Campbell, 1959: §447).

Certain cognates of the form:

citropodes : croha 'crock, pitcher', 461
(OFr. krocha, OHG krog, OS kruka, Dan. krukte, Icel. krukkja)

suggest an original geminate [xx], which we can predict would develop to [xx] in Pre-OE, gemination being an environment that is resistant to 'lenition' (Lass, 1984: 182). The appearance of the single graph h is best explained as being the result of 'scribal error or confusion' rather than as having any phonological significance (Campbell, 1959: §408, ft.1; §66).

The graph h in Cp. therefore represents a variety of phonetic segments [x], [y] and, as discussed in 3, possibly an intervocalic 'breathing'. The use of one graph to represent velar and palatal fricatives alike is possible due to the phonemic status of the segments concerned, no contrast is ever attested between them ($2.2.2.1.3$).
In the spelling systems of Latin and PE the graph $g$ generally represents a voiced velar stop, see (2.1.130)

(2.1.130)

PE $[g]$

go
dog
rugby
ignore
bugle

(Gimson, 1980: §8.08)

Latin $[g]$

glossere
gemma

$[g]$ agnus


which gives us a preliminary idea as to the nature of the segments it may represent in the Cp. dialect. A consideration of available evidence, however, reveals that $g$ represents a wider range of segments in the MS.

1 $g$ in foot initial position

1.1 $g$ appears in forms in Cp. for which

(a) The German cognates are spelt with $g$ (Prokosch, 1939:§18);

(b) The PE reflexes contain the spelling $g$ (Gimson, 1980: §8.08);

(c) $g$ is the invariable spelling for the segment concerned in Cp. and other OE MSS (Campbell, 1959: §427).

(a) On the evidence of the cognate forms, the PG voiced velar fricative $[y]$ can be reconstructed. This value is also suggested by 'inverted reconstruction' from I-E gh (Wright, 1954: §131). In accordance with the processes of lenition and strengthening that
affect the PG obstruents as they develop into Pre-OE, we might expect the segment to become a stop [g], and this is certainly its realisation by the PE period. However, given that the velar series of obstruents is the least prone to undergo 'strengthening' (2.1.122b), it is possible that the segment would still be fricative at the period at which the Cp. MS was written. As with the synchronic value suggested for initial $h$ (§2.1.14.1.1), the precise synchronic value to be assigned to initial $g$ is ultimately irrecoverable, but given that $g$ represents [γ] in other environments in Cp. (see 3.1) the present account will assume that $g = [γ]$ in the forms in (2.1.131).

PG [γ] is also influenced by the nature of the vowel that follows it (see Campbell, 1959: §426 and 1.2 below). Initial PG [γ] with the PE reflex [g] is therefore only found in Cp. before a back vowel, 'secondary' front vowel or any consonant (ibid: §427).

Thus $g$ represents [γ] in the forms in (2.1.131).

(2.1.131)

anser : goos 'goose' 172  
(Go. gans)

bra(c)hiale : gyrdels 'girdle' 321  
(ON gyrdill, OHG gurtill)

aurocalcum (orichalcum) : groeni aar 'green' 255  
(OS groni, OFr. greni, OHG gruoni)

1.2 $g$ also appears in forms in Cp. for which

(a) The Germanic cognates have $g$ spellings (Prokosch, 1939: §18);

(b) The PE reflexes contain the segment [j] (Gimson, 1980:}
Alternative spellings in Cp. and other OE MSS are i, ge, gi (Campbell, 1959: §45).

(a) The evidence of the cognates suggests PG [y] which, as noted in 1.1, develops into [y] in Pre-OE. It was, however, also noted that this segment is influenced by the nature of the vowel that follows, and it can be assumed that [y] would become palatalised to [y'] before a vowel with a front realisation. Presumably this segment eventually became identified with the sound developed from PG [j] (Campbell, 1959: §427).

(b) The PE reflexes contain a palatal approximant rather than a fricative, and it is yet again impossible to ascertain at which stage the change in manner of articulation may have occurred. The possibility of interchange between [i] and [j], as outlined by Campbell (1959: §398.4), would, however, seem to indicate that a segment with a relatively open articulation is represented by the OE period, and the present account therefore accepts that g = [j] rather than [y'] in the forms in (2.1.132).

(c) The spelling variants in i, ge and gi can be explained with reference to the phonemic status of the segments concerned, and a consideration of the history of OE scribal practice.

The segment [j] has a limited distribution in PG (Wright, 1954: §126.2, and see §2.1.4.6). It was, therefore, not until the palatalisation of PG [y] that the palatal approximant became widely distributed in OE. Thus the OE scribes were faced with the problem of finding a symbol to represent this segment. In Latin the
approximant was represented by i (Allen, 1965: 37-8), and in some cases this was the solution adopted in OE ($2.1.4.6). However, given that the contrast between the segments [j] and [y] very rarely materialises in the Cp. dialect (see $2.2.2.1), it is clear that in practice the same graph g can be used to represent [j] and [y] alike.

In most instances the nature of the segment represented can be automatically deduced from its environment. Probably in the interests of economy within the orthographic system, it was felt unnecessary to introduce a new symbol to capture this rarely attested contrast, especially as none readily presented itself. The alternative spellings in ge and gi illustrate attempts by the OE scribes to convey the distinction between [j] and [y], e and i functioning as diacritics to indicate the palatal nature of the preceding consonant. Significantly, these alternative 'digraph' spellings are particularly prevalent in the rare cases where a potential velar-palatal contrast arises 86.

Thus g represents [j] in the forms in (2.1.132).

(2.1.132)

amtes : wiingeardes 'vinyard' 151
(OS gard, OHG garto, Go. garde, ON garpr)

crucus (crocus) : gelo 'yellow' 598
(OS, OHG gelo)

1.3 g also appears in foot initial position in forms in Cp. for which

(a) The Germanic cognates are spelt with j or g (Wright, 1954: §152) 87;

(b) The PE reflexes have [j] (Gimson, 1980: §8.28);
(c) Alternative spellings in Cp. and other OE MSS are again gi, ge and gi (Campbell, 1959: §45).

(a) On the evidence of the cognate forms it can be concluded that the original segment in PG was [j].

(b) This can be assumed to develop into Pre-OE as [j], a realisation which is supported by its PE reflexes. It is however not exactly clear how constricted the segment would be in its articulation (see 1.2 and ft.84).

(c) The reasons behind the appearance of the spelling variants attested in OE MSS are given in 1.2 above. It must be noted that they are particularly common before a back vowel as this is one of the rare occasions where a contrast between [y] and [j] might arise, see(2.2.46).

Thus g represents [j] in the forms in (2.1.133).

(2.1.133)

annua : gerlice 'yearly, annually' 170
(OS jar, ger, Go. jer, OHG jar ON ar)

jungula : geocboga 'yolk' 15
(Go. juk)

2 g in foot final position, and before voiceless consonants

2.1 g appears in this environment in forms in Cp. for which

(a) the cognate forms in Germanic languages have g;

(b) The PE reflexes either contain no corresponding phonetic segment, or [f] ([x] also occurs in some non-standard
dialects);

(c) \(h\) is occasionally attested as an alternative spelling in Cp. and other OE MSS.

Evidently \(g\) represents the same segment as discussed in §2.1.14.2.3. The fact that \([\chi]\) is its most likely realisation and the reasons for the \(h/g\) alternation have been established in that particular section.

\(g\) therefore can be assumed to represent \([\chi]\) in the forms in (2.1.134).

(2.1.134)

\[
\begin{align*}
\text{canthera (-arus) : } \textit{trog} & \quad \textit{'trough'} & 425 \\
& \text{(OHG \textit{trog})} \\
\text{armus : } \textit{boog} & \quad \textit{'bough'} & 215 \\
& \text{(OHG \textit{boug}, \text{ON \textit{bogr}, \text{OFr., OS \textit{bog})}}}
\end{align*}
\]

2.2 \(g\) also appears in forms in Cp. for which

(a) The Germanic cognates have \(h\) spellings;

(b) The PE reflexes contain the segments \([f]\) (and \([\chi]\) in non-standard dialects);

(c) \(h\) frequently appears in equivalent forms in Cp. and other OE MSS, and occasionally \(gh\), \(ch\) and \(g\) spellings are attested.

Clearly the same segment as discussed in §2.1.4.2.1 is represented, and the reasons for assuming the value \([\chi]\) and an explanation of the spelling variation that occurs can be found in that section.

Thus \(g\) represents \([\chi]\) in the form in (2.1.135).
2.3 In the form:

mantega : teag, 'tie, band', 19,
(OE teah, teh)

despite the spelling of the vowel, the palatal [ç] is presumably represented, (compare mearg (2.1.128) above).

2.4 g also occurs in final position in forms where

(a) The Germanic cognates have g spellings (Prokosch, 1939: §18);

(b) The PE reflexes contain diphthongs with [i] as a second element: for example [ei] (Gimson, 1980: §7.22);

(c) Alternative spellings in Cp. and other OE MSS include ig (Campbell, 1959: §45).

(a) The cognates suggest PG [ɣ] which, when it followed a front vowel, became palatalised to [ɣ'] and eventually developed to [j] in Pre-OE (Campbell, 1959: §428).

(b) Unlike the situation that pertained with its voiceless counterpart, see §2.1.14.2.2, the fact that the palatalised segment merged with the segment developed from PG [j] means that the PE reflexes can be cited as direct evidence of this development (see
ft.80): for example, the sequence [æj] has evidently developed to PG [ei] (see Campbell, 1959: §266; Colman, 1983a).

(c) For the reasons for the assumption that g can be used to represent both palatal and velar segments, and an account of the occasional use of diacritics to distinguish between these if necessary, see the discussion of g in initial position (1.2).

Thus g represents [j] in the forms in (2.1.136).

(2.1.136)

anaglossa : wegbrade 'way bread' 213
(OS, OHG weg, Go. wigs)

affectui vel dilectione : megsibbe 1 'kinship' 103
(cf. OE meg 'kinsman', Go. megs, OS mag, OFr. mech, OHG meg)

1 Compare Cp. meig, 495 in which the i presumably acts as a diacritic indicating the palatal nature of the consonant.

The form

agastrum : agmang 'a mixture of eggs', 105
(cf. OE ag, æg; OS, OHG ei; ON egg, PE 'egg')

reflects the dangers of placing too much emphasis on the evidence of PE data. The form has clearly undergone historical development along the lines of that described by Campbell (1959: §120) which suggests OE [j] rather than the [g] which might be suspected given the PE reflex. The PE form is to be explained by the fact that it is a Scandinavian loan rather than a direct reflex of the reconstructed forms in OE (see the relevant entry in the O.E.D.).
3.1 \textit{g} appears in medial position in forms in Cp. for which

(a) The spelling \textit{g} appears in the cognate forms (Prokosch, 1939: §18);

(b) The PE reflexes frequently contain a diphthong with \textit{[u]} as a second element: \textit{e.g.} [au], [æu] (Gimson, 1980: §7.26; §7.25);

(c) \textit{g} is the only graph that appears in the forms concerned in Cp. and other OE MSS (Campbell, 1959: §429).

(a) On the evidence of the cognates in Germanic languages, PG \textit{[y]} can be reconstructed. This segment can be expected to remain a voiced velar fricative as far as the effects of lenition and 'strengthening' are concerned by virtue of its position in the foot.

(b) This value is supported by the evidence of the PE reflexes: the \textit{[u]} develops from \textit{[w]} which can be seen to be the result of the further tendency of the segment to undergo 'lenition' in the historic English period. Given the fact that the velar obstruents are most susceptible to this process, this would seem to be a natural development. (See Anderson, to appear ft. ?; and references therein; Campbell, 1959: §430).

Thus \textit{g} represents \textit{[y]} in the forms in (2.1.137).

(2.1.137)

\textit{jungula} : \textit{geocboha} \ 'yolk'  

\textit{15}
amites: fugultree 'pole for spreading bird nets' 150 (Go. fugiles, OHG fogal, PE 'fowl')

In the form

alba spina: hea[go]gorn 'hawthorn', 114
(cf. OHG hagedorn, OS hago, ON hagi)

it can be assumed that g represents a palatalised segment [y']. §2.1.9.4.2 established that ea represents the segment [e] which would suggest that the velar consonant had developed a palatal allophone in this position.

3.2 g also appears in forms in which
(a) The cognates are spelled with g (Prokosch, 1939:§18);
(b) The PE reflexes contain diphthongs with high front second elements (e.g. [ei]; Gimson, 1980: §7.22);
(c) Alternative spellings in Cp. and OE MSS include i, iɡ, (Campbell, 1959: §45).

(a) The cognate evidence suggests PG [ɣ] which, influenced by the surrounding front vowels 83, developed to [ɣ'] and subsequently [j] in OE (Campbell, 1959: §429).

(b) The PE reflexes support this assumption, the approximant having subsequently become part of the vocalic nucleus (Campbell, 1959: §266; Colman, 1983a).

(c) The alternative spellings merely exhibit the occasional use of
diacritics to indicate the palatal nature of the segment.

Thus \(g\) represents [j] in the forms in (2.1.138).

(2.1.138)

carbasus : seglbosem 'bosom of a sail' 412
(OS segel, OHG segal)

ban : segn 'sign, standard' 279
(Lat. signum)

3.3 In the form

crates : hegas 'hay', 606
(Go. hawi, OS hawi),

the cognates suggest an original PG sequence [awj] which would become [awwj] in W-G (Campbell, 1959: §120). \(g\) therefore represents the reflex of W-G [j] which would presumably remain [j] in OE and come to form part of the nucleus by the PE period.

\(g\) also represents [j] from PG [j] in the present participles of weak verbs of class II. According to Campbell (1959: §757), an original sequence [ij] became [j] which 'was lost after long syllables... but remained after short syllables'. Thus [j] is represented in the forms in (2.1.139).

(2.1.139)

aporians : anscungendi 'to regard with loathing' 177

adnitentibus : tilgendum 'to strive after' 80
4.1 \( g \) after nasals

\( g \) appears in forms in Cp. for which

(a) The cognate forms are spelt with \( ng \) in most Germanic languages and \( gg \) in Go. (Prokosch, 1939: §18);

(b) There is generally no corresponding segment in the PE reflex. In a few morphophonemic alternations, such as 'longer' (compare 'long') and forms in certain non-standard dialects (Gimson, 1980: §8.29) the graph \( g \) does appear to represent a distinct segment: the velar stop \([g]\);

(c) \( g \) is the only graph that appears for the segment concerned in Cp. and other OE MSS (Campbell, 1959: §§428, 429).

(a) The PG cognates allow PG \([\gamma]\) to be reconstructed. As the post-nasal environment appears to be one which encourages strengthening, it can be predicted that the segment develops to a stop in Pre-OE\(^90\).

(b) This suggestion is supported by the nature of the segment that appears in the PE reflexes.

Thus \( g \) represents \([g]\) in the forms in (2.1.140).

(2.1.140)

\begin{align*}
\text{cassidele} & : \text{pung} & \text{'small bag, purse'} & 391 \\
& & \text{(Go. puggs, OHG pfung)} \\
\text{agastrum} & : \text{agmang} & \text{a mixture of eggs'} & 105 \\
& & \text{(OS gimang, OFr. mang, cf. PE 'among')} \\
\text{aquilium (aculeus)} & : \text{onge} & \text{'sting'} & 192
\end{align*}
256

(OHG ange)

and the derivational affix -ung (Campbell, 1959: §590.8) as in

confusione : gemengiunge 'mixture, confusion' 522

(h)armonia : suinsung 'melody' 195

4.2 It would also seem likely that a palatal segment would develop
in foot-final position after a front vowel, and foot-medially in the
environments discussed in 3.2 (Campbell, 1959: §§428;429). This
segment may or may not have become identified with the sound
developed from PG [j]. While, due to subsequent developments in
the language, PE reflexes provide no indication that this was the
case, the existence of forms with diacritics such as gi and ig,
see (2.1.141), and certain Runic spellings supports the
assumption (motivated largely by a consideration of what would
seem to be theoretically phonetically natural) that [j] is
represented by g and gi in the forms in (2.1.141).

(2.1.141)

bitorius : erdlind 'farmer' 302

carbunculus : spryng 'ulcer, sore, pustule' 351

confusione : gemengiunge 1 'mixture, confusion' 522

(OHG menghid, OS mengian, OFr. mengia, PE 'mingle')

apo(s)tasia : frætgengian 1 'fugitive, apostate' 183

(OE fraégenge, OHG Ëgengio, ON undinge)

1 The i in both these forms would seem to be a diacritic.

The symbol g is therefore used to represent a wider range of
segments than its use in the orthographic systems of PE or Latin
would suggest. That one graph can represent both velar and
palatal segments can be explained with reference to the fact that the velar/palatal contrast is very rarely attested in OE and the use of **g** as a graph to represent both voiced and voiceless segments is again possible because of the phonemic status of the segments concerned.

2.1.16 **cg**

1.1 The sequence **cg** does not represent a distinct segment in the orthographic systems of PE or Latin. It occurs in forms in Cp. however where

(a) The cognates in W-G languages\(^94\) have **gg**, **ck** (Prokosch, 1939: §30);

(b) The PE reflexes have **[g]** (Gimson, 1980: §8.08);

(c) **gg** is an alternative spelling for the forms concerned in other OE MSS (Campbell, 1959: §64)\(^95\).

(a) The cognate forms suggest W-G **[yy]** which, it can be assumed, developed to Pre-OE **[gg]**, gemination being an environment which encourages strengthening (see again Lass, 1984: 182). If the velar sequence remains unaffected by the nature of the vowels that surround it (see 1.2 below), it will remain as such in OE (Campbell, 1959: §429).

(b) 'Long' or geminate consonants are not generally attested in PE\(^96\) - Thus, beyond the fact that the PE reflex of the segment concerned is different from that of the corresponding simplex (see §2.1.15.3.1), this type of evidence offers little assistance in the recovery of the precise synchronic value of the segment represented.
(c) The alternative spellings in \textit{gg} can be explained by the fact that \textit{cg} and \textit{gg} seem to be purely graphic variants: \textit{cg} appearing in OE texts as the result of Celtic influence (Campbell, 1959: §64, ft.1).

Thus \textit{cg} represents \textit{[gg]} in forms such as that in (2.1.142).

(2.1.142)

\textit{auriculum} : \textit{earwicga} 'earwig' 240

1.2 \textit{cg} also appears in forms for which

(a) The W-G cognates have \textit{gg} and \textit{ck} in UG (Prokosch, 1939: §30);

(b) The PE reflexes contain the segment \textit{[d3]} (Gimson, 1980: §8.11);

(c) \textit{gg} is an alternative spelling found in Cp. and other OE MSS (Campbell, 1959: §64).

(a) The cognate evidence again suggests W-G \textit{[yy]} which presumably develops to \textit{[gg]} in Pre-OE (1.1), and subsequently palatalises and assibilates in the environments cited by Campbell (1959: §§423; 429).

(b) While the occurrence of this development is supported by the PE reflexes, it is, of course, ultimately impossible to ascertain exactly whether \textit{cg} in Cp. represents \textit{[gg']} or \textit{[d3]}. The present account however will assume that assibilation has taken place (§2.2.2.2.4).
(c) The fact that gg is purely an orthographic variant for the segments concerned has been noted in §2.1.16.1.1 above.

Thus cg represents [d3] in the forms in (2.1.143)

(2.1.143)

carix(ex) : secg 'edge' 371
(MND segge)

acies, et ordo
militum et oculorum
visus et acumen ferri : ecg 'edge' 510
(OFr. egg, OS eggia, OHG ecka, ON egg)

Note that in the form

culix(ex) : mugg 'midge', 617

(OE mucg; OHG mucca, mugga; OS muggia)

the variant sequence gg is attested.

2.1.17 c

In the orthographic system of Classical Latin this symbol represents a voiceless velar stop [k] (Allen, 1965: 14-16) and the graph represents segments with this value, among others, in PE (Gimson, 1980: §8.08). While this gives a preliminary indication of the phonetic nature of the segments represented by the graph in the Cp. MS, an investigation of data from other sources suggests that c in fact represents a wider range of segments.

1 c in foot-initial position

1.1 c appears in this position in forms in Cp. for which
(a) The cognate forms are spelt with k (Prokosch, 1939: §21);

(b) The PE reflexes contain [k] (Gimson, 1980: §8.08);

(c) Occasionally, variant spellings in ch and k appear in Cp. and other OE MSS (see the entry under k in Bosworth and Toller, 1898; Campbell, 1959: §427, ft.1).

(a) The cognate evidence allows the reconstruction of PG [k], which, when not subject to the influence of the segments that surround it (Campbell, 1959: §427), remains as such in OE.

(b) This value is supported by the PE reflexes of the form concerned.

(c) The appearance of occasional variants in k are of purely graphic significance.

Thus c represents [k] in the forms in (2.1.144).

(2.1.144)

camellea (chamæleon) : wulfes camb 'wild teazle' 355
(OS camb, OHG camp, PE 'comb')

culinia : cocas 'cooks' 620
(Vulg. Lat. cocus, OHG koch)

calculus : calc 'chalk' 345
(OHG calc, chalch, Lat. calculs)

carula (garrula) : crauue 'crow' 401
(OHG kraa)

mappa : cneoript 'knee curtain' 20
(OHG knio)

(h)arpago : clauuo 'claw' 211
(OS clauua, OHG klava)

butio : cyta 'kite' 333
(MHG kuse)

claviculærius : caeghiorde 'key keeper' 490
(OFr. kei)

caldaria : cetil 'kettle' 405
(Lat. catillus)

The form

ascop( extraordinarily)r(a) : kylle 'leather bottle', 231
(ON kyliir)

is the only example of the use of k to represent this segment to be found in the data selected from Cp.

1.2 The graph c also appears in initial position in forms in Cp. for which

(a) The Germanic cognates are spelt with k (Prokosch, 1939: §21);

(b) The PE reflexes contain the segment [tʃ] (Gimson, 1980: §8.11);

(c) There are no alternative spellings for the segments concerned in Cp. or any other OE MSS (Campbell, 1959: §427).

(a) The cognate forms allow the reconstruction of the PG segment [k] which, apparently influenced in Pre-OE by the nature of the following vowel, became palatalised to [k'] and eventually assibilated to [tʃ] at some time during the OE period (Campbell, 1959: §§427; 432). Campbell (1959: §486) maintains that
'The period at which fronted stop consonants passed into affricates is uncertain'.

The present account assumes, as in the case of the voiced geminate (§2.1.16.1.2), that assibilation has in fact taken place in the dialect represented by the Cp. MS, but this is by no means certain (see Campbell, 1959: §486 and references therein).

(b) This development is certainly supported by the evidence of the PE reflexes, in which assibilation has definitely occurred.

(c) The fact that no k spellings appear for such forms in any OE MSS may be of some significance. If, as would seem unlikely, this cannot be put down to mere chance, clearly the velar and palatal segments were perceived as distinct by the OE scribes, and although the OE spelling system did not normally distinguish between them, occasional attempts were made to do so. The fact that the same graph can represent two segments that are phonetically quite distinct (a palatal affricate and a velar stop) can be explained with reference to the historical development of the segment concerned, and that of the OE orthographic system. The segment [tf] did not exist in the sound system of Latin (Allen, 1965: Ch.1), and therefore no graph was readily available to represent the sound when it developed in OE.

Furthermore, as established in §2.2.2.2, the phonemic status of the velar and palatal segments was relatively marginal until the late OE period. Thus c could be used for both [tf] and [k] without any great risk of ambiguity. Once more, the written language can be seen to be slow in reflecting developments in the spoken, and it is not until the Norman Conquest that spelling conventions were
introduced to give [tf] separate representation.

Thus c represents [tf] in the forms in (2.1.145)

(2.1.145)

conabulum (cunabula) : cilda trog 'child's bed'
(OHG kind)

bruchus : cefer 'cheever, beetle'
(OHG keer, kevaro, OS kevar)

coagolum (-ulum) : ceselyb 'rennet, cheese-drug'
(OHG kasi, Lat. caseus)

2 c in foot-final position, and before voiceless consonants

2.1 c appears in forms in Cp. for which

(a) The Germanic cognates have k; and hh or ch in OHG
(Prokosch, 1939: §§21, 26);

(b) The PE reflexes have the segment [k] (Gimson, 1980:
§8.08);

(c) c seems to be the only spelling that appears in the extant
OE material (Campbell, 1959: §428).

(a) The cognate evidence suggests PG [k] which, unless affected
by the vowel that precedes it (see 1.2.2), remains as [k] in OE.

(b) That the segment should have this realisation in the forms
concerned is supported by their PE reflexes.

Thus c represents [k] in the forms in (2.1.146).

(2.1.146)
ciconia : *storec* 'stork' 465  
(OHG *storah*, Icel. *storkr*)

jungula : *geocboga* 'yolk' 15  
(Go. *juk*, OHG *joh*)

color : *aac* 'oak' 535  
(OFr., OS *ek*, OHG *eich*)

2.2 c also appears in forms in Cp. for which

(a) The Germanic cognates have k; and hh or ch in OHG  
(Prokosch, 1939: §§21; 26);

(b) The PE reflexes contain [tʃ] (Gimson, 1980: §8.11);

(c) c is the spelling that uniformly appears in OE MSS  
(Campbell, 1959: §428).

(a) On the evidence of the cognate forms, PG [k] can be  
reconstructed which, influenced by the preceding vowel, becomes  
palatalised to [k'] (Campbell, 1959: §428) in Pre-OE. In certain  
cases the segment assimilates to [tʃ] (ibid: §433), and as suggested  
in 1.2, this account will assume that assimilation has taken place in  
the dialect represented by the Cp. MS.

It can therefore be assumed that c represents [tʃ] in the forms  
in (2.1.147).

(2.1.147)

bariulus : *reagufinc* 'some kind of bird' 283  
(OHG *finco*, PE 'finch')

acisculum : *piic* 'pike, pointed instrument' 49  
('a Celtic word': Bosworth and Toller, (1898))

antedo (antidotum) : *wyrdrenc* 'herb drink' 116  
(OHG *trankjan*, Go. *drakjan*, PE 'drink, drench')
2.3

In certain forms c appears in morpheme-final position after a graph representing a front vowel (which in some cases has apparently developed from a Pre-OE diphthong (see §2.1.2.1.2.1; 2.6; 3.5; §2.1.3.1.3; §2.1.4.2.4) and the PE reflexes contain the stop rather than the affricate. In those cases where the second element of the diphthong has been lost, it can be assumed that a palatalised stop is represented, the segment having been affected by a 'second wave' of palatalisation. (Kuhn, 1970: §3.33).

Thus [k'] is represented by c in the forms in (2.1.148).

(2.1.148)

cuculus : gac 'cuckoo, gowk' 618
(OHG gouch, gauch, OE geac)

ambila : lac 'leek, onion' 154
(OHG louch, OE leac)

caulterium : merciseren 'branding iron' 362
(OHG marcha, marca, OFr. merke, PE 'mark')

It can also be suggested that [k'] is attested after front vowels other than [i] and those which have arisen through the process of i-mutation (i.e. in environments other than those in which [tʃ] is attested (2.2)). As noted in §2.1.14.2.2 (and see Campbell, 1959: §435), this claim is based largely on the fact that an equivalent process can be seen to affect the reflex of PG [y] in this position. Due to the fact that the resulting segment merges with an existing phoneme in the language, the reflex of PG [j], the
occurrence of this development can be recovered from the PE data (see ft. 80). The fact that such a development would seem to be theoretically phonetically natural, and also that a similar alternation is attested in PE (Gimson, 1980: §8.08.3) lends further weight to the suggestion that \( c \) should represent \([k']\) in the forms in (2.1.149).

(2.1.149)

actuarius : \textit{wræc} 'what is driven' 62
apparatum : \textit{gePrec} 'throng' 190

(OE \textit{gepræc})

3 \( c \) in foot-medial position between voiced segments.

3.1 \( c \) appears in this position in forms in Cp. for which

(a) The cognate forms are spelt with \( k \) (ON, OS); \( ch, hh \) (OHG) (Prokosch, 1939: §§21; 26);

(b) The PE reflexes have \([k]\) (Gimson, 1980: §8.08);

(c) \( c \) is the regular spelling found in OE MSS (Campbell, 1959: §429).

(a) From the evidence of the cognates, PG \([k]\) can be reconstructed, which, unless it is influenced by the segments that surround it (see 3.2), develops into \([k]\) in OE.

(b) The PE reflexes support the suggestion that \( c \) should represent the segment \([k]\) in the forms in (2.1.150).

(2.1.150)
culinia : cocas 'cooks' 620
(Vulg. Lat.ocus)
cucuma : fyrscrucr 'fire-pot' 621
(PE 'crouke')

3.2 c also appears in foot-medial position in forms in Cp. for which

(a) The cognates are spelt with k (ON, OS, OFr.); ch, hh (OHG)
(Prokosch, 1939: §§21; 26);
(b) The PE reflexes have [tʃ] (Gimson, 1980: §8.11);
(c) c invariably appears in OE MSS (Campbell, 1959: §429).

(a) Again, the segment concerned is PG [k] which developed to the
palatal segment [k'] in Pre-OE, and subsequently underwent
assibilation to the affricate [tʃ] (Campbell, 1959: §433). The present
account assumes that assibilation had taken place in the dialect
represented by Cp. (see 1.2).

(b) The PE reflexes support the suggestion that c represents [tʃ]
in the forms in (2.1.151).

(2.1.151)
cariscus : uuice 'witch elm' 36
æsculus : boece 'beech' 93
(OS boke, OHG buohe, ON bok)
arcliatros : healecas 'sorcerers' 218
(Go. lekeis, OHG lahhh, cf. PE 'leech')

3.3 As discussed in 2.3 above, it can be claimed that a palatalised
stop [k'] appears in the forms in (2.1.152).

(2.1.152)

calciculium : ieces suræ 'cuckoo sorrell' 380
(OE geac, gaec (2.1.148), OHG gouch, gauch)

rastrum : race 'rake' 25
(OS raka, Go. rikan, ON reca, OHG rehho)

4 c in gemination: cc

4.1 The geminate sequence cc appears in forms in Cp. for which

(a) The W-G cognates have kk (OS); cch, kh, kch (OHG)

Prokosch (1939: §§30; 26);

(b) The PE reflexes have [k] (Gimson, 1980: §8.08);

(c) OE spellings are uniformly cc (Campbell, 1959: §§428, 429).

(a) On the evidence of the cognates, the W-G sequence [kk] can be reconstructed. When this is not subject to the influence of surrounding vowels (see 4.2) the sequence develops into OE as [kk].

(b) The PE reflexes do not contradict this suggestion, although consonant gemination is no longer evident at that stage in the history of the language (see ft.96).

Thus cc represents [kk] in the forms in (2.1.153).

(2.1.153)
anate (anas) : cladersticca 'rattle' 171
(OHG steccho, PE 'stick')
circinni : windeloccas 'curly hair' 473
(OHG locc, loc)

4.2 In other instances, cc appears in forms in Cp. for which

(a) The cognates have kk (OS) or cch, kh, kch (OHG)
    (Prokosch, 1939: §§30; 26);
(b) The PE reflexes have [tf] (Gimson, 1980: §8.11);
(c) cc is the usual spelling that appears in OE MSS, (but see
    ft. 100).

(a) In this case W-G [kk] can be reconstructed, but it is evident
    that the sequence will be influenced by the surrounding segments,
    palatalise to [kk'] and eventually assibilate to [tʃtʃ] (Campbell,
    1959: §429).

(b) That cc should represent a palatal affricate is supported by
    the evidence of the PE reflexes.

    Thus cc represents [tʃtʃ] in

    alligeo (-ego) : recceo 'to stretch, narrate', 139
    Go. ufrakjan, OS rekkiян 100 of PE 'reach'.

5 The graph c also occasionally appears in forms in Cp. for which

(a) The Germanic cognates are spelt with h;
(b) The PE reflexes do not usually contain a corresponding
    segment (with the exception of some non-standard
dialects);

(c) h and g are more frequently attested spellings in Cp. and other OE MSS (Campbell, 1959: §57.3).

Clearly the same segment as discussed in §2.1.14.2.1; 2.2, is represented. The spelling variation is probably best accounted for as resulting from the influence of Irish scribal practice. Evidently the segments [ç] and [χ] did not occur in Classical Latin (Allen, 1965: 43). While h presented itself as a reasonable choice of symbol to represent the voiceless fricative in OE, scribes recording the same segment in Old Irish used the sequence ch (Campbell, 1959: §55)102. Apparently, however, the Old Irish sequence cht was being replaced by ct (ibid: §573 and references therein) and this may well explain the appearance of c for [ç] when it occurs before [t] in the forms in (2.1.154).

(2.1.154)

commis(s)ura : flyctielesa 'a joining, tying together' 491
(OS fluht, OHG flucht, OE flyht, OFr. flecht)

cratem : flecta 'a hurdle' 600
(OE fleohtan 'to weave, plait', OHG flehtan, Go. flahtom)

The initial ch in the form

citropodes : chroha 'crock, pitcher', 461

for what is clearly PG [k], OE [k] (see the discussion of the same entry in §2.1.14.3), is evidently the result of scribal confusion or error, possibly influenced by the fact that the sequence can be used to represent segments with this value in the Latin
orthographic system (Campbell, 1959: §55, ft.2) ¹⁰³.

In the form

coxa : thegh 'thigh', 556

(OFr. thiach, OHG dioh)

the gh spelling for PG [x], Cp. [ç] ($2.1.14.2.2$) is best explained with reference to the phonemic status of the segment concerned. $2.1.2.1.2.2$ established that there is no phonemic contrast between the reflexes of PG [x] and [y] in this position. This leads to the possibility of interchange between the graphs h and g ($2.1.14.2$; $2.1.15.2$) and the use of both can be regarded as a 'compromise' spelling (Campbell, 1959: §444).

2.1.18 b

The graph b is used to represent a voiced bilabial plosive in the spelling systems of Latin and PE (see 2.1.155).

(2.1.155)

<table>
<thead>
<tr>
<th>PE</th>
<th>big</th>
<th>symbol rib</th>
<th>(Gimson, 1980: §8.06)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin</td>
<td>bos</td>
<td>febris tribulare</td>
<td>(Allen, 1965: 21)</td>
</tr>
</tbody>
</table>

An investigation of available evidence, however, reveals that this is not the only segment the graph can represent in the Cp. MS. As with the analysis of the graphs h, g, and ç in $2.1.14$-17 above, it is useful to sub-divide the discussion according to the various
positions the symbol can occupy in the foot.

1 \( b \) in foot-initial position

\( b \) appears in this position in forms in Cp. for which

(a) The cognate forms in Germanic languages are spelt with \( b \) (Prokosch, 1939: §18: §24.2);\(^{104}\)

(b) The PE reflexes contain the segment \([b]\) (Gimson, 1980: §8.06);

(c) \( b \) is the spelling that invariably appears in the relevant forms in OE MSS (Campbell, 1959: §55).

(a) On the evidence of the cognate forms, the PG segment \([\beta]\) can be reconstructed, and this is confirmed by 'inverted reconstruction' from I-E [\( b^b \)] (Wright, 1954: §131). In accordance with the tendency towards 'lenition' and 'strengthening' that affects the PG obstruents as they develop into Pre-OE, it can be predicted that by virtue of its position in the foot \([\beta]\) will 'strengthen' to a stop \([b]\) in this environment (2.1.122a).

It is traditionally assumed that, unlike its velar counterpart (see §2.1.15.1.1), the labial consonant is sufficiently prone to strengthening to have undergone this development by the Pre-OE period (Prokosch, 1939: §18; §24).

(b) That \( b \) should represent \([b]\) in the forms concerned is supported by the evidence of their PE reflexes, and

(c) the fact that no variant spellings are attested in extant OE MSS further confirms this conclusion.

Thus \( b \) represents \([b]\) in the forms in (2.1.156).
(2.1.156)

buxus : box 'box tree' 332
(OHG buhs)

castanea : cistenbeam 'chestnut tree' 374
(OS bom, Go. bagms, OFr. boum, OHG poum)

2 b after nasal consonants: m

The graph b appears in this environment in forms in Cp. for which

(a) The cognates are spelt with b (Prokosch, 1939: §24) 105;
(b) No corresponding segment occurs in the PE reflexes
(Gimson, 1980: §8.21); 106
(c) b is the only spelling that appears in Cp. or any other OE
MS (Campbell, 1959: §55).

(a) Again, the cognate evidence suggests that the PG segment [β] < I-E [bh] can be reconstructed, which may be expected to strengthen to a stop in this environment ($2.1.15.4.1$ and ft. 90).

(b) The PE reflexes do not directly support this suggestion, as no phonetic segment corresponds to that represented by b in the forms under consideration 107. Available evidence, however, suggests that the segment was not lost until after the OE period (Gimson, 1980: §8.24).

(c) There is again no variation in the spellings attested in OE MSS, so it can be claimed that b represents [b] in the forms in (2.1.157) with a reasonable degree of certainty.
(2.1.157)

camellea (chameleon) : wulfes camb 'wild teazle' 355
(OS camb, OHG kamp, kampo, Icel. kambr)

ambages : ymbsumpe 'a digression' 147
(OS umbi, OFr. umbe, OHG umpi)

3  b in foot-final position: before voiceless consonants

3.1 b appears in this position in forms in Cp. for which

(a) The cognate forms are spelt with b (Go., OHG); f (ON); f,
    b (OS) (Prokosch, 1939: §18; §24)108;

(b) The PE reflexes contain the segment [f] (Gimson, 1980:
    §8.15);

(c) An alternative spelling found in Cp. and other OE MSS is f
    (Campbell, 1959: §57.2:§444).

(a) From the evidence of the cognate forms, the PG segment [β]
can be reconstructed. This apparently devoiced to [f] in Pre-OE,
foot-final position being conducive to the strengthening process
(2.1.122a) Presumably the resulting segment became identified with
that developed from PG [f], but it is possible that at first there
was some distinction between them (Campbell, 1959: §444, ft.2).

(b) That b should represent [f] in the forms in (2.1.158) is
supported by the nature of the PE reflexes. The segment has
clearly developed a labio-velar realisation by this stage 109.

(c) The appearance of alternative spellings in f can be explained
with reference to the phonemic status of the segments concerned. (§2.2.2.3.3). As a result of the devoicing process described in (a) above, there is no contrast between the OE reflexes of the PG voiced and voiceless labial fricatives in this environment, and it is therefore possible that the graphs $f$ and $b$ can be used interchangeably. (§1.3.2.1.2.1.ii). The $b$ spellings are evidently 'archaic', reflecting the language at an earlier stage in its development.

Thus $b$ represents $[f]$ in forms such as that in (2.1.158).

(2.1.158)

cespites : tyrb  'turf'  452  
(OHG zurba)

3.2 The graph $b$ also appears in foot-final position in forms in Cp. for which

(a) The cognates are spelt with $f$ (Go., ON, OHG, OS)  
(Prokosch, 1939: §19);  
(b) The PE reflexes contain the segment $[f]$ (Gimson, 1980: §8.15);  
(c) $f$ is attested as an alternative spelling in Cp. and other OE MSS (Campbell, 1959: §57; §444).

(a) On the evidence of the cognate forms the PG segment $[f]$ may be reconstructed, which can evidently be expected to remain a voiceless fricative in this context in Pre-OE (2.1.122).

(b) The PE reflexes support this assumption.
(c) The fact that f spellings occur more frequently in the forms concerned in the extant OE material can be explained with reference to the phonemic status of the voiced and voiceless labial fricatives. As noted in §2.2.2.3.3, there is no phonemic distinction between these segments in this context, and it is therefore possible that b spellings can occur for the reflex of PG [f]. The graphs f and b have in fact become equivalent.

Thus b represents [f] in the form in (2.1.159).

(2.1.159)

mappa : cneoribt 'knee-curtain, rug' 21
(OHG refta)

4 b in foot-medial position and between voiced segments

4.1 b appears in this environment in forms in Cp. for which

(a) The Germanic cognates are spelt with b (Go., OHG), f (ON), b (OS), v (OFr.) (Prokosch, 1939: §24);
(b) The PE reflexes contain the segment [v] (Gimson, 1980: §8.15);
(c) f is attested as an alternative spelling in Cp. and occasionally fb and bf appear in other OE MSS (Campbell, 1959: §57: §444).

(a) On the evidence of the cognates the PG segment [β] can be reconstructed which, it can be assumed, would remain voiced in the course of its development into Pre-OE, the foot-medial environment
not being conducive to strengthening (2.1.122a).

(b) The PE reflexes support this assumption, the realisation of the segment presumably having changed from bilabial to labio-velar at some stage in the history of the language (see 3.1 and ft.109).

(c) The alternative spellings in Cp. and other OE MSS can be explained with reference to the phonemic status of the segments concerned. Due to developments discussed in §2.1.19.3.1, it appears that the contrast between the reflexes of the PG voiced and voiceless labial fricatives has been lost by the time of the Cp. dialect and the graphs  and  that had until a short while previously conveyed the distinction have become equivalent. The 'compromise' spellings in  and  that appear in other OE MSS (Campbell, 1959: §444) can be explained as the attempts of the scribe to represent a recently developed allo-archiphoneme (see §2.2.2.3.2).

Thus  represents [v] in the forms in (2.1.160).

(2.1.160)

convincens : oberstalende 'to confute, convict'  506
(OE offer, Go. ubar, OS ubar, OHG ubar, PE 'over')

arpia :  ceber 'beetle, cheever'  214
(OS cever, OHG cevar, cevaro)

æquipensum :  ebnwege 'even weight'  98
(OS eban, Go. ibns, OHG eban)

actionari(i)s :  folcerteubum 'people's governor'  48
(PE 'reeve', OHG ruoba, ruova)

calculus, ratio
vel sententia  :  teblstan 'dice'  349
4.Ł

It is also possible to claim that the labial fricative became sensitive to the nature of the segments that surround it. As noted in $2.1.1.2.3; $2.1.1.2.2; $2.1.4.2.3; $2.1.9.4.1; $2.1.10.2, the appearance of certain vowel spellings, especially digraphs, for the reflexes of the PG short front monophthongs before consonants followed by back vowels, indicates that the medial consonant has become velarised, presumably influenced by the back vowel in the following syllable. As the digraph spellings only appear for the reflexes of PG short nuclei, it can be deduced that the consonant is only affected if it occurs in the same syllable as the stressed vowel. It is, of course, theoretically possible that velarised consonants are also attested after short back (or even secondary front) vowels, although there is obviously no means by which this can be indicated in the spellings that appear. The present account, however, accepts that this is likely to be the case.

Thus b represents [w] in the forms in (2.1.161)

(2.1.161)

ære alieno: geabuli 'tribute' 96 (M. Lat. gabulum, Ital. gabelle, Sp. gabela)
colicus (colchicum): eoburthrote 'carline thistle' 558 (cf. 'wild boar', OHG ebur, ép. efbor)

and also presumably

alietum (halietos): spærhabuc 'sparrowhawk' 158 (OE hafoc, heafoc, OHG hapuch, habicht)
circinno (circinnus): gabulrond 'a pair of compasses' 467
5  b in gemination bb

5.1 The geminate sequence bb appears in forms in Cp. for which

(a) The W-G cognates (see ft. 94) are spelt with bb (Prokosch, 1939: §§22; 24);

(b) The PE reflexes have [b] (Gimson, 1980: §8.15);

(c) Occasionally b spellings appear in OE MSS (Campbell, 1959: §66)

(a) The cognate evidence suggests PG [ββ] which, in view of the fact that gemination is a 'strong' environment, develops to [bb] in Pre-OE.

(b) The fact that a stop rather than a fricative appears in the PE reflexes supports the claim that the sequence was geminate in OE, as we should expect PE [v] to develop from an original simplex [β] (see 4.1).

(c) In medial position, the occasional b spelling for original geminates can be explained as the result of simple 'graphic simplification', thus bb represents [bb] in the forms in (2.1.162).

(2.1.162)

affectui : megisibbe 'kinship, relationship' 109

cinoglosa (cynoglossos) : ribbe 'the herb hound's tongue' 469
Where b appears for an original PG geminate in foot-final position, the frequency with which the simple graph appears (Campbell, 1959: §66) suggests that the sequence [bb] has become phonetically simplified to [b], and there is no longer any phonemic contrast between geminate and simplex in this position (§2.2.2.3.4).

For this reason, therefore, the graphic sequences bb and b have become equivalent, and are interchangeable in this context. The fact that as a result of this development a contrast evolves between the segments represented by b and f in final position (§2.1.19), albeit between voiced stop and voiceless fricative rather than the former contrast between the reflexes of the PG voiced and voiceless fricatives respectively, presumably hastens the adoption of f as the universal symbol for the fricative segment (Campbell, 1959: §57). The general confusion that is characteristic of the use of the graph b in Cp. is not surprising in view of the fundamental changes that affect the OE obstruent system in the late prehistoric - early literary period.

Thus b represents [b] in the forms in (2.1.163).

(2.1.163)

chartamo (cardamum): lybcorn 'a grain of purgative effect' 459
(OE lybb, OHG luppi, Go. lubja)

costa: rib 'rib' 585
(OE rib, OHG rippa)

The graph b, therefore, can be used to represent a wider range of segments in the Cp. MS than may at first be supposed, given its use in the spelling systems of PE and Latin. Its use for
both voiced and voiceless fricative is possible given the phonemic status of the segments involved, as, presumably, is its use for velarised and non-velarised segments in medial position. Its appearance for the stop [b] in initial and post-nasal position is again possible as the nature of the segment can automatically be predicted from its context, and although the fact that the graph is attested for both stop and fricative in foot-final position may have proved problematical had this usage been retained throughout the OE period, the temporary confusion can be explained with reference to the changes that are apparently affecting the obstruent system of OE at the period contemporary with (or immediately preceding) the composition of the Cp. MS.

2.1.19  \( f \)

The graph \( f \) is generally used to represent a voiceless labio-dental fricative in the spelling systems of PE and Latin, see (2.1.164)

(2.1.164)

<table>
<thead>
<tr>
<th>PE</th>
<th>fork</th>
<th>defend</th>
<th>leaf</th>
<th>fry</th>
<th>raft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin</td>
<td>febris</td>
<td>foris</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Gimson, 1980: §8.15)

(Allen, 1965: 34-5)

Occasionally, it represents the voiced equivalent [v]: cf. PE 'of'.

An examination of available evidence reveals that the graph
represents a wider range of segments in the Cp MS.

1 \( f \) in foot-initial position.

In this position \( f \) appears in forms in Cp. for which

(a) The cognates are spelt with \( f \) (Prokosch, 1939: §§19;27);
(b) The PE reflexes contain the segment \([f]\) (Gimson, 1980: §8.15);
(c) \( f \) is the only spelling that appears in the OE MSS (Campbell, 1959: §57; §444).

(a) On the evidence of the Germanic cognates, the PG segment \([f]\) can be reconstructed, which can also be recovered by 'inverted reconstruction' from I-E \([p]\) (Prokosch, 1939: §19). It can be expected that the fricative would remain voiceless in this position (2.1.122a).

The PE reflexes support this suggestion, and clearly \( [f] \) is the segment represented in the forms in (2.1.165).

(2.1.165)

amites : fugultreo 'pole for spreading bird nets' 150
(PE 'fowl', OS fugal, OFr. fugel, Go. fugile)
adsida : flood 'flood, tide' 1

cucuma : fyrcruce 'fire cruse, pot' 621
(OFr. fior, fiur, PE 'fire' OHG fiur, OS fiur)

2 \( f \) in foot-final position, and before voiceless consonants.

2.1 In this environment, \( f \) appears in forms in Cp. for which

(a) The cognates are spelt with \( f \) (Go., ON, OHG, OS)
(b) The PE reflexes contain the segment [f]

(c) b is attested as an alternative spelling in some OE MSS.

In this case we are presumably dealing with the same segment as that discussed in §2.1.18.3.2 above, which gives the reasons for the suggestion that the segment [f] should occur in forms such as those in (2.1.165), and an explanation for the alternation between f and b spellings in this environment.

Thus f represents [f] in the forms in (2.1.166).

(2.1.166)

curtina : wagryft 'wall-hanging, curtain' 624
(OHG refta, cf. Cp. cneoribt, 20)

coliferte (collibertus) : gepofta 'companion' 3
(OHG gidofto)

ars plumaria : uuyndecreft 'the art of weaving' 217
(OFr. kreft, OS, OHG kraft, PE 'craft')

2.2 f also appears in foot-final position in forms in Cp. for which

(a) The Germanic cognates contain b (Go, OHG), f (ON), b (OS);

(b) The PE reflexes have [f];

(c) Alternative b spellings appear in Cp. and other OE MSS.

Similarly, the same segment as discussed in §2.1.18.3.1 would seem to be represented. Once more the reasons for the spelling variation and the motivation for suggesting the value [f] for the segment concerned are given in §2.1.18.

Thus f represents [f] in the forms in (2.1.167).

(2.1.167)
convexu(m) : hualf 'curved' 498  
(OHG hualb, OE hwealf)

clima : haf 'half' 489  
(Go. halba, OS half, OHG halb, OE healf)

ballista : staflieore 'engine for throwing stones' 263  
(OE staf 'stick', Go. stab, OS staf, OFr. stef, PE 'staff')

3  \( f \) in foot-medial position, between voiced segments

3.1  \( f \) appears in this environment in forms in Cp. for which

(a)  The cognates are spelt with \( f \) (Go., ON, OS), \( f \), \( v \) (OHG)  
    (Prokosch, 1939: §§19; 27);

(b)  The PE reflexes have \([v]\) (Gimson, 1980: §8.15);

(c)  \( f \) would appear to be the only spelling that appears in OE  
    MSS 112 (Campbell, 1959: §444).

(a)  The cognate forms allow PG \([f]\) to be reconstructed in this  
    position, which, as this environment is one which encourages  
    'lenition', we may expect to develop to \([v]\) in Pre-OE (2.1.1 22a).

(b)  The PE reflexes would seem to support this assumption. Thus  
    it can be concluded that \( f \) represents \([v]\) in forms such as that in  
    (2.1.168).

(2.1.168)

cerefolium : cerfelle 'cervil' 457  
(OHG kerfila, Lat. cerfolium)
3.2 The cognate forms are spelt with b (Go., OHG), f (ON), b (OS), v (OF);
(a) The PE reflexes have [v];
(b) Cp. and other OE MSS contain the graphs b, bf, fb in equivalent forms.

For a discussion of the motivation behind the suggestion that [v] should be the segment represented, and an account of the reasons behind the spelling variation attested, see §2.1.18.4.1.

It is clear that f represents [v] in the forms in (2.1.169).

(2.1.169)

altrinsecus : on ba halfe 'half' 121
(Go. halba, OS halb, OS half)
aquatis : efnum 'even' 92
(OS eban, Go. ibns, cf. Cp. ebnwege 98)
censores : geroefan 'reeve' 436
(OHG ruoba, ruova, cf. Cp. folcgerabum, 48)
bruchus : cefer, 'cheever' 326
(OS kevar, OHG kevar, kevaro, cf. Cp. ceber, 214)

3.3

As noted in §2.1.18.4.2, it is reasonable to suppose that a velarised segment is represented in forms where the consonant appears between a short vowel and an unstressed back segment.

f therefore presumably represents [w] in

scisca : eoforprote 'carline thistle', 27
(OHG ebur, Cp. 559 eoburprote).

Finally, f appears in Cp. in a form for which
(a) The cognates have the spelling f;
(b) The PE reflex is [p];
(c) p is the more usual spelling in OE MSS.

Apparently PG [f] has developed to [p] in the relevant environment (i.e. before [s]) at some stage in the history of the language. According to Campbell (1959: §415), this change is one of those that occurred 'comparatively late in the Primitive Old English period'. While it is possible to claim that f represents [f] in the form

\[ \text{crabro : wafa 'wasp', 603} \]
\[ \text{(cf. OHG wafsa, wefsa),} \]

the fact that the spelling would in all probability be slow to reflect this development suggests that [p] may equally well be represented. This development results in the (at least temporary) loss of contrast between [p] and [f] before [s], and may explain the occasional interchange of the graphs f and p in other environments (see §2.1.30.4).

The graph f therefore represents a wider range of segments than is originally suggested by its use in the spelling systems of PE and Latin. That it can represent both voiced and voiceless fricatives, and both velarised and non-velarised segments, can be easily explained with reference to the phonemic status of the segments involved.
The graph \( d \) is used in the spelling systems of PE and Latin to represent a voiced alveolar stop, see (2.1.170).

(2.1.170)

\[
\begin{array}{l}
\text{PE} & \text{do} \\
\text{leader} & \text{old} \\
\text{Latin} & \text{decem} \\
\text{ponder} & \\
\end{array}
\] (Gimson, 1980: §8.07)

(Allen, 1965: 20-21)

A consideration of evidence from other sources, however, reveals that this is only one of several phonetic segments represented by the graph in the Cp. MS.

1.1 \( d \) appears in forms in Cp. for which

(a) The cognate forms in West-Germanic languages contain \( d \) or (OHG) \( t \) (Prokosch, 1939: §24.1; §26.3);\(^114\);

(b) The PE reflexes contain [d] (Gimson, 1980: §8.07);

(c) \( d \) is the only spelling that appears in the relevant forms in OE MSS (Campbell, 1959: §50.6).

(a) On the evidence of the Germanic cognates, the PG segment [\( \delta \)] can be reconstructed (this is also supported by 'inverted reconstruction' from I-E [\( d/h \)]: Wright, 1954: §131). Given that PG [\( \delta \)] developed to [\( d \)] in all positions in the W-G languages (ibid: §133), (the dental series being most prone to the process of 'strengthening' by virtue of their place of articulation, see (2.1.122b)), it can be assumed that \( d \) represents [\( d \)] in the forms in (2.1.171).
(b) The PE reflexes support this assumption, as does

c) the fact that no variant spellings are attested in the extant OE material.

Thus $d$ represents [d] in the forms in (2.1.171).

(2.1.171)

<table>
<thead>
<tr>
<th>Word 1</th>
<th>Word 2</th>
<th>Meaning</th>
<th>OE References</th>
</tr>
</thead>
<tbody>
<tr>
<td>broel</td>
<td>deortuun</td>
<td>'deer enclosure'</td>
<td>(OHG <em>tior</em>, OS <em>dier</em>, Go. <em>dius</em>)</td>
</tr>
<tr>
<td>antedo (antidotum)</td>
<td>wyrtdrenc</td>
<td>'drink of herb potion'</td>
<td>(OHG <em>trankjan</em>, Go. <em>draggjan</em>)</td>
</tr>
<tr>
<td>bra(c)hiale</td>
<td>gyrdile</td>
<td>'girdle'</td>
<td>(OHG <em>gyrtill</em>, ON <em>gyrōill</em>)</td>
</tr>
<tr>
<td>casso (incassum)</td>
<td>idle</td>
<td>'idle'</td>
<td>(OS <em>idal</em>, OHG <em>ital</em>)</td>
</tr>
<tr>
<td>adtonitus</td>
<td>hlysnende</td>
<td>'to listen'</td>
<td>1 (to listen)</td>
</tr>
<tr>
<td>actionabatur</td>
<td>scirde</td>
<td>'to bring a charge against'</td>
<td>2 (to bring a charge against)</td>
</tr>
</tbody>
</table>

1 PG [6]: Campbell (1959: §750).
2 PG [5]: (ibid §731g).

1.2

Given the existence of digraph spellings for Pre-OE short front monophthongs (see §2.1.18.4.2 and the references therein), it can be assumed that a velarised segment [d] occurs in the form in (2.1.172).

(2.1.172)
crepacula : cleadur 'rattle' 599

The appearance of u for PG [i] in the form

cardiolus : uudusnite 'a type of bird', 428

before [d̪] followed by an unstressed back vowel can also be cited
as evidence that the consonant has developed a velarised
realisation ($\S$2.1.6.4).

As noted in $\S$2.1.18.4.2, it is not unreasonable to suggest that
[d̪] should also be represented in the forms in (2.1.173).

(2.1.173)

carpella : sadul boga 'saddle bow' 377
(OHG satal, satul)

auspiciantur : halsadon ¹ 'to foretell' 251

couluissent : suornadun ¹ 'to coalesce' 518

¹ Campbell (1959: §750)

although this is in no way indicated by the spellings that appear.

2 d also appears in forms in Cp. for which

(a) The cognate forms are spelt with p, š (ON), th (OS), p
(Go.), d (OHG) (Prokosch, 1939: §19; §27);

(b) The PE reflexes contain the segment [ð] or [§] (Gimson,
1980: §8.16);
(c) Alternative spellings in Cp. and other OE MSS include th, ð, and þ (Campbell, 1959: §57.5; 6).

(a) The cognate evidence suggests PG [θ] which, in accordance with the principles of lenition discussed in (2.1.122), can be expected to remain voiceless in initial and final position, but 'weaken' to [ð] foot-medially.

(b) The evidence of the PE reflexes supports the suggestion that a fricative rather than a stop is represented in the forms concerned.

(c) The number of alternative spellings in Cp. and other OE MSS, as well as the admittedly confusing use of d to represent both stop and fricative segments, can be explained with reference to the development of the OE phonological and orthographic systems. Evidently, dental fricatives such as [ð] and [θ] did not exist in the sound system of Classical Latin (Campbell, 1959: §55 ft.2; Allen, 1965: 26). The OE scribes, therefore, were faced with the problem of representing a segment for which the roman alphabet did not readily provide a suitable graph. The variation in the spelling of OE forms containing a dental fricative segment apparently reflects the confusion experienced by the scribes as they experiment with different ways of representing the sound. As noted by Campbell (1959: §55), the symbol d is favoured in early MSS such as Cp. but was gradually replaced by other graphs, presumably because it was considered undesirable to represent two phonemically distinct segments, [d] and [θ] (see §2.2.2.4), by the same symbol.
2.1 Thus \( d \) represents \([\delta]\) in the forms in (2.1.174)

(2.1.174)

bitorius :  
erdling 'farmer'

cauumiae:  
ordrest 'a lying on the ground  
(Pe 'earth', OE eorde, eorpe, OHG erda, Go. airda)

2.2 and \([\delta]\) in the forms in (2.1.175)

(2.1.175)

ab euro:  
estan sudan 'southeasterly'

(OFr. suth, OS suthan, OHG sundan cf. Pe 'southern')

1 As an original inflectional affix is used with a derivational function (Campbell, 1959: §668) it can be assumed that the final syllable in this form is unstressed, and that the fricative is foot-medial and therefore voiced ($2.3.2.1; 5.1$).

2.3 The velarised segment \([\delta]\) is in all probability represented in the form

fundus:  
boden 'bottom', 10

(OE(W-S) botm, OS bodom, OFr. bodem, OHG bodem)$^{115}$.

3 In

appetitus:  
gidsung 'avarice, desire', 184

(OE gitsung, gitsian 'to covet, desire'; OHG git)

the evidence of the regular OE spellings and that of the cognate
forms suggests an original PG [t]. A possible explanation of the appearance of d in this case is that due to the fact that [d] devoices before [s] (Campbell, 1959: §480.3), there would be no contrast between [d] and [t] in this environment. The symbols d and t would therefore become equivalent. Given the fact that the segments contrast in the vast majority of positions in the language (§2.2.2.5.1.7), the symbols are not normally confused, but the occasional appearance of d for t in such forms can be explained with little difficulty in view of the phonemic status of the segments concerned.

The graph d therefore appears in Cp. representing a wider range of segments than may be supposed from its use in the orthographic systems of PE or Latin. Its use for the velarised and non-velarised fricative and stop can be explained with reference to the phonemic status of these segments, as can its use for both voiced and voiceless fricative. Its use for both stop and fricative segment can be seen to result from factors affecting the development of the OE orthographic system.

2.1.21 th

The sequence th is normally used in the PE spelling system to represent the dental fricatives [θ] and [ð], see (2.1.176).

(2.1.176)

<table>
<thead>
<tr>
<th>PE [θ]</th>
<th>thick</th>
<th>ether</th>
<th>heath</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE [ð]</td>
<td>there</td>
<td>leather</td>
<td>lathe</td>
</tr>
</tbody>
</table>
and in Latin it apparently represents an 'aspirated voiceless plosive' (Allen, 1965: 26).

An examination of available evidence suggests that the usage of the sequence in OE agrees for the most part with its use in the orthographic system of PE rather than Latin.

1.1 th appears in forms in Cp. for which

(a) The Germanic cognates are spelt with th (OS), p (ON), p (Go.), d (OHG);

(b) The PE reflexes contain the segments [θ] or [ð];

(c) Alternative spellings in Cp. and other OE MSS are d, p, and ð.

Clearly the same segments as those considered in §2.1.20.2 are represented. The appearance of th as one of the set of variant spellings can again be explained with reference to the history of scribal practice: the sequence is simply another means of representing a segment for which the roman alphabet did not supply an appropriate symbol. Like d, th appears for the dental fricative in early OE MSS such as Cp. (Campbell, 1959: §55) and the use of this particular graphic sequence seems to have been suggested by Old Irish spelling conventions.

Thus th represents [θ] in the forms in (2.1.177).

(2.1.177)

<table>
<thead>
<tr>
<th>colicus (colchicum)</th>
<th>eoburthrote 'carline thistle' 558</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(OHG drozza, ON proth)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>coxa</th>
<th>thegh 'thigh' 556</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(OFr. thiach, OHG dioh)</td>
</tr>
</tbody>
</table>
argilla : thes 'clay' 207
(Go. Paho, OHG daha)

1.2 and the voiced segment [ð] in foot-medial position, as in the forms in (2.1.178).

(2.1.178)

(h)alitus : athm 'breath, breeze' 130
(OS athom, OHG adum, atam, OFr. ethma)

carina : bythne 'keel' 389
(W-S bytne, see Campbell (1959: §§419; 420))

2 In

abunde : genycthlice 'abundantly', 32
(OE genyhtlice, OS, OHG genuht, OHG genuhtlihho)

th appears for the reflex of PG [t], which is uniformly [t] in OE (§2.1.26). This must be explained as the result of scribal error or confusion, possibly influenced by the fact that th is used to represent some sort of voiceless plosive in Latin (see above).

The sequence th for the most part, therefore, represents [ð] and [θ], the same segments as it does in PE. Its use for both the voiced and voiceless fricative can be explained with reference to the phonemic status of the segments concerned.

2.1.22

As this symbol does not appear in the spelling systems of either PE or Latin (Allen, 1965: Ch.I), it is necessary to rely totally
on the evidence of (a) cognate forms in the Germanic languages, (b) the PE reflexes of the forms concerned and (c) alternative spellings within extant OE material in order to recover its significance.

1. $p$ appears in forms in Cp. for which

(a) The Germanic cognates have $th$ (OS), $d$ (OHG), $p$ (Go.), $ð$ (ON);

(b) The PE reflexes contain the segments $[ð]$ or $[θ]$;

(c) In Cp. and other OE MSS, spellings in $th$, $d$ and $ð$ appear.

Obviously the same set of segments as represented by $th$ and $d$ ($§2.1.20.3; §2.1.20.1$) are represented, and the use of the symbol $p$ can simply be explained as another means adopted by the scribes to represent the OE dental fricatives. This symbol has apparently been adopted from the Runic alphabet (Campbell, 1959: $§§57.6; 67$) and becomes more prevalent in MSS dating from the later OE period.

1.1 Thus $p$ represents $[θ]$ in the forms in (2.1.179)

(2.1.179)

\begin{center}
\textbf{scisca} : eofo\textit{forprote} 'carline thistle' 27
\textbf{conpetum} : \textit{Prop} 'village, enclosure' 557
\end{center}

(OHG drozza, ON \textit{Proti}, PE 'throat' cf. Cp. eoburthrote 558)

(Go. \textit{daurp}, OFr. th\textit{rop}, OHG \textit{dorp}, PE '–thorpe')

1.2 and the voiced segment $[ð]$ in foot-medial position in the forms in (2.1.180).
aspera : unsmopi 'harsh' 232
(PE 'unsmooth')

cratem : hyr̩pil 'a hurdle' 600
(OHG hurt, Go. haurds, OS hyrth)

1.3 Presumably the velarised reflex [œ] occurs before the unstressed back vowel in the form

crepidinem : neopourai 'downwards', 5
(OFr. nitha, netha; OS nithana).

Thus p represents a range of different phonetic segments, the realisation of which can only be recovered from consideration of the diachronic development of the forms concerned. Its appearance for both voiced and voiceless fricatives, and velarised and non-velarised segments in medial position can be explained with reference to the phonemic status of these particular phones in the dialect represented.

2.1.23 Ṝ

Again, this symbol does not appear in the orthographic systems of PE or Latin, and it is necessary to consider the diachronic development of the forms concerned in order to recover its synchronic value in the Cp. dialect.

1 Ṝ appears in forms for which

(a) The cognates are spelt with th (OS) Ṝ (Go.), Ṝ, ː (ON), d
(OHG);
(b) The PE reflexes have [Ø] or [Ø];

(c) Alternative spellings in Cp. and other OE MSS include th, d and ð.

This suggests that the same set of segments as discussed in §2.1.10.3, §2.1.20.1 and §2.1.21 is represented and the appearance of this particular symbol (d with a diacritic stoke, intended presumably to distinguish it from d which represented the corresponding stop) is simply another means by which the scribes attempted to represent the dental fricatives in OE. Like ð the symbol ð became increasingly common in the later OE period (Campbell, 1959: §55.6).

That d and th were replaced by ð and ð is understandable given the fact that in the first case confusion would be bound to result from the use of d for two phonemically distinct segments, and in the second a single graph is less cumbersome to produce than a sequence of two.

1.1 Thus ð represents [Ø] in the forms in (2.1.181).

(2.1.181)

sicini (siccine) : ac ðus 'thus' 26
(OS, OFr. thus)

tri(p)lex (or trilix?) : ðrili 'three fold' 29
(OHG drillero, OFr. thre, thria, OS thria, OHG drie, drio, Go. Preis, PE 'three')

commis(s)ura : flycticlað 'a joining together' 491
(OFr. klath, PE 'cloth')

1.2 [Ø] in the forms in (2.1.182),
2q8

byrseus : leðerwyrtta leather worker, tanner’ 344
(OHG leder)

1.3 and the velarised segment [ɔ] in

cotionatur : maðalade 'to speak, make a speech', 586.

As with ð, the broad phonetic values to be ascribed to ɔ must be recovered from a consideration of diachronic evidence. Its use to represent several phonetically distinct segments can be explained by the fact that no phonemic contrast is ever attested between them.

Thus four symbols are used to represent the various dental fricative segments that occur in Cp., a situation which results from factors affecting the development of the OE orthographic system. All four seem to be used for all three phonetic segments [ð], [ɔ] and [θ]. While some tendencies in the distribution of these symbols can be observed (Campbell, 1959: §57.5), i.e. th and ð occur most commonly in word-initial position, while d and ɔ appear medially and finally, this is generally considered to be of graphic rather than phonological significance. According to Campbell (1959: §57.6) 'the distinction between them is purely a palaeographical question' and the existence of spellings that violate the suggested pattern of distribution, see (2.1.183), defies any attempt to read any phonological significance into the distribution of the symbols concerned.
æthm  (2.1.178)

alitudo : fothur  'fodder'  138  
(OHG  fuotar)

bythne  (2.1.178)
wereeth  (2.1.177)

cotizat : tebleth  'to gamble'  497

eastvsuth  (2.1.177)
unsmoði  (2.1.180)
hyrpol  (2.1.180)
ðús  (2.1.181)
ðrili  (2.1.181)

The fact that they are attested in free variation in the same lexical item would seem to confirm this, see (2.1.184).

(2.1.184)

cf.  eofurþrote, 27 and  eoburthrote, 558

and  bodan, 10 and  bythne  339

The appearance of all four possible alternative symbols for the representation of the dental fricative can be explained by the fact that the Cp. MS dates from a relatively early period, when the orthographic conventions for the representation of the OE segments in question had yet to be established.
The graph  is used in the spelling systems of Latin and PE to represent segments that are lateral and alveolar (Allen, 1965: 33-4; Gimson, 1980: §8.25). PE evidence reveals that the graph  can represent lateral alveolars which are

- 'clear' or 'front' [l]
- 'dark' or 'back' [ɻ]
- voiceless [ɻ]
- or syllabic [ɻ],

as found in the PE forms 'leave', 'feel', 'play', and 'apple' respectively. The distribution of 'clear' and 'dark' [l] varies from dialect to dialect in PE (Gimson, 1980: §8.25.3), and therefore, while the evidence of PE is important for the present account in that it suggests that a 'back' [ɻ] is phonetically possible in OE 117, [ɻ] will only be posited in environments in which it is motivated by spelling evidence.

1  appears in forms in Cp. for which

(a) The Germanic cognates are generally spelt with  
    (Prokosch, 1939: §29.2);
(b) The PE reflexes contain either [l] or [ɻ] depending on the dialect under consideration (Gimson, 1980: §8.25);
(c)  is the only spelling that is attested in OE MSS  
    (Campbell, 1959: §50).

There is, therefore, little controversy in the suggestion that  should represent [l] in the forms in (2.1.185).
The existence of PE [f] in similar environments to the segment represented by l in the forms in (2.1.186) may suggest that the 'back' variant is attested in OE. However, as there is no indication of this in the spellings that appear, no such assumption will be made in the present account.

1 But see §2.1.24.3 and (2.1.193 ft.1) below.
2.1 The appearance of certain spellings (particularly digraphs) for the Pre-OE short monophthongs suggests that a velarised reflex [ɨ] occurs before a back vowel (see §2.1.19.3.3 and references therein). Thus [ɨ] is represented in the forms in (2.1.187)

\[(2.1.187)\]

coccum : wioloc 'whelk' 594
caulen : steola 'stalk of a plant' 385
(OHG stil, OE stela, stela)

and presumably also in those in (2.1.188)

\[(2.1.188)\]

bofellum (bovilla) : faulud 'fold' 310
cavernas : holu 'hole' 434

and even in the form

crucus (crocus) : gelo 'yellow', 598

where the e spelling presumably represents the segment [eo] ($\textsection 2.1.2.2.2$).

2.2

Furthermore, as noted in $\textsection 2.1.1.2.2$, the appearance of a and ea for Pre-OE [æ] suggests that /l/ in all probability has a back realisation when it appears between the reflex of Pre-OE [æ] and a
consonant. That fact that PE /l/ usually has [i] in pre-consonantal position provides further support for this assumption. (Gimson, 1980: §8.25.1c).

Thus [l] is represented in the forms in (2.1.189).

(2.1.189)

<table>
<thead>
<tr>
<th>calvariz locus</th>
<th>cualmstou</th>
<th>'place of execution'</th>
</tr>
</thead>
<tbody>
<tr>
<td>calvariz locus</td>
<td>cualmstou</td>
<td>'place of execution'</td>
</tr>
<tr>
<td>(OS, OHG qualm, OE cwealm 'death')</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>bratium</th>
<th>malt</th>
<th>'malt'</th>
</tr>
</thead>
<tbody>
<tr>
<td>bratium</td>
<td>malt</td>
<td>'malt'</td>
</tr>
<tr>
<td>(OHG malz)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>calculus</th>
<th>calc</th>
<th>'plaster, cement, chalk'</th>
</tr>
</thead>
<tbody>
<tr>
<td>calculus</td>
<td>calc</td>
<td>'plaster, cement, chalk'</td>
</tr>
<tr>
<td>(OHG calc, chalch, OE cealc)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>altrinsecus</th>
<th>on ba halfe</th>
<th>'half'</th>
</tr>
</thead>
<tbody>
<tr>
<td>altrinsecus</td>
<td>on ba halfe</td>
<td>'half'</td>
</tr>
<tr>
<td>(OE healf, Go. halbe, OS half, OFr. half, OHG halb)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

and presumably also in those in (2.1.190).

(2.1.190)

<table>
<thead>
<tr>
<th>chaus (-os)</th>
<th>duolma</th>
<th>'chaos, destruction'</th>
</tr>
</thead>
<tbody>
<tr>
<td>chaus (-os)</td>
<td>duolma</td>
<td>'chaos, destruction'</td>
</tr>
<tr>
<td>(OS folc, folk, OFr. folk, OHG folc, folch, folk, PE 'folk')</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>actionari(i)s</th>
<th>folcgererbunum</th>
<th>'peoples governor'</th>
</tr>
</thead>
<tbody>
<tr>
<td>actionari(i)s</td>
<td>folcgererbunum</td>
<td>'peoples governor'</td>
</tr>
<tr>
<td>(OS folc, folk, OHG folc, folch, folk, PE 'folk')</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>acega</th>
<th>holtthona</th>
<th>'woodcock'</th>
</tr>
</thead>
<tbody>
<tr>
<td>acega</td>
<td>holtthona</td>
<td>'woodcock'</td>
</tr>
<tr>
<td>(OHG holz, OFr. holt)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Although this is not directly reflected in the spelling evidence, the appearance of a preceding back vowel graph would seem to indicate that [i] is in all probability the segment attested.

2.3

It is not, however, possible to assume that [l] occurred
between the reflex of Pre-OE [e] or [i] and a following consonant with any amount of conviction. If this was the case, we should expect a glide to have developed after the front vowel and the resulting sequence to be represented by eo, having been apprehended as a short equivalent of the reflex of the PG diphthong [eu] or [iu] (§2.1.2.2.4, §2.1.10.2.3). In contrast with the vowel spellings that appear before r (§2.1.25.2.2), eo spellings are very rarely attested in this context either in the Cp. MS or in OE in general (Campbell, 1959: §146). While it is theoretically possible that [i] did appear in this environment and for some reason a glide failed to develop, in the light of the marked absence of spelling evidence to this effect the present account will assume that this was not the case, and that 1 represents [i] in the forms in (2.1.191).

The fact that 'in Irish English a relatively clear [i] is used in these situations where RP would have [i]' (Gimson, 1980: §8.25.3) would suggest that such a situation is not unfeasible, as it is typologically plausible in the English language.

As noted in §2.1.2.2.4, the appearance of the occasional eo spelling does not necessarily have to be interpreted as indicating that [i] is attested. The e ~ eo alternation results from the fact that there is no contrast between [e] and [eo] in this particular environment (§2.2.1.2.3.4).

Thus [i] is represented in the forms in (2.1.191), and even in

biothanatos : seolbbron 'suicide', 299

if the account of the vowel spellings given in §2.1.2.2.4; §2.1.10.2.3 is accepted.
(2.1.191)

cassidis : *helmes 'helm, helmet' 418  
(OS *helm, OHG *helm, Go. *hils)

cer(v)us : *elh 'elk' 443  
(OHG *elaho, ON *elgr, OE *eolh)

capulum : *helt 'hilt, handle' 415  
(OHG *helza)

tantalus : *elbidu 'swan' 30  
(W-S *ilbette, OHG *albis, alpis, elpis)

avus : *aldra fader 'grandfather, older father' 241  
(W-S *leldra)

3 1 also appears in forms in Cp. for which

(a) The cognate forms are spelt with el, ol, ul, al, 1 (Campbell, 1959: §331.4; §345; §400);

(b) The PE reflexes contain [l] or [al] (Gimson, 1980: §8.25.1c);

(c) Alternative spellings in Cp. and other OE MSS include ul, ol, el (Campbell, 1959: §363).

(a) The cognates suggest PG [l] which was formed as a result of the loss of unstressed vowels in final syllables, as outlined by Campbell (1959: §331.4; §345). This presumably develops as such into OE, although it is possible that a 'parasite' vowel may appear before the consonant, (ibid: §363).

(b) That 1 should represent a syllabic segment in the forms concerned is generally supported by the evidence of the PE reflexes.
(c) The alternative OE spellings in el, ol, ul can either be explained as a purely graphic indication of the syllabic nature of the consonant, or interpreted as representing the sequence of a parasite vowel plus a consonant (see §2.1.2.6.5; §2.1.6.4.5). Ultimately it is impossible to determine whether [l] or [əl] is represented, and given the fact that in PE the sequences are virtually interchangeable (§2.1.2.6.5), the question is not of crucial significance 119. It can be acknowledged, therefore, that [l] is at least putatively represented in the forms in (2.1.192)

(2.1.192)

alea : tebl 'gaming board' 110
(OHG zabel, Lat. tabula, OE tafl)

bulla : sigl 'clasp, brooch, jewel' 331
(OHG sigilla, Lat. sigillum)

corylus : hasl 'hazel' 536
(OHG hasal)

and the possibility that ul represents [l] in the forms in (2.1.193), see (2.1.186) above,

(2.1.193)

mapuldur (2.1.186) 1
fugultreo (2.1.186) 1

1 the u spelling in these forms is either
(a) a diacritic indicating the syllabic nature of the following consonant or
(b) a graph representing an unstressed back vowel (§2.1.6.4.5).
Given that the a in mapuldur at least would be triggered by a back vowel in the following syllable (§2.1.1.2.3), otherwise an æ or e spelling would be more likely (§2.1.2.4; §2.1.3.2), (b) is perhaps the more likely interpretation.
must also be allowed.

4 The possibility that voiceless [l] may occur after [x] has been discussed in §2.14.1.2. Thus [l] may appear in

\begin{align*}
\text{ar(r)ectas : } & \text{hlysnendi} \quad \text{PE 'listen', 221} \\
\end{align*}

5 [l] in gemination: [ll]

The sequence [ll] appears in forms in Cp. for which

(a) The W-G cognates (at least) have [ll] (Prokosch, 1939: §30);

(b) The PE reflexes contain the segment [l] (Gimson, 1980: §8.25);

(c) Occasionally, [l] spellings are attested in OE MSS (Campbell, 1959: §66).

The assumption that [ll] is represented in the forms in (2.1.194) is based largely on the evidence of the cognate forms, as geminate consonants are not generally attested in PE except across morpheme boundaries (see ft. 96).

Thus [ll] presumably occurs in the forms in (2.1.194).

\begin{align*}
\text{(2.1.194)}
\end{align*}

\begin{align*}
\text{malina : } & \text{fylledflood 'spring, high tide' 20} \quad \text{(OHG fullida, Go. fullipī)} \\
\text{conc(h)is : } & \text{scellum 'shell' 560} \quad \text{(Go. skalja)} \\
\text{cuppa (ab) : } & \text{beodbolle 1 'table bowl' 627} \quad \text{(OHG hirnipolla)} \\
\end{align*}

1 The first [l] may have a velarised realisation, see §2.2.2.5.2.9..
callos : iil 'hard skin, sole of the foot', 400
(OE iile; OFr. ili, iie, ii)

the alternative spellings with i can be explained with reference to the fact that there is no longer a distinction between [l] and [ll] in word-final position. The simplex and geminate graphs have therefore become equivalent (see §2.1.18.5), phonemic gemination of consonants being only attested foot-medially in OE.

As in PE, therefore, the graph i is used to represent a range of different phonetic segments in the Cp. dialect, and this is possible given the phonemic status of the segments concerned. It must be reiterated that theoretically [i] may occur in more positions than is suggested in the above account. The variation in the appearance of [l] and [i] in PE dialects defies any attempt to formulate a universal account of possible distribution patterns, and while it is only suggested that [i] appears in positions where the spelling evidence indicates that this might be the case, it must be acknowledged that the present account may err on the side of caution in this respect.

2.1.25  r

The graph r is used in the spelling system of PE to represent segments which are roughly described as 'voiced post-alveolar frictionless continuants' (Gimson, 1980: §8.26), but vary considerably in their precise realisation and distribution from dialect to dialect. According to Gimson (ibid: §8.26.3)
there are more phonetic variants of the /r/ phoneme than of any other English consonant.

In Latin the graph represents a segment that is similar to at least some of the PE variants of /r/ (Allen, 1965: 32–33).

An examination of the available evidence suggests that r represents a range of segments within this general area in the Cp. dialect. As with the segment represented by l, the existence of 'back' variants of /r/ in PE dialects, for example

'uvular' [R] or [y] or

'retroflex' [r] (Gimson, 1980: §8.26.3),

are useful as they support the claim that some sort of back allophone of /r/ is phonetically plausible in OE. However, once again, the existence of such variants will only be posited when there is evidence that this might be the case in the spellings that appear. The fact that no uniform pattern of distribution emerges for 'front' and 'back' /r/ in PE defies any further attempt to suggest [r] in environments other than those cited below with any degree of conviction.

1 r appears in forms in Cp. for which

(a) The Germanic cognates usually have r (Prokosch, 1939: §29.2) but z is occasionally attested in Gothic (ibid: §28);

(b) The PE reflexes contain [r] or some variant thereof (Gimson, 1980: §8.26);

(c) r is the invariable spelling attested in OE MSS (Campbell, 1959: §50.5).

It is therefore fairly certain that a segment which can loosely be interpreted as [r] is represented in the forms in (2.1.195).
costa: rib 'rib' 585
(OHG rippa)

bolides: metrap 'a line for sounding the depth of water' 519
(PE 'rope', Go. raip, OHG reif)

censores: gerefan 'reeve, prefect' 439

abiget: wereth 'to prevent, hinder' 39
(OHG werien, Go. warjan, OS werian, OFr. wera)

acitelum: hromsan 'sprout, crop of garlic' 57
(OHG kropr)

alveus: streamread 'bed, course of a stream' 129
(OHG stroum, strum, OFr. stram, OS stroum)

aleator: teblere 'gamesman' 111
(PG [ærɪ], Campbell, 1959: §337)

convenio: groetu 'to greet' 526
(OS grotian, OFr. gretu, OHG grouzen)

scisca: eoforprote 'carline thistle' 27
(PE 'throat', OHG drozi)

annua: gerlice 'yearly' 170
(OS ger, jar, OFr. ier, iar, OHG jar, Go. yer)

basterna: beer 'chariot, litter' 137
(OS bare, OFr. bere, OHG bara)

caractis (cateracta): uueterpruh 'conduit' 367
(PE 'through')

calciculium: jeces sura 'cuckoo sorrel' 380
(cf. sur, 'sour', OHG sur)

berrus (verres): baar 'boar' 286
(OHG per)

alietum (haliaeetos): sperhabuc 'sparrowhawk' 118
(Go. sparwa, OHG sparo)

cauterium: merciseren 'branding iron' 362
(OHG marca, OFr. merke)

bitulus (betula): berc 'birch tree' 298
(OHG bircha, ON biork)

abortus: misbyrd 'misbirth, abortion' 36
(OS gi-burd, Go. gabaurPe)
cespites : tyrb 'turf' 452
(OHG zurba)

2.1

The spelling of the stressed vowel (see §2.1.18.4.2) in certain forms in Cp. suggests that some sort of velarised segment appears before a back vowel. While this segment may be phonetically [w] or [j], the symbol [r] will suffice in the present account to convey the basic information that the segment is 'back' rather than 'front'. Thus [r] is represented in the forms in (2.1.196)

(2.1.196)

agmen : weorod 'troop' 109
cummig : teoru 'tar' 616

and presumably also in those in (2.1.197).

(2.1.197)

arcister : strelbora 'archer' 224
(beran, 'to carry', PE 'bear')

cefalus : heardhara 'the name of a fish' 447
(OHG hazo, PE 'hare')

2.2 It can also be maintained due to the consistent appearance of a and ea for Pre-OE [a] and eo for Pre-OE [e] that [r] occurs before a following consonant (see §2.1.1.2.4; §2.1.2.2.1; §2.1.9.4.1).

Thus [r] is represented in the forms in (2.1.198)
acies et ordo militum : scearpnis 'sharpness' 50
et oculorum vius et (OS skarp, OFr. skerp, OHG scarf)
acumen ferri
des

cefalus : heard bara 'the name of a fish' 447
adventio : sarwo 'device, contrivance' 88
(OHG saro, gisarwi, Go. sarwa)
crepidinem : neoDouard 'downwards' 5
(OS -ward, OHG -wart, Go. -wairps)

and presumably also in those in (2.1.199)

(2.1.199)
cereacus : hornblauuere 'hornblower', 454
(Go. hauern, OS, OHG horn)
cicconia : storc 'stork', 465
(OHG storah, storc)
chartamo (cardamum) : lybcorn 'grain of purgative effect', 459
(OE corn, PE 'corn', OS, OFr., OHG korn, Go. kaurno)

although this is not indicated in the spelling, other than by the appearance of a back vowel graph.

In contrast with the analysis of the reflex of PG [l], see §2.1.24.2.3, the frequency of eo spellings for PG [e] (Campbell, 1959: §146) can only reasonably be interpreted as representing a segment which was perceived as the short equivalent of the reflex of the PG diphthongs [eu] and [iu] (§2.1.2.2.1; §2.1.10.2.1). Presumably, therefore, a glide had developed after the Pre-OE front vowel in
forms such as those in (2.1.200), and this must be taken as an indication that the consonant represented by $r$ had a velarised realisation.

(2.1.200)

\textit{ad fasces : to weorðmyndum} 'honour', 83  
(Go. wairðs, OS, OFr. werth, OHG werd)

\textit{caumeuniae : eordreaste} 'a lying on the ground', 360  
(OHG erd, Go. airða, PE 'earth')

Note also, a similar segment is represented in

\textit{bitorius : erdling} 'farmer', 303

despite the spelling of the vowel ($§2.1.2.1$).

Such a discrepancy in the distribution of $[\ell]$ and $[\varepsilon]$ is undesirable, as we should expect similar segments (both are traditionally classed as 'liquids' (Prokosch, 1939: §13)) to undergo parallel developments. However, this interpretation follows naturally from the examination of the vowel spellings that appear, the fundamental principle behind which was that graphs and digraphs represent vocalic segments which are identical in quality but not quantity ($§2.1.1.2.1$). Unless this is accepted, the obvious difference in the distribution of $e$ and $ee$ spellings before $l$ and $r$ when followed by a consonant would otherwise be difficult to account for.

A possible explanation may be that the segments represented by $l$ and $r$ in OE did not pair together in the phonological system of that language, $[r]$ being classified as a 'fricative' rather than 'liquid' or 'continuant'. It may also be the case that OE $[r]$ was
an inherently 'back' segment, and given the numbers of different realisations of the phoneme in PE dialects (Gimson, 1980: §8.26.3), such a situation is perfectly feasible.

3 The symbol [r] also appears in forms in Cp. where the cognate evidence and alternative spellings attested in OE MSS suggest that the segment is syllabic (see §2.1.24.3).

[\[r\]] is therefore represented in the forms in (2.1.201).

(2.1.201)

| bile (\(-is\)) | atr | 'poison', 297 |
| (OHG eitar, OS etar, ON eitr) |
| cospis (u) | palstr | 'spike', 534 |

4 The possibility of voiceless [\[r\]], at least after initial [χ], as for example in

(\(nicti\))corax : hrafn 'raven', 553

must also be allowed.

5 The symbol [r] in gemination: rr

5.1

As the reflex of PG [r] is not subject to West-Germanic gemination (Campbell, 1959: §407), gemination is not as frequently attested with [r] in OE as it is with other consonants. [rr], however, is presumably represented by rr in the form

callos : weorras 'hard skin', 400
5.2 The fact that \( r \) appears where the cognates suggest \([rr]\) in the form

\[
\text{cardo} : \text{heor} \ 'hinge, cardinal point', 424
\]

\( (\text{OE heorr, Icel. hjarri}) \)

indicates that the contrast between \([r]\) and \([rr]\) is no longer evident in word-final position (cf. §2.1.24.5). In this case, however, the simplification of the geminate has great significance as far as the phonemic status of the preceding vowel is concerned (see §2.2.1.2.3.1.iii).

The graph \( r \), therefore, represents a wide range of phonetic segments in Cp., as indeed it does in the spelling system of PE. Once more, such a situation is possible due to the phonemic status of the segments concerned.

2.1.26 \( \mathbf{t} \)

The graph \( t \) represents a voiceless alveolar stop in the spelling systems of Latin and PE, see (2.1.202)

(2.1.202)

PE: take
  steak
  beat
  hatpin
  button  (Gimson, 1980: §8.07)

Latin: mater
  tabula  (Allen, 1965: 13–14)

An investigation of available evidence suggests that the graph also represents segments with this value in Cp., although a few
additional variants may be attested.

1 \( t \) appears in forms in Cp. for which

(a) The cognates are spelt with \( t \) (OS, ON, OFr.) and \( z, zz, \)
and \( ts \) in OHG (Prokosch, 1939: §21; §28);

(b) The PE reflexes contain the segment \( [t] \) (Gimson, 1980:
§8.07);

(c) \( t \) is the only spelling that occurs in extant OE MSS
(Campbell, 1959: §50.6).

The assumption that \( t \) represents \( [t] \) in the forms in (2.1.203) is
therefore fairly uncontroversial.

(2.1.203)

\[
\begin{align*}
\text{broel} & : \text{deortuun} \quad \text{'deer park, enclosure'}, 324 \\
& \quad \text{(PE 'town'; OHG sun, ON tun)}
\\
\text{allox} & : \text{tah}z \quad \text{'toe'}, 141 \\
& \quad \text{(OHG zeha)}
\\
\text{bratium} & : \text{malt} \quad \text{'malt'}, 322 \\
& \quad \text{(ON malt, OHG malz)}
\\
\text{albipedius} & : \text{huitfoot} \quad \text{'having white feet'}, 122 \\
& \quad \text{(OHG hwiz, Go. h}j\text{its, OS huit)}
\\
\text{caccabum} & : \text{cetil} \quad \text{'kettle'}, 346 \\
& \quad \text{(Go. katils, Lat. catillus)}
\end{align*}
\]

\( t \) also represents \( [t] \) in the initial and final clusters \( st-, str-, -est \)
as in the forms in (2.1.204).

(2.1.204)

\[
\begin{align*}
\text{ad euronothum} & : \text{eastsuth} \quad \text{'south east'}, 41 \\
& \quad \text{(Go. austr)}
\end{align*}
\]
alveus : *streamraad* 'course of a stream', 129  
(ON *strom*, OHG *stroumi, strum*)

ciconia: *storc* 'stork', 465  
(OHG *storah*)

2

The existence of digraph spellings for the Pre-OE short front monophthongs in the forms in (2.1.205) can again be taken as an indication of the existence of a velarised variants of the medial consonant before an unstressed back vowel.

(2.1.205)

bucitum (e) : *seotu* 'stall', 339  
(OHG *sez*)

balus : *isernfeotor* 'fetter', 272  
(OS *feteros*, OHG *fezzera*)

arcessitus : *feotod* 'fetch, bring', 222

[t] is presumably also attested in

clas(s)is : *flota* 'ship, vessel', 485

although this is not indicated in the spelling, beyond the appearance of a preceding back vowel graph.

3.1

[t] also appears in certain environments (notably the past tense and participle of weak verbs) where the cognate evidence suggests PG [t], which developed to [d] in W-G (see §2.1.20 and Campbell, 1959: §750).
According to Campbell (ibid: §75.2) this [d] devoices to [t] in certain environments, notably after voiceless consonants such as [p] and [χ]. As a result of this process, the contrast between [d] and [t] is lost in the relevant contexts. Presumably, therefore, the graphs d and t would become equivalent and this explains the appearance of t for W-G [d] in the forms in (2.1.206).

(2.1.206)

convaluit : gewarpte 'to recover', 572
concesserim : arecte 'to put forth, narrate', 523
condretur : gewarth 'to work, make, build', 567

3.2 A similar explanation may lie behind the t spelling in the forms in (2.1.207),

(2.1.207)

con(n)ectit : tellat 'to tell, reckon', 591
confundit : menget 'mix, mingle', 565

the devoicing in this case being due to the fact that the syllable containing the reflex of W-G [d] is unstressed (see Campbell, 1959: §450).

Another explanation may be that the inflection represented is in fact the third person singular present tense, PG -[iëi] (ibid: §731). It must be noted, however, that the Latin form glossed in each case strongly suggests that past tense should occur (Gildersleeve and
Lodge, 1984: §122-127). If this is so,  may either simply be a graphic variant for the fricative (Campbell, 1959: §57.7) or reflect a phonological change (ibid: §735).

4  occasionally appears in forms where the Germanic cognates, the PE reflexes, and indeed alternative spellings in OE MSS suggest that a fricative is represented, as shown in (2.1.208).

(2.1.208)

<table>
<thead>
<tr>
<th>colomata (calliomarchus)</th>
<th>hatcoal 'plant name', 570</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(OE hap, OHG haipi)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>callis</th>
<th>paat 'path', 429</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(OFr. path, pad; OHG pfad)</td>
</tr>
</tbody>
</table>

This phenomenon can be explained with reference to the fact that the OE scribes were experimenting with methods of representing the dental fricative segments that occurred in the language, occasionally being chosen as an alternative (see §2.1.21.2). It may be best to regard these spellings as errors for th, which would not be surprising given the general variation in the representation of the segment concerned.

5  in gemination: tt

The sequence tt occurs in forms in Cp. for which

(a) The W-G cognates are spelt with tt (OS, ON, OFr.) or te and z in OHG (Prokosch, 1939: §30; §26);

(b) The PE reflexes have [t] (Gimson, 1980: §8.07);

(c) Occasional variants in  are attested in OE MSS (Campbell, 1959: §66).
On the evidence of the cognate forms it can be suggested that the geminate consonant [tt] is represented in the forms in (2.1.209) (note, again, that consonant length is not generally a significant feature of PE).

(2.1.209)

ad (ex)pensas: to nyttum 'use, advantage, profit', 72 (OHG nuzzi)

agitat(a)e: onettad 'to hasten, hurry', 107 (PG *an-haitian (Campbell, 1959: §77 ft.2), OHG anassan)

condidit: gesette 'to set, fix', 565

West Germanic Gemination also results in the formation of the derivational affix -ettan: PG [atjan] (Campbell, 1959: §339) which is presumably attested in the forms

campus: brogdetende vel cleppettende 'palpitating', 411.

In these, as in the forms

tantalus: albitu 'swan', 30

.crabro: hurnitu 'hornet', 603

presumably originally in stem nouns (ibid: §592e), the appearance of t for [tt] may be simply the result of graphic variation (ibid: §66).

A further explanation for the t spelling in the nouns at least may be that the derivational function of the affix in question has become obscured (3.230e). The sequence [tt] is therefore no longer interpreted as representing the affix (ett) 128, but is regarded as
part of a disyllabic root. The fact that the forms in question are not declined according to the pattern normally followed by OE nouns (the declension to which all nouns with the suffix -ett regularly belong), but have apparently changed class to the ð declension (or so the appearance of the affix -u in the nominative singular would seem to indicate (ibid: §585)) supports this assumption. If [it] is no longer regarded as representing a derivational affix, then the syllable will presumably be reduced in stress (§2.3.2; §3.2.2.3.2) and this, as gemination is only attested after stressed syllables in OE, may explain the absence of the geminate consonant in the forms concerned. Furthermore, this might also explain why no digraph spellings are attested for the reflex of a Pre-OE front monophthong before the back unstressed vowel [o], u (see 2 above). It is unlikely that a segment would be realised as a diphthong in a syllable that was unstressed in OE (Prokosch, 1939: §49.k).

The graph t, therefore, is for the most part used to represent segments in Cp. similar to those which it represents in the orthographic system of PE. Its use for both velar and non-velar segments can be explained with reference to the phonemic status of the segments concerned; they never appear in contrast with each other (§2.2.2.5.2.1).

2.1.27 s

The graph s represents both voiced and voiceless alveolar fricatives in the spelling system of PE, and a voiceless alveolar fricative in that of Classical Latin, see (2.1.210).
A voiced segment had, however, apparently developed in intervocalic position in Vulgar Latin (Campbell, 1959: §536).

An examination of available evidence suggests that the segments represented by the graph in the Cp. dialect are very similar to those represented in PE.

1. **s** in foot-initial position, foot-final position and before voiceless consonants

1.1 **s** appears in forms in Cp. for which

   (a) The Germanic cognates are spelt with **s** (Prokosch, 1939: §28);

   (b) The PE reflexes have [s] (Gimson, 1980: §8.17);

   (c) **s** is the only spelling that appears in the extant OE MSS (Campbell, 1959: §50).

(a) The cognate evidence suggests that PG [s] can be reconstructed in the forms concerned which, in accordance with the principles of 'lenition' and 'strengthening' described in (2.1.122), can be expected to remain voiceless in the environments in question.
(b) This is supported by the appearance of [s] in the PE reflexes of the forms under consideration, and

c) the absence of variant spellings in OE MSS.

Thus s represents [s] in the forms in (2.1.211).

(2.1.211)

adventio: sarwo 'device', 88
(OHG saro, gesarw, Go. sarwa)

gacila: snithatreo 'carline thistle', 14
(OHG snid, cf. OE snidan 'to cut', Go. sneid, OS snihan, OFr. snitha)

ban: segn 'sign, standard', 278
(Lat. signum)

sicini (siccine): ac bus 'thus', 20
(OS; OFr. thus)

aegesta: gors 'gorse, furze', 97

abortus: misbyrd 'abortion, misbirth', 36
(OHG missi-, missa-, OS, OFr. mis-)

acconito(a): pungas ¹ 'poisonous plant', 45

calculium: ieces sura ¹ 'cuckoo sorrell', 380
(cf. sur 'sour', OHG sur)

¹ See Campbell (1959: §571) on the origin of these affixes.

1.2 s also appears in certain initial and final clusters in OE, as shown in the forms in (2.1.212).

(2.1.212)

aul(a)ea: stregl 'a covering for beds', 249
(Lat. stragula)
calculus, ratio vel: teblstan 'dice', 359
sententia vel:
numenis vel:
(Go. staines, OHG stein)
alveus: streamraad 'course of a stream' 129
(OHG stroumi, strum)
carbunculus: spryng 'ulcer, sore' 351
(OHG aho-spring)
colostrum: beost 'biestings, thick milk' 541
(Go. beist, OHG biost)
ad euronothum: eastsuth 'south east' 41
(Go. austr)
arbutus: espe 'asp, aspen tree' 202
(OFr. espe, ON espi, OHG aspa)

In these cases the correlation between the relative sonority of the segments and their distance from the syllable nucleus is apparently violated, see §2.2.2.5.3.1.

It is possible simply to acknowledge that such clusters are 'marked' in the language, as indeed the behaviour of the initial sequences at least in respect of Grimm's law and alliteration in Germanic verse, would seem to indicate (see §4.2.2.2.2 and references therein).

However, a possible explanation for the existence and distinctive behaviour of these clusters may be found in the suggestion that [s] in a sense constitutes a separate syllable in the forms concerned, as it is produced with a distinct 'chest-pulse' (Abercrombie, 1967: 34-6). If this is the case, the fact that [s] can precede or follow consonants with less sonority in the clusters in (2.1.211)(a) and (b) respectively does not present any great threat to the normal phonotactic constraints of the language. There is a very real sense in which [s] does not belong to the same syllable as the other segments in the 'cluster'. 
2 s in foot-medial position between sonorant segments
2.1 s appears in forms in Cp. for which
   (a) The Germanic cognates are spelt with s (r occasionally appears in Gothic) (Prokosch, 1939: §28);
   (b) The PE reflexes contain [z] (Gimson, 1980: §8.17);
   (c) s is the only spelling that appears in OE MSS.

(a) On the evidence of the cognate forms, the PG segment [s] can be reconstructed, which, it can be supposed, underwent 'lenition' in this environment and became [z] (Campbell, 1959: §444) 129 (2.1.122a).

(b) The PE reflexes support this supposition, thus [z] is presumably represented by s in the forms in (2.1.213).

(2.1.213)

abelena : *hazelnutu 'hazelnut' 34
(OHG *hasal)

coagolum (-ulum) : ceselyb 'rennet' 562
(PE 'cheese' Lat caseum)

2.2 The segment is probably the velarised [s] in

asilo(-us) : briosa 'breeze, gad-fly', 225

or so the digraph spelling for the Pre-OE monophthong would seem to indicate 130.

The value of the segment represented by s in
depends on the degree of stress that is assigned to the second syllable. As noted in §2.1.2.6.7 and §3.2.7.3.2, the vowel spelling suggests that the second syllable of this 'obscured compound' has undergone stress reduction. It can be supposed, therefore, that the alveolar fricative is likely to be voiced, as it occurs in foot-medial position. Furthermore, the appearance of the digraph eo for the Pre-OE front monophthong suggests that the velarised segment [z] should be represented, although the back quality of the original unstressed vowel has since been lost (§2.1.2.6.7). This has considerable implications for the phonemic status of the segments [e] and [eo], see §2.2.1.2.3.2.ii..

The s in the forms in (2.1.214)

(2.1.214)

augur : hælsere 'soothsayer, augur' 253
harmonia : suinsung 'melody' 195

represents a separate derivational morpheme (3.2.30). The segment is therefore best considered to be foot-initial 131, and thus [s] rather than [z] is apparently represented.

3 s in gemination: ss

3.1 The geminate sequence ss appears in forms in Cp. for which

(a) The W-G cognates (at least) have ss (Campbell, 1959: §407; Prokosch, 1939: §§29–30);
(b) The PE reflexes have [s] (Gimson, 1980: §8.17);

(c) Occasionally s spellings appear in extant OE MSS (Campbell, 1959: §66).

(a) Mainly on the evidence of their cognates, it can be suggested that [ss] is represented in forms such as these in (2.1.215) and (2.1.216).

(b) PE evidence supports this conclusion, in that [s] rather than [z] occurs. An original OE simplex [s] would undergo lenition in this context resulting in PE [z], see 2. Consonant gemination is generally attested in the form in (2.1.215),

(2.1.215)

brittia : cressa 'cress' 329
(OHG kresso)

and in the derivational affix -niss (Campbell, 1959: §592) which appears in the forms in (2.1.216).

(2.1.216)

anastasis : dilignissum 'destruction' 163
argutia : gleunisse 'wisdom' 203
concussionibus : rædnisse 'readiness, promptness' 579

3.2 The fact that s appears instead of ss in word-final position in the forms in (2.1.217) supports the assumption that there is no
The appearance of the simple graph $s$ in *lynisas* is best explained as being the result of the same pattern of development as discussed with reference to *albitu* and *burnitu* in §2.1.26.5. The sequence [is] is no longer interpreted as representing a derivational affix, and the consequent stress reduction means (i) that the geminate consonant is simplified, and (ii) that no back variant of [z] occurs. The fact that the form has evidently been transferred from the -je declension to which forms containing the suffix -ess normally belong is further proof that this should be the case (Campbell, 1959: §592d).

The graph $s$ therefore is used to represent much the same range of segments in Cp. as it does in PE, although the phonemic status of the segments concerned is different at the two stages in the history of the language. Its use for both voiced and voiceless, and velarised and non-velarised segments can once more be explained by the fact that no phonemic contrast is attested between the sounds concerned.
The orthographic sequence *sc* does not generally represent a distinct phonetic unit in the spelling systems of either Latin or PE, where it represents the sequence [sk], see (2.1.218).

(2.1.218)

PE 'scalp'
'scarce'

Latin cognercere

Occasionally however, the segment [s] is represented in PE (Gimson, 1980: §8.17).

1. *sc* appears in forms in Cp. for which

(a) The cognates are spelt with *sk*, *sc*;

(b) The PE reflexes contain [ʃ], a palato-alveolar fricative (Gimson, 1980: §8.18);

(c) *sc* is the regular spelling that appears in OE MSS (Campbell, 1959: §440).

(a) From the evidence of the cognates, the PG sequence [sk] can be reconstructed. As with the reflexes of PG [y] and [k] discussed in §2.1.15.1.2; 2.4; §2.1.16.1.2; §2.1.17.1.2; 2.2; 3.2, we can predict that the sequence, influenced by the nature of the segments that surround it, will develop to the palatal [sk'] and eventually become assimilated to [ʃ]. It would appear, however, that the sequence [sk] is 'more prone to palatalisation and assimilation than [k]' (Campbell, 1959: §440).
(b) The evidence of the PE reflexes supports the assumption that assibilation has taken place at some point in the history of the language. As is the case with [k'] and [gg'] ($\S$2.1.16.1.2; $\S$2.1.17.1.2), it is difficult to determine the exact date at which the assibilation process occurred.

The present account, however, assumes that assibilation is attested in the Cp. dialect, and that sc represents [ʃ] in the forms in (2.1.219).

(2.1.219)

concisum : scelle 'shell' 564  
(Go. skalja)

bolides : sundgerd in scipe 'ship, boat' 319  
(Go. OS, OFr. skip, OHG scif)

In the case of the forms in (2.1.220) their PE reflexes suggest that palatalisation is indeed more widespread with [sk] than [k], and thus it can be assumed that [ʃ] is also represented.

(2.1.220)

calig$\ddag$ : scoh 'shoe' 395  
(Go. skohn, OHG scuoh, OFr. sco, OS skoh)

ardebat : scaan 'to shine' 220  
(Go. skeinan, OS skinan, OHG scinan, OFr. skina)

The assibilated sequence also presumably occurs in foot-final position in the forms in (2.1.221),
calmetum:  \textit{mersc} 'marsh' 394

cercilus (cercurus):  \textit{esc} 'ship' 438

(\textsc{OHG} \textit{acus},  \textsc{ON} \textit{askr},  \textsc{PE} 'ash tree')

its distribution again being more widespread than that of $[t\dot{j}] < [k]$.

The use of a graphic sequence to represent a single segment in \textit{Cp}. can be explained with reference to the history of the segment concerned and the development of the \textsc{OE} orthographic system. The segment developed from an original sequence [sk] and as no single symbol presented itself as a suitable means of representation ([ʃ] did not occur in the Latin consonant system (Allen, 1965: Ch.I)), it was some time until new conventions were adopted in English to represent the fricative. \texttt{s}, \texttt{ss}, \texttt{sah}, \texttt{sch}, and \texttt{sh} spellings begin to make an appearance in \textit{ME} texts (see the relevant entry in the \textsc{O.E.D}). Even in this case, however, a graphic sequence rather than a single symbol is attested, the spelling system being slow to reflect developments in the spoken languages.

That the same sequence \texttt{sc} can represent either [sk] or [ʃ] in \textsc{OE} can be explained by the fact that a contrast between the segments very rarely arises (§2.2.2.5.2.3). The sequence [sk] frequently undergoes further developments in environments where it is not assibilated (Campbell, 1959: §440). \texttt{sc} is used to represent a distinct phonetic unit in \textit{Cp}, which is not the case in the orthographic systems of either PE or Latin. The use of a graphic sequence for a single segment can, however, be satisfactorily explained with reference to the diachronic
developments that affect both the phonological and orthographic systems of OE.

2.1.29 $x$

The symbol $x$ is used in the orthographic systems of PE and Latin to represent the frequently attested syllable-final cluster [ks], see (2.1.222)\(^{132}\).

(2.1.222)

PE [ks]  
axe
axes

(Gimson, 1980: §8.17)

Latin [ks]  
dixit
buxus

(Allen, 1965: 45-46)

$x$ appears in forms in Cp. for which

(a) The cognate forms are spelt with $x$ (ON, OFr.) and $s$ (OS)

$hs$ (OHG) (Campbell, 1959: §416);

(b) The PE reflexes contain [ks] (Gimson, 1980: §8.17);

(c) Alternative spellings in OE MSS include $cs$, $cx$, $hs$, $xs$

(Campbell, 1959: §53).

(a) The cognate evidence suggests PG [xs] which apparently developed into [ks] in ON, OE and OFr.

(b) This is supported by the evidence of the PE reflexes of the forms concerned.

(c) The alternative spellings can be explained by the fact that $x$ is
simply a convenient symbol for the sequence [ks] which was already in use in the Roman alphabet, see Allen (1965: 45) on the origin of this symbol. The variants in cs, ks presumably appear in certain OE MSS because the scribe in question did not choose to make use of this symbol, using instead the more cumbersome sequences of two graphs. That ha should appear as a variant can be explained by the fact that no contrast between [x] and [k] would exist in this position and thus the graphs h and c or k would have become equivalent. The xe and ox spellings reflect the general confusion that would result given the proliferation of symbols available to represent this sequence in OE.

1.1

The appearance of monograph spellings for Pre-OE diphthongs in the Cp. MS, where digraphs are generally attested in W.S. (§2.1.2.2.6; 2.5; 3.5; §2.1.3.1.3; §2.1.4.2.4) suggests that the sequence will have a palatalised realisation in certain cases and the existence of the same alternation in PE (compare the articulation of, for example, the final clusters of 'box' and 'fix' respectively) would support this assumption.

Thus x represents [ks] in the forms in (2.1.223)

(2.1.223)

axis : ex 'axle' 259
(W-S eax, OS ahsa, ON oxul)
capillatur(-io) : fexnis 'hairiness' 364
(W-S feax, OFr. fax, OS, OHG fahs, ON fax)
cuiter : sax  'knife, dagger'  625  
(W-S sex, OFr. sax, OHG saha)

and presumably also in the form

archtoes (arctos) : wag nepixl  'beam, pole on a wagon'  205  
(OHG dihæl, dihsila).

1.2 In

bux(us) : box  'box-tree'

(OHG buhs, Lat. buxus)

the sequence presumably remains velar [ks].

Thus the symbol x has a similar realisation in Cp. to that which it has in PE: its usage for both palatal and velar sequences is presumably possible, given the fact that the sequences would never appear in contrast in the dialect concerned.

2.1.30  p

The graph p represents a voiceless bilabial plosive in the spelling systems of PE and Latin, see (2.1.224)

(2.1.224)

PE [p] :  pin
apricot
cheap
ripe
couple  (Gimson, 1980: §8.07)

Latin:  pulcher
tempis  (Allen, 1965: 12)
An examination of available evidence suggests that it generally represents a similar segment in the Cp. dialect (but see 4 below).

1 p appears in forms in Cp. for which
   (a) The cognate forms are spelt with p, and ff, f and pf in
       OHG (Prokosch, 1939: §21, §26);
   (b) The PE reflexes contain the segment [p] (Gimson, 1980:
       §8.06);
   (c) p is the universal spelling that appears in OE MSS
       (Campbell, 1959: §50.s)

There can, therefore, be little hesitation in the suggestion that p
represents [p] in the forms in (2.1.225)

(2.1.225)

acisculum : piic 'pike, point' 49
arula : fyrponne 'fire-pan' 208
      (OHG pfanna, OFr. panne)
cucumis : popag 'poppy' 611
      (Lat. papaver)
ledo : nepflood 'spring tide' 16
bolides : sundgerd in scipe 'line for testing the depth
      of water' 319
      (Go., OS, OFr. skip, OHG skif)
maculosus : specfaag 'speckled, spotted' 23

1 Note that initial [p] is rare in OE except in loan words.

2 Given that all other non-velar consonants apparently develop
velarised allophones before unstressed back vowels (§2.1.18.4.2), it
is reasonable to suggest that [p] appears in
a(c)erabulus: mapuldur 'maple tree', 51.

3 p in gemination: pp

pp appears in Cp. in forms for which

(a) The W-G cognates have pp, and ff and pf in OHG (Prokosh, 1939: §30; §26);
(b) The PE reflexes have [p] (Gimson, 1980: §8.07);
(c) p is occasionally found in OE MSS (Campbell, 1959: §66).

As gemination is not regularly attested in PE, the main evidence for the suggestion that pp represents [pp] in the forms in (2.1.226) comes from the Germanic cognates.

(2.1.226)

campus: cleppettende 'palpitating' 411
(OFr. clappia, OHG klapfen)
blohonicula (bothonicula): stoppa 'stop, bucket, pail' 309
citonium (cydonia): goodappel 'crab apple' 477
(OHG aphul, aphol ON epli)

4 Occasionally the graph p appears in forms for which

(a) The cognates have f;
(b) The PE reflexes contain the segment [f];
(c) f is the more usual spelling in OE MSS

Given the diachronic evidence, there can be little doubt that [f] should be the segment represented in the forms in (2.1.227). The appearance of p can be regarded purely as the result of graphic variation (Campbell, 1959: §57.2).
amentis : sceptloum 156
amentum : sceptog 145

'shaft attached to the strap of a missile'
(OFr. sceaft, 'stick, pole, shaft', OS skaft, OHG schaft)

Significantly, due to the development discussed by Campbell (1959: §418), the contrast between [f] and [p] is neutralised (at least temporarily) before [s] (see §2.1.19.4). This may therefore explain the occasional interchange of the graphs p and f in other contexts, as is the case with the forms in (2.1.227).

Thus the graph p is used in the orthographic system of the Cp. dialect to represent similar segments to those which it represents in PE and Latin texts. Its use for both velarised and non-velarised segments can be explained with reference to the phonemic status of these particular phones: no contrast between [p] and [pʰ] ever materialises in OE.

2.1.31 m

The graph m is used in the spelling systems of PE and Latin to represent a bilabial nasal, see (2.1.228).

(2.1.228)

<table>
<thead>
<tr>
<th></th>
<th>PE</th>
<th>Latin</th>
</tr>
</thead>
<tbody>
<tr>
<td>meal</td>
<td>small</td>
<td>miles</td>
</tr>
<tr>
<td>stem</td>
<td>(Gimson, 1980: §8.21)</td>
<td>mons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Allen, 1965: 30-32)</td>
</tr>
</tbody>
</table>
An investigation of available evidence suggests that the graph represents similar segments in the Cp. dialect.

1 m generally appears in forms in Cp. for which
   (a) The cognates are spelt with m (Prokosch, 1939: §29);
   (b) The PE reflexes contain [m] (Gimson, 1980: §8.21);
   (c) m is the invariable spelling that appears in extant OE MSS
       (Campbell 1959: §50.6).

The suggestion that m represents [m] in the forms in (2.1.229) is therefore fairly uncontroversial.

(2.1.229)

ment(h)a : minte 'mint' 23
abortus : misbyrd 'abortion, misbirth' 36
   (OHG missa- missi-, OS, CLG, OFr. mia-)
culix (ex) : mygg 'midge' 617
   (OHG mucca, mugga)
cassium (is) : helm 'helmet' 422
   (Go. hilme, OHG helm)
cinnamomum, resina : cymin 'cummin' 475
aspera : unsmopi 'rough, unsmooth' 232
calvariae locus : cualmatou 'place of execution' 2
   (OS, OHG gualm)
bitumen : lim 'lime' 295
   (OHG lim)

[m] also appears in the dative plural suffix -um < PG [umiz]
(Campbell 1959: §571), as in the forms in (2.1.230).
(2.1.230)

caverniculis: holum 'hole' 416
blattis: bitulum 'beetle' 307
(PG [-umiz]: Campbell, 1959: §571)

2 The appearance of digraph spellings for Pre-OE front monophthongs suggests that a velarised reflex occurs before unstressed back vowels as in the form

beneficium: freomo advantage, profit, 286

[æ] is presumably also attested in the forms in (2.1.231) despite the lack of direct evidence for this in the spellings that occur.

(2.1.231)

cicad(ae): seccgescere vel haman 'grass hopper' 464
conclamatus (commitus): loma 'lame' 575
(OS lamo, OFr. lam, lom, OHG lam)

3 m also appears in forms in Cp. for which

(a) The Germanic cognates are spelt with m, om, am, um, em;
(b) The PE reflexes have [m] or [æm];
(c) Alternative spellings in em, um, om appear in extant OE material.

For the reasons discussed with reference to the segments represented by l in §2.1.24.3, it must be acknowledged that [m] (or
(am) is represented in the forms in (2.1.232).

(2.1.232)

(h)alitus : æthm 'breath, breeze' 130
    (OFr. ethma, OS athom, OHG atum, adum)

carbasus : segibosm 'the swelling of a sail' 412
    (OS, OFr. bosm, OHG buosam)

4 In the form

cados : ambras 'dry measure', 347
    (OS embar, ember, OHG einpar, eimber, cf. an 'one',
    beran 'to carry')

etymological evidence suggests that original [n] occurred in PG. The segment represented is presumably [m], the nasal having been assimilated to the following stop. (Campbell, 1959: §484). Synchronically, of course, the opposition between [n] and [m] is suspended in this environment 135.

The use of m in Cp., therefore, does not differ radically from its use in the orthographic system of PE or Latin. That a single graph can represent more than one phonetic segment is possible when it is considered that the segments concerned never enter into phonemic contrast.

2.1.32 n

The graph n is generally used to represent an alveolar nasal in the spelling systems of PE and Latin, see (2.1.233).
The graph occasionally represents a velar nasal [ŋ] in PE, although it must generally be claimed that ng represents this segment (Gimson, 1980: §8.23). 1

An examination of available evidence suggests that the graph represents a similar range of segments in the Cp. dialect. n can, however, be said to represent [ŋ] on more occasions than is the case in the orthographic system of PE, as the sequence ng in OE cannot be interpreted as representing the velar nasal alone.

1 Firstly n appears in forms in Cp. for which
   (a) The Germanic cognates have the spelling [n] (Prokosch, 1939: §29);
   (b) The PE reflexes contain the segment [n] (Gimson, 1980: §8.22);
   (c) n is the only spelling that appears for the segment concerned in OE MSS (Campbell 1959: §50.1).

There is therefore little controversy over the claim that [ŋ] should be represented by n in the forms in (2.1.234).
ab borea (a borea): eastanor\pan 'north easterly' 44
(OS nor\p, OFr. north)
cartilago: nes\gristle 'gristle or cartilage of the nose' 350
(OFr. nose, OE nosu, OHG nasa)
mappa: cneori\b 'knee curtain' 21
(Go. kniu, OS knio, kneo, OHG kniu, kneo, OFr. kne, kni)
aurocalcum (orichalcum): groenia\gr 'green' 255
(OHG gruoni, OS groni, OFr. grena)
cartellus: windil 'basket' 348
alumna: fostorbearn 'fosterchild' 131
(OS barn, OFr. bern, OHG, Go. barn, PE 'bairn')
byssum: tuin 'linen, twine' 343
acer: bean 'bean' 460
(OHG pona)
agitatio: un\stilnis 'absence of rest, motion' 106
argutia: gle\unisse 'wisdom' 203
(cf. OHG -nessi, -nissa, -nissi)
alternantium: ste\nendra 'to alternate' 126
(PG [andi] Campbell 1959: §731g)
auspiciantur: haisadon 'to foretell, auger' 251
(PG [un] (ibid: §736d))
acitelum: hromsan crop 'garlic' 57
(PG [an] (ibid: §616))
accetum (i): gefectodne 'fetched' 63
(PG [an\n] (ibid: §640))

2 Again, it must be allowed that a velarised variant (which in the present account will be represented as [\v]) occurs before unstressed back vowels, as in the form

battat: geonath 'to yawn', 269
(OS ginon, OHG ginan)
and presumably also in

acega : holthona 'wood snipe', 54
(cf. hanu 'cock', Go. hana, OS hano, OHG hano)

although this is not directly reflected in the spelling.

3 n also appears in forms in Cp. for which
(a) The cognate forms have an, on, un, en;
(b) The PE reflexes contain [ŋ] or [en] (Gimson, 1980: §8.22.4);
(c) Alternative spellings in OE MSS are en, on, un.

As discussed with reference to l (§2.1.24.3), [ŋ] is in all probability the segment represented.

Thus n represents [ŋ] in the forms in (2.1.235)

(2.1.235)

æquipensum : ebnwage 'even weight' 98
(OS eban, OFr. ivin, even, OHG eban, Go. ibns)

(nycti) corax : hræfn 'raven' 553
(OHG hraban)

4 The possibility of the existence of voiceless variants, particularly after initial [x] must also be acknowledged, as is the case in the form

abelena : hæselhnutu 'hazelnut' 33
(cf. OHG hnuzu)
Forms in which the graph *n* appears before *g* must be given special consideration.

5.1 In such forms

(a) The Germanic cognates contain the sequence *gg* (Go.) or *ng*, which corresponds to *ng* in Cp. (Prokosch, 1939: §24.1);

(b) The PE reflexes contain the segment [ŋ] (Gimson, 1980: §8.23);

(c) *ng* is the only graphic sequence that occurs in OE MSS.

(a) On the evidence of the cognates, the PG sequence [ŋg] can be reconstructed, and it is generally assumed (and phonetically natural) that the nasal should have a velar rather than alveolar realisation in this environment (Campbell, 1959: §398). It can be claimed that this segment is inherently 'velar', and distinct from the velarised alveolar segment that appears before unstressed back vowels discussed in 2 above. For this reason the respective segments will be given different representations in both the traditional and dependency notational systems adopted in this thesis

(b) Clearly by PE, the velar stop has been lost (although its retention in certain morphophonemic alternants (e.g. 'longer') and forms in non-standard dialect provide evidence of its existence (Gimson, 1980: §8.23)). This results in the segment having a different phonological status at the two stages in the history of the language, and accounts for the fact that *n* must be said to represent [ŋ] in the forms in (2.1.235), whereas in PE [ŋ] is
generally represented by the sequence \( ng \).

It can be claimed therefore that \( n \) represents \([n] \) in the forms in (2.1.236)

\[
\begin{align*}
\text{aconito (a)} & : \text{pungas} \quad \text{'a poisonous plant'} \quad 45 \\
\text{cassidele} & : \text{pung} \quad \text{'small bag, purse'} \quad 391 \\
(\text{Go.} \ puggs, \ \text{OHG} \ pfung)
\end{align*}
\]

and in the derivational affix \(-ung\), as in the forms in (2.1.237)

\[
(2.1.237)
\]

\[
\begin{align*}
\text{appetitus} & : \text{gitsung} \quad \text{'desire, avarice'} \quad 184 \\
\text{harmonia} & : \text{suinsung} \quad \text{'melody'} \quad 195 \\
\text{circinatio} & : \text{oefsung} \quad \text{'shearing'} \quad 474
\end{align*}
\]

It is also likely that \( n \) represents \([n] \) before \([k] \), as in

\[
\begin{align*}
\text{adrogantissime} & : \text{wlonclice} \quad \text{'proudly'}, \quad 86 \\
(\text{OS} \ \text{wlank})
\end{align*}
\]

5.2

As noted in §2.1.15.2.4 3.2; 4.2; §2.1.17.2.2; 3.2, the reflexes of PG \([k] \) and \([y] \) palatalise in certain environments in OE. It is reasonable to suppose that a similar process would affect a preceding nasal, and therefore \([n] \) or \([n] \) can be suggested in the forms in (2.1.238) (Campbell, 1959: §60.2).
(2.1.238)

(a) bitorius : erdling 'farmer' 303

carbunculus : spryng 'ulcer, sore' 351
(OHG aho spring)

confusione : gemengiunge 'mixture, confusion' 522
(OS mengian, OHG chi-menghid, OFr. mengia)

(b) antedo (antidotum) : wyrtdrenc 'herb-drink' 166
(OHG trankjan, trenkjan, Go. dragkjan)

bariulus : reagufinc 'the name of some bird' 283
(OHG finco, PE 'finch')

The difference in the PE reflexes of the nasals in the forms in (2.1.238)(a) and (b) respectively, can be explained with reference to the subsequent history of the voiced and voiceless velar stops. As the voiceless stop became assibilated, the nasal would remain 'front' and its realisation in PE is basically alveolar. The voiced stop, however, reverted to a segment that was basically velar (Campbell, 1959: §436) and so presumably did the nasal that preceded it 140.

Thus the graph n represents a similar range of segments in Cp. to those it represented in the PE orthographic system, although the difference in phonemic status of [ŋ] in the two stages of the language means that it can be claimed that n alone is used to represent [ŋ] more frequently in Cp. than is the case in PE. That it can represent such a wide range of phonetically different segments can once more be explained with reference to the phonemic status of the segments concerned.
Chapter 2.2

Phonological analysis

§2.1 described the broad phonetic values of the segments represented by the various graphs that appear in the Cp. MS. In §2.2 the aim is to complete the phonological analysis of the dialect represented by establishing a phonemic inventory and, where possible, formulating realisation rules for the phonemes concerned.

§1.3.1.2.1.1 claims that ultimately the phonological analysis of any historical dialect must be based on a consideration of the synchronic distribution of the graphs in the texts that represent it. The value of evidence from related dialects and in particular any diachronic developments that can be supposed to operate between them is also emphasised.

Thus, to reach a satisfactory phonological analysis of the dialect represented by Cp. the present account will consider

1 The distribution of the graphs in the Cp. MS itself
2 The diachronic developments that can be assumed to affect the linguistic continuum to which Cp. belongs.

While for the most part the analyses based on these two types of evidence coincide, it is sometimes the case that discrepancies arise between them.

As discussed in §1.3.2.1.2.1, these can often be explained with reference to the natural effects of working within an orthographic system or the factors
that influence the development of that system. Usually, therefore, it is not difficult to reconcile the analyses based on the two different types of evidence and in this way a satisfactory final account can be obtained.

2.2.1 The vowel system

1 Long vowels

The evidence for assuming that a phonemic contrast operates between pairs of long and short vowels in OE in general and presumably the Cp. dialect in particular (although this is not as a rule specified in the spellings of the Cp. MS itself) has been discussed in §§1.3.2.1.1:§1.3.3.1.1:§1.3.4.2.1(ii). §§2.1.1-2.1.13 established that the following long vocalic segments potentially occur in the Cp. dialect: [长途], [长途], [长途], [长途], [长途], [长途], [长途], [长途], [长途], [长途] and possibly [长途].

These are represented by the graphs

a, e, æ, o, u, y, ea, eo, io, iu, y and oo

Of course, double graphs appear sporadically, generally serving to indicate vowel length.

1.1 The distribution of the graphs in the MS

This section will consider the phonemic analysis that can be reached on the basis of a consideration of the distribution of the graphs as they appear in forms in the Cp. MS isolating, where possible, minimal and
analogous pairs and failing this a consideration of forms in which the graphs can be seen to occur in similar contexts. Due to the fact that the body of evidence considered is fairly limited it is not generally possible to find pairs that are strictly 'minimal'. However, a consideration of the graphs as they appear in the roughly analogous environments cited in (2.2.1) will suffice to reveal the majority of potential contrasts.
(2.2.1)

**Segment**

<table>
<thead>
<tr>
<th>Environment</th>
<th>Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>/k/ (k)</td>
<td>/(X)/ (h)</td>
</tr>
</tbody>
</table>

Before

- Before /k/ (k)
- Before /\(X\)/ (h)

<table>
<thead>
<tr>
<th>Q::</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>(g@c)</td>
<td>(l@c)^* (2.1.47)</td>
</tr>
<tr>
<td>e::</td>
<td>ieces^* (2.1.21) (\text{theh}^* (2.1.177)) (\text{garleec}^* (2.1.21))</td>
</tr>
<tr>
<td>i::</td>
<td></td>
</tr>
<tr>
<td>o::</td>
<td></td>
</tr>
<tr>
<td>u::</td>
<td></td>
</tr>
<tr>
<td>y::</td>
<td></td>
</tr>
<tr>
<td>ae::</td>
<td>leactrogas^* (2.1.102)</td>
</tr>
<tr>
<td>e:o</td>
<td>peohsan^*</td>
</tr>
<tr>
<td>i:u</td>
<td></td>
</tr>
<tr>
<td>p::</td>
<td></td>
</tr>
</tbody>
</table>

wase (2.1.3)

resung

merciseren (2.1.95)
goos (2.1.131)

prustfel

eastansudan (2.1.102)

beost (2.1.212)
Before /r/ (\r)  
baar (2.1.195)  
ætgære  
beer (2.1.20)  
scirde (2.1.171)  
boor

Before /l/ (\l)  
haalstaan  
dæle  
el (2.1.20)  
ulæ (2.1.84)  
deortuun (2.1.108)  
fyrcruce (2.1.187)  
earwicga (2.1.142)  
deortuun (2.1.108)  
bean (2.1.224)  
fræde (2.1.37)  
hreod  
getiunge  
gestrion (2.1.117)  
gebjudde (2.1.180)  
Before [n], /n/ (\n)  
teblstan (2.1.14)  
derortuun  
gobiude  
Before /d/ (\d)  
uuoedende
The following forms have not been glossed in §2.1

<table>
<thead>
<tr>
<th>Form</th>
<th>Graph</th>
<th>Gloss</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>crustulla</td>
<td>haalstan</td>
<td>'hailstone'</td>
<td>604</td>
</tr>
<tr>
<td>ansatæ</td>
<td>atgære</td>
<td>'javelin'</td>
<td>167</td>
</tr>
<tr>
<td>conjectura</td>
<td>resung</td>
<td>'conjecture'</td>
<td>504</td>
</tr>
<tr>
<td>dasile</td>
<td>boor</td>
<td>'chisel'</td>
<td>7</td>
</tr>
<tr>
<td>bitiligo(v)</td>
<td>blæc</td>
<td>'leprosy'</td>
<td>296</td>
</tr>
<tr>
<td>colonus</td>
<td>gebuur</td>
<td>'dweller'</td>
<td>493</td>
</tr>
<tr>
<td>abditis</td>
<td>gehyddum</td>
<td>'to hide'</td>
<td>43</td>
</tr>
<tr>
<td>corimbos(y)</td>
<td>leactrogas</td>
<td>'bunch of berries'</td>
<td>540</td>
</tr>
<tr>
<td>semispatium</td>
<td>peohsæx</td>
<td>'a short sword 1832 that can be worn on the thigh'</td>
<td></td>
</tr>
<tr>
<td>ferula</td>
<td>hreod</td>
<td>'reed'</td>
<td>9</td>
</tr>
<tr>
<td>apparitione</td>
<td>getiunge</td>
<td>'agreement'</td>
<td>185</td>
</tr>
<tr>
<td>bac(c)hantes</td>
<td>uuowedende</td>
<td>'to be mad'</td>
<td>274</td>
</tr>
<tr>
<td>cuculus</td>
<td>gæc</td>
<td>'cuckoo'</td>
<td>618</td>
</tr>
</tbody>
</table>

2. Forms where different graphs appear representing a vowel in the same lexical item (which of course suggests that the phonemic status of the segments concerned requires closer investigation) are marked with *.  

3. *iu* and *eu* spellings have been disregarded as they are in all probability simply graphic variants of *eo* and *io* by the time of the composition of the Cp. MS (§2.1.12; §2.1.13).  

4. The cases where *ea* appears for the reflex of PG *[iu]* and *[eu]*, and *eo* for the reflex of PG *[au]* (§2.1.9.3; §2.1.10.1.4; §2.1.13) have also been ignored as it is fairly certain that these forms result from scribal error or confusion and are of no phonological significance.
Essentially the spelling evidence has been given the most literal interpretation possible. It is assumed that (a) a particular graph or digraph will consistently represent the same phonetic segment, irrespective of the environment in which it occurs (b) graphs will represent segments with the same quality whether the nucleus type is long or short (see §2.1.1.1 and the references therein). The only instances where these assumptions will be disregarded are in cases where different graphs or digraphs appear in the same lexical item. As noted in §1.3.1.2.1.1, when graphs appear in 'parallel' distribution this usually indicates that the segments they represent are in phonemic contrast. If, however, the contrast between the graphs concerned does not serve to convey a distinction in meaning it is clear that no phonemic opposition can be motivated and either graphic or phonological 'free variation' is involved. On the basis of this evidence alone it is accepted at this stage in the account that two different graphs or digraphs may represent the same phonetic segment.

On the evidence of (2.2.1) we can attempt an analysis of the long vowel system of the Cp. dialect, as shown in (2.2.2). There would seem to be eleven segments [a:], [e:], [o:], [u:], [i:], [y:], [ə:], [e:ʊ], [i:ʊ], [ʌ] which appear in the relevant environments as follows:
Before Before Before Before Before Before Before
/k/ /x/ /s/ /r/ /l/ /n/ /d/
[e:ɔ] [e:] [e:] [e:] [e:] [e:] [e:]
[a:] [a:] [a:] [a:] [a:] [a:] [a:] [a:] [a:]
[æ:] [æ:] [æ:] [æ:] [æ:] [æ:] [æ:] [æ:] [æ:] [æ:]
[i:] [i:] [i:] [i:] [i:] [i:] [i:] [i:] [i:]
[o:] [o:] [o:] [o:] [o:] [o:] [o:] [o:] [o:]
[u:] [u:] [u:] [u:] [u:] [u:] [u:] [u:] [u:]
[e:ɔ] [e:ɔ] [e:ɔ] [e:ɔ] [e:ɔ] [e:ɔ] [e:ɔ] [e:ɔ] [e:ɔ] [e:ɔ]
[y:] [y:] [y:] [y:] [y:] [y:] [y:] [y:] [y:]

*The graphs which normally represent these segments (e, æ, ea and eo and e respectively) appear in free variation in the same lexical item.
While there is no single environment in which all eleven segments can be seen to contrast, the phonemic status of the following, which presumably enter into opposition before /r/, is relatively assured:
/e:, /ə:/, /i:, /o:, /u:, /æ:, /e:, /æ:/ and /y:/.

Once more, it must be noted that the data base consulted is relatively limited (§1.3.1.2.1.2). The fact that every possible contrast is not attested in each environment can be attributed to gaps in the available evidence rather than considered to be of any phonological significance. This is particularly relevant to the phonemic status of [ø:] and [iːu]. It is reasonable to suggest that these segments represent phonemes which are comparatively rarely attested in OE and would presumably be seen to appear in a wider range of environments were a greater range of evidence considered.

The forms in (2.2.3) show 'free variation' in the spelling of their stressed vowel.

(2.2.3)

(a) leactrogas
    leac
    gaarleec

(b) gæc
    iese

(c) thegh
    peohsæx
It seems reasonable to suggest therefore that despite the spelling variation the same phonetic segment will be represented by the graphs that appear in the forms in (2.2.3) (a), (b) and (c) respectively. This variation can be explained by the fact that in the environments concerned, i.e. before /k/ in (2.2.3) (a) and (b) and /χ/ in (2.2.4) (c), the contrasts between the segments normally represented by ea, e, ee and æ ([æː], [æː] and [æː]) on the one hand and eo and e ([eːo] and [eː]) on the other, have been suspended. It is necessary, therefore, to posit the archiphonemes //Æ:// and //E://, which represent the suspension of contrast between /æː/, /eː/ and /æːʊ/; and /eː/ and 1 /eːo/ respectively.

The broad phonetic value of the alloarchiphones that represent //E:// and //Æ:// can be recovered from a consideration of (a) the diachronic developments that may be assumed to have brought about the neutralisations, and (b) the relative frequency of the various spellings that appear.

Thus, on consideration of the distribution of the appropriate graphs in the Cp. MS the inventory of the long vowel phonemes of that particular dialect can be established as in (2.2.4).
(2.2.4)

\(\alpha:/ \quad /e:/ \quad /i:/ \quad /o:/ \quad /u:/ \quad /\varepsilon:/ \quad /\varepsilon:\varepsilon:/ \quad /e:o:/ ;\)

\(\bar{\varepsilon}/u/\) and \(\bar{\varepsilon}/i:/\) seem to have a fairly limited distribution.

\(\bar{\varepsilon}:/\) appears for \(\bar{\varepsilon}/e:/\), \(\bar{\varepsilon}:\varepsilon:/\) and \(\bar{\varepsilon}/e:/\) before \(/k/\) and

\(\bar{\varepsilon}:/\) for \(\bar{\varepsilon}/e:/\) and \(\bar{\varepsilon}:o:/\) before \(\bar{\varepsilon}:/\).

1.2 The diachronic development of the long vowel system

This section will examine the diachronic developments that affect the long vowel sub-system of the linguistic continuum to which the Cp. dialect belongs. While the developments that affect the language in the prehistoric OE period (see Campbell, 1959: Ch.V) are the most significant, evidence from the historical English period and that of PE dialects will also be given brief consideration.

However, certain 'minor' developments that affect a restricted number of lexical items are disregarded in the present account as they are not crucial to the establishment of the basic phonemic inventory. An example of such a development would be 'compensatory lengthening' discussed by Campbell (1959:§§240-245).

On the basis of the account given by Campbell (1959: §99) it can be deduced that the long vocalic segments in (2.2.5) had phonemic status in PG.
and the diphthongs

\( /\text{ai}/ /\text{au}/ /\text{eu}/ /\text{iu}/ \)

Although no phonemic contrast operated between long and short diphthongal nuclei in PG, the reflexes of PG diphthongs are to be considered 'long' in the synchronic vowel system of OE. This is due to the fact that contrasting short nuclei arose as a result of developments in the prehistoric period, see §2.2.2.2.2.3;2.2.7 and Campbell (1959: §§276;277).

1.2.1

In §120, Campbell (op. cit) describes developments which simply have the result that /ai/, /au/, /iu/ and /eu/ appear in an increased number of lexical items.

1.2.2

According to §§127-128 (op. cit), PG /æ:/ (W-G /a:/, see §2.1.2.1) developed to a segment that eventually merged with the reflex of PG /o:/, i.e. [o:], before nasals and [e:] in all other environments (§2.1.5.1.2).

This results in the temporary (see 1.2.5.i) loss of /æ:/ from the long vowel system of Pre-OE and swells the membership of the classes of words that contain the phonemes /e:/ and /o:/.
1.2.3

In §134 (op. cit) Campbell describes the various developments that affect the W-G diphthongs:

/ai/ monophongises to become the 'new' phoneme /ɑː/;

/au/ becomes (eventually) the phoneme /ɔːː/ (see §2.1.1.1; §2.1.9.1 and the references therein);

/æu/ becomes /eːo/ and /iu/ apparently remains as such in Pre-OE (§2.1.10.1; §2.1.11.1 and the references therein).

The phonemic inventory of the long vowel system at this stage in its history can therefore be represented as in (2.2.6).

(2.2.6)

/ɑː/ /eː/ /iː/ /œː/ /uː/ /ɔːː/ /æː/ /eːo/ /iːu/

1.2.4

The effects of 'breaking and retraction' as outlined by Campbell (1959: §§139-153) generally result in the redistribution of existing phonemes throughout the lexicon:

/eːo/, /iːu/ and /æː/ occur in a greater number of lexical items.

1.2.5

The process of 'i-mutation' (Campbell, 1959: §§190-202) can be seen to have the following effects:
(i) (§197)

/ɑ:/ becomes /æ:/ and the long vowel sub-system therefore re-acquires a low front phoneme assuming, of course, that no evidence (direct or indirect) of the conditioning environment (i.e. the underlying high front segment) is synchronically attested in the forms that appear (i.e. a 'code shift' is entailed: Colman and Anderson, 1983: 170; Colman, 1983b:ft. 17 and the references therein).

(ii) (§200)

As /æ:/ develops to /e:/ in i-mutation environments in the Cp. dialect this simply means that more lexical items will contain the long mid monophthong /e:/ rather than the diphthong /æ:/.

(iii)

The back mid rounded vowel apparently undergoes the pattern of development outlined in (2.2.7), see Campbell (1959: §198) and §2.1.2.1.3.

(2.2.7)

/o:/ > [ø:] > /ø:/ > /e:/

The appearance of oe spellings (in forms where all evidence of the underlying high front segment has been lost) in the Cp. MS indicates that the phonemic split of [ø:] > /ø:/ has definitely occurred in the dialect represented. The question remains, however, as to whether or not the segment has unrounded and merged with
the phoneme /e:/.

Campbell (1959: §198) implies that /œ:/ (i.e. 'oe') 'remains in Angl. texts'. On the other hand, direct evidence that the unrounding process has in fact taken place in Cp. is to be found in spellings such as fræfeleo (2.1.23), where e appears for the reflex of PG /o:/.

The existence of 'back spellings' (§1.3.5.2.1.3.ii and the references therein) as in the forms suoesende and bloestbelgas where oe appears for the reflexes of Pre-Anglian /e:/ (PG /æ:/) confirms the merger of /œ:/ and /e:/ beyond any reasonable doubt (§2.1.8.1).

Clearly, there is no longer any distinction between the segments once represented by oe and e and the graphs are to be considered equivalent. Thus the oe spellings, despite the fact that they are frequently attested in the Cp. MS, must be assumed to be 'archaic' (§1.3.2.2.1.1.i;§1.3.5.2.1.1.b.iii).

(iv)

The high back segment in i-umlaut environments apparently undergoes a similar pattern of development (ibid: §199 and §2.1.7.1), as shown in (2.2.8).

(2.2.8)

/u:/ > [y:] > /y:/ > /i:/

(see further Campbell, 1959: §§316-317)

In this case, however, there is no evidence of confusion
in the use of the graphs ı and ı in the Cp. MS . The
graph ı always appears for the reflex of PG /u:/ in an
'i-umlaut' environment. The form fyrponne is an
appropriate example. As all evidence of the underlying
high front segment in the unstressed syllable has been
lost, it can be maintained that /y:/ has phonemic status
in the dialect represented by Cp. and has yet to merge
with its unrounded counterpart.

The proposed inventory can therefore be seen to
contain the phonemes listed in (2.2.9) at this stage in
its development.

(2.2.9)
/a: /ũ:/ /i:/ /y:/ /o:/ /u:/ /e:ɔ/ /e:o/ /i:u/

1.2.6

The effects of smoothing (Campbell, 1959: §222) on
the system must now be considered. Due to the operation
of this development /e:ɔ/ becomes /e:/ and subsequently
/e:/, /e:o/ becomes /e:/ and /i:u/ develops into /i:u/
before the reflexes of PG [k], [x] and [ɔ] (§2.1.2.1.1;
§2.1.3.1.3 and the references therein). Evidently
therefore, the opposition between /e:/, /e:/, /e:ɔ/ and
/e:o/ was eventually neutralised in these environments,
[e:] being the only segment that occurred. The contrast
between /i:/ and /i:u/ was presumably similarly
suspended (but see 1.2.7 below).

The existence of æ spellings for PG /au/ in the Cp.
MS can only be explained as an indication that the processes which resulted in this neutralisation had been completed in the dialect represented. It can be seen therefore that the extent of neutralisation in the system suggested in (2.2.10) is in fact far more far-reaching than a consideration of the spelling evidence alone would imply, see (2.2.4). In fact, /e:o/, /e:/, /æ:/ and /æ:ə/ no longer contrast before any of the reflexes of the PG velar consonants. Thus /Eə/ can be posited as the only archiphoneme that appears in these environments, and, given the fact that æ spellings prevail in later Anglian MSS (ibid: §225), it is reasonable to assume that [æ:] must be the broad phonetic value assigned to the relevant alloarchiphone. The æ, eo and ea spellings are therefore to be explained as orthographic 'archaism', which appear by virtue of the fact that the orthography is slow to reflect developments that have taken place in the spoken language.

1.2.7

Campbell (1959: §294) suggests that the Pre-OE diphthongs /iu/ and /e:o/ eventually merged in /e:o/ in most OE dialects. iu and io spellings are attested for Pre-OE /iu/ in the Cp. MS (§2.1.13;§2.1.10.1) which may be interpreted as suggesting that the contrast either still existed in the dialect represented or had done so until a comparatively recent period. The appearance of
certain eo spellings for reflexes of PG /iːu:/ (see §2.1.10.1.3) suggests that the latter situation is the more likely: the opposition in all probability no longer occurred in the dialect in question and the io spellings are therefore best explained as orthographic 'archaisms'.

Thus the inventory of long vowel phonemes shown in (2.2.10) can be suggested for the dialect represented by Cp. on the evidence of the diachronic developments that are assumed to have affected the linguistic continuum to which it belongs.

(2.2.10)

/a:/ /æ:/ /iː/ /yː/ /oː/ /uː/ /æː/ /eː:/

and /æː/ representing the suspension of contrast between /æː/ /eː:/ /eː/ and /æː/ before velar consonants.

1.3 The final analysis

Evidently, the analysis represented in (2.2.10) can for the most part be reconciled with that suggested in (2.2.4).

1.3.1

The fact that [øː] and [iːu] are not to be accorded phonemic status (if, in fact, they exist at all) conveniently explains the scarcity of oe and io.
spellings in the majority of contexts (see 1.1 above).

1.3.2

The suggestion that neutralisation of the /æ:/ ≠ /e:/; /æ:/> ≠ /e:o/ opposition before velar consonants should account for the orthographic variation before h, k, g, gh and so on is confirmed and the extent of this neutralisation can be seen to be more expansive than the data consulted from Cp. would imply.

1.3.3

It is also worth noting briefly that a consideration of developments that affect the language in the historical English period also confirms this analysis.

The reflexes of most of the phonemes attributed to Cp. generally retain their phonemic status in PE, although their realisations are, of course, very different, see (2.2.11).
The reflexes of the Cp. phonemes /æ:/ and /e:/ have merged in PE /i:/ but this can be seen to be the result of developments subsequent to the OE period (Gimson, 1980: §7.09).

Similarly, PE does not contain the phonemes /y:/, /æ:/, and /e:o/. The loss of these from the system can, however, once more be attributed to developments subsequent to the period at which the Cp. MS was composed (see Campbell, 1959: §§329;318).

On a consideration of both the synchronic distribution of the spellings that appear in the Cp. MS and the historical developments that can be assumed to occur in the linguistic continuum to which the dialect represented belongs, the inventory of the long vowel system can be represented as in (2.2.12). Most of the discrepancies that arise between the analyses based on the types of evidence considered in 1.1 and 1.2 respectively have been satisfactorily explained with reference to the fact that the written language is

<table>
<thead>
<tr>
<th>Cp. Phoneme</th>
<th>PE Reflex</th>
</tr>
</thead>
<tbody>
<tr>
<td>/i:/</td>
<td>/ai/</td>
</tr>
<tr>
<td>&quot; /o:/</td>
<td>/u:/</td>
</tr>
<tr>
<td>&quot; /u:/</td>
<td>/au/</td>
</tr>
<tr>
<td>&quot; /æ:/</td>
<td>/æ:/</td>
</tr>
</tbody>
</table>

(see the relevant sections of §2.1 and Gimson, 1980: Ch. 7)
generally slow to reflect developments that have occurred in the spoken.

(2.2.12)
/æ:/ /ɑ:/ /i:/ /y:/ /o:/ /u:/ /æː/ /eː/
//E:// before velar consonants.

2 The short vowel system
§2.1.1–§2.1.13 established that the following short vocalic segments may have existed in the Cp. dialect: [ɑ], [æ], [ɔ], [ə], [e], [eo], [i], [iu], [o], [u], [y] and [ø], which are represented by the following graphs and digraphs:
A, æ, o, e, i, u, y, oe, io, iu, eo, eu and ea.

2.1 The distribution of the graphs in the MS
This section attempts to arrive at an analysis of the short vowel system of the dialect represented by the Cp. MS based solely on a consideration of the distribution of the graphs that appear.

As noted in 1.1, the limited nature of the data base considered means that it is not always possible to find exact minimal or even analogous pairs on the basis of which phonemic contrasts may be established. If, therefore, different segments appear in contexts which are relatively similar, this is taken as fairly conclusive evidence that a phonemic contrast should operate between them.
As will be seen in 2.2 the short vowel system of PG undergoes many contextually determined developments in the prehistoric OE period. It is therefore necessary to consider the behaviour of the various short vocalic segments in a wide range of sometimes fairly specific contexts in order to arrive at a satisfactory analysis of their synchronic status in the phonological system.

As with the analysis of their long counterparts, any *iu* and *eu* spellings (§2.1.12;§2.1.13) are disregarded in the present account, as are instances where confusion has plainly arisen in the use of the digraphs *ea* and *eo*. Similarly, the spelling evidence is given as literal an interpretation as possible along the principles outlined in (2.2.1) ft. 5.

(2.2.13) reveals the contrasts that operate in various environments in the Cp. dialect, as suggested by the spelling evidence. Once more, any free variation in the graph representing the stressed vowel in identical lexical items is indicated by *. 
(2.2.13)

Segment (1)  (2)  (3)  (4)  (5)  (6)
  _ft.c_  _ft.c_  _ft.c_  _/1/+_c  _/1/+_c  _/r/+_c
+ft.v  +bk.v  +ft.c  +i  +ft.c

[.] clader-  heard-  ald
         sticca  hara
         (2.1.10)  (2.1.9)  (2.1.8)

[.] del

(2.1.86)  water-
         Grux*
         (2.1.49)

[.] geabuli

(2.1.105)

[.] heard-
      hara
      (2.1.198)

[.] spel

(2.1.186)  water-
         treu-
         helmes
         erdlings*
         (2.1.191)  (2.1.141)

[.] heor

(2.1.44)  wosend
         (2.1.196)  weorod
         (2.1.196)
         secflbenan

[.] geurit

(2.1.219)  scrip-
         wiloc-
         scel*
         wilde
         (2.1.57)

[.] wioloct

(2.1.187)

[.] tot

(2.1.225)  popaq
         (2.1.88)  holum
         (2.1.90)
         duolma

[.] ßus

(2.1.181)  binwine
         (2.1.187)  hesel-
         hnutu
         (2.1.124)

[.] oefsung

[.] cese-
    ryssel
    fryscu
    (2.1.213)

[.] fulled-
    tlyb
    (2.1.194)

[.] tyrb

(2.1.138)
The following forms have not been glossed in §2.1

alviolum(eo): aldaht 'a trough (?), channel(?)' 124
Bosworth and Toller (1898: Supplement)
adfligit: gehuah 'to humble' (see ft. 16) 84
bombosa: hlagulendi 'deep sounding' (see ft. 16) 317
cautione gewrit 'something written' 418
adsutæ: gesiuwide 'sown together' 68
artura: tot 'projection' 206
circinatio: oefsung 'shearing' 474
axungia: rysel 'fat' 266
butio: frysca 'the name of some bird' 340

'/l/+c+i', /r/+c+i'- environments (5) and (7) - (note the use of the symbol c as an abbreviation for any consonant graph):
These environments specify forms where the high front segment which causes i-mutation ([i] or [j]) is represented directly in the spelling (i.e. the graph i or g appears) and also certain forms in which the root either (a) is followed by a particular derivational suffix or (b) belongs to a certain declensional or conjugational class. This is because it is possible that this type of information can be interpreted as giving an indirect indication that a high front segment followed the stressed vowel at some stage in the form's derivation.

For example, if a form contains the comparative ending -ra (from PG [ira], Campbell, 1959: §660) the appearance of that ending can immediately be interpreted as indicating that the vowel in the root was at some stage followed by the segment [i]. Similarly, if a form is a weak verb of class I it can be deduced that the vowel in the root will have suffered i-umlaut, even although there is no direct indication that this is the case in the spellings that appear.

Thus, while there is no direct orthographic evidence of an underlying [i] or [j] in forms such as aldra: the comparative of al
eduwile: from the verb wiellan, wellan or gewarpte: from the verb gewierpan
its existence can be deduced from consideration of the morphological rather than the phonological context involved. While the inclusion of morphological criteria in phonological analysis is open to some controversy, it seems reasonable to suggest that the knowledge that a particular form belongs to a certain declensional or
conjugational class or that it contains a particular derivational affix should be part of a native speaker's competence. Such information may well be considered an influence on the phonemic status of the various segments that appear in the Cp. data and this in turn will affect the range of graphs that may be used to represent them.

3 '/rw/' and '/r+/ ft.c' - environments (8) and (6): It is necessary to distinguish between these two environments (i.e. /r/ followed by /w/ and /r/ followed by any other consonant except the reflexes of PG [k], [g] and [x], which are also singled out for special consideration), as otherwise the /a/ ≠ /æ/ contrast would be posited on the basis of the opposition observed in heardhara and sarwa. Clearly it cannot be claimed with much conviction that these forms should constitute a pair that can be considered remotely 'analogous'. As the segment [w] can be seen to encourage 'retraction' of [e] to [o] (§2.1.1.2.1), the presumed appearance of [e] before /r/ in sarwa could well be conditioned by the following [w]. It is therefore impossible to claim that [eɔ] and [o] should contrast before /r/ followed by a consonant on the basis of these two forms with any degree of certainty. It is theoretically desirable to demonstrate that segments are attested in contexts which are as similar as possible before maintaining that a contrast should operate between them. Unfortunately however, it must be acknowledged that in practice it is not always possible to obtain a high degree of similarity of context, especially when working with a limited data base as is the case in the present account (§1.3.1.2.2).

4 But see ft. 17.

It follows from (2.2.13) that there is no context in which all of the twelve phonetic segments listed contrast. In many cases this can be explained by the fact that the environment concerned has been very narrowly specified.

For example, in environments (5) and (7) the occurrence of an underlying [i] or [j] must directly or indirectly be attested. As the high front unstressed vowel has been reduced to [ə] by the OE period
(§2.1.2.6; §2.1.4.5; §2.2.1.3.2) the forms displaying a stressed vowel in this context will be relatively few in number and given that a limited body of material has been selected for analysis it is hardly surprising that no forms containing segments such as [e], [y] and [ø] in these environments should be attested in the data considered.

Similarly, that not every segment is seen to contrast before the 'velar' consonants /k/ or /ŋ/ (with or without a preceding liquid) or before /w/ (environments (11) - (12) and (9) respectively) can be attributed in part to the fact that the data base selected is relatively small. If a larger body of evidence were consulted, it is possible that more forms demonstrating further contrasts in these contexts would appear.

However, even taking this factor into consideration there would still appear to be striking anomalies in the distribution of certain segments, notably the failure of [æɔ] and [iu] to appear in even the most 'general' (i.e. least accurately specified) environments (1) and (2). This leads us to suspect that these segments do not have phonemic status in the dialect concerned.

The instances of free variation in (2.2.14) must also be noted.
These may be taken as an indication that there is no phonemic contrast between the segments represented in the relevant contexts. It is therefore necessary to give very close consideration to the distribution of spellings in the Cp. MS before a satisfactory synchronic analysis of the short vowel system of the dialect represented can be achieved.

The contrast between [o], [u] and [y] would seem to be sufficiently well attested as all three segments contrast in all except the most narrowly specified environments (i.e. contexts (5) - (12)). The scarcity of forms containing [ɔ] can be attributed to the fact that due to developments that affect PG (see §2.1.8.2) this segment is rarely attested in OE. Its phonemic status (although marginal) is therefore not threatened by the fact that it appears in only one instance in the data considered.

Evidently, the phonemic status of the short front monophthongs and diphthongs requires more detailed consideration.
2.1.1 [i] and [iu]

These segments seem to appear in complementary distribution:

Basically [i] occurs in environments (1), (2), (3), (4), (10) and (12);
[iu] in environments (6) and (9).

This leads us to suspect that (given their phonetic similarity, see §1.2.1) the segments may be allophones of the same phoneme. The only threat to this assumption is that they appear to contrast in environment (3): before an unstressed back vowel, as shown in the forms rimo and wioloc. However, the fact that both i and io spellings appear in the same lexical item, as in wioloc/wilocscel, militates against any suggestion that the segments [i] and [iu] are in phonemic opposition.

The fact that the graphs which normally represent [i] and [iu] occur in 'free variation' in the same lexical item is further evidence that there should be no phonemic contrast between the segments concerned in this context and the symbols that can be assumed to represent them have apparently become equivalent.

Thus [i] and [iu] are in all probability allophones of a single phoneme, the realisation rules of which can be depicted as in (2.2.15).
The suggestion that [iu] is the segment that occurs in these environments is based on the assumption outlined in §2.1.1.1 that the digraph io will represent segments that are similar in quality whether the nucleus type is long or short. It remains, therefore, to explain why, given the general tendency towards a one-to-one correspondence between graph and phoneme in most orthographic systems (including that of OE, §1.3.1.2.1.1) i and io do not represent distinct phonemes in the language but allophones of a single phoneme.

This can be explained with reference to the nature of the OE orthographic system. As noted in §2.1.1.1, graphs and digraphs in OE texts generally represent pairs of segments that are similar in quality but not quantity. This is because in most cases (compare (2.2.12) and (2.2.35)) both long and short segments have phonemic status in the language. In the case of io however, only the long segment [i:u] is phonemic in the Cp. dialect. Given that in most cases graphs and digraphs represent pairs of long and short vowel segments, the digraph io is used to represent the short counterpart of the /i:u/ phoneme, even although the segment [iu] does not have phonemic status in the Cp. dialect and should not, strictly speaking, be given separate representation in the orthography.

2.1.2 [e] and [eo]

The contrast between [e] and [eo] is more widely attested: it appears in environments (1), (2) and (4).
However, the absence of contrast before /u/ (environment (9)), and before the back consonants 1\(^5\) (environments (11)-(12)), suggests that any contrast between [e] and [eo] is neutralised in these contexts.

Closer investigation of the data reveals that 'free variation' between e and eo in the same lexical item is attested in environments (3) and (6). Compare the forms teoru treuteru eobur ebur (environment 3) and erdling eordreste (environment 6).

This can be interpreted as suggesting that the /e/ ≠ /eo/ contrast is also suspended in these positions. It is therefore possible to posit the archiphoneme //EO// which represents the suspension of contrast between /e/ and /eo/. Furthermore, following the principle that graphs generally represent pairs of long and short segments that are similar in quality but not quantity, it can be claimed that eo will generally represent [eo], and e represent [e], as the same symbols are used to represent [e:o] and [e:] respectively (see §2.1.10.1; §2.1.2.1). It can therefore be assumed that the realisation of the archiphoneme is different in the various environments, and there is strong motivation for the existence of the alloarchiphones [[e]] and [[eo]]. The realisation rules for the mid front phonemes and archiphonemes can be formulated as in (2.2.16).
Thus, any instances of 'free variation' between /e/ and /eo/ can be accounted for by the fact that the contrast between /e/ and /eo/ has been neutralised in the
relevant environments, and the graphs e and eo have therefore become equivalent.

2.1.3 The low vowels

The phonemic status of the four low vowel segments [æ], [æː], [ə] and [ɔ] in the Cp. dialect is extremely difficult to recover. In most of the environments considered, (1) and (4) - (12), there is no evidence of any contrast between them. It is, however, necessary to account for the contrasts that seem to be indicated in the forms in (2.2.17).

(2.2.17)

hlægulendi and reagufinc suggest an /æ/ ≠ /æː/ contrast in environment (13)

heardhara and geabuli suggest an /ə/ ≠ /æː/ contrast in environment (3)

aldaht and gehuæh suggest an /a/ ≠ /æ/ contrast in environment (11)

Clearly some sort of contrast between the various low vowels is in operation but it is very difficult to determine the nature of this with any degree of certainty.

Given that the etymology of the forms gehuæh, hlægulendi and aldaht is extremely doubtful, it is difficult to determine the broad phonetic value of the segments represented by æ and a respectively as one of the major available sources of evidence, that of diachronic development from a PG protoform, is
As the sources of the stressed vowels in heardhara, geabuli and reagufinc are more certain, it is perhaps advisable to accord more importance to these forms in any proposed analysis. The solution in (2.2.18) is therefore tentatively adopted: the phonemes /a/ and /æ/ contrast in environment (3) - before a front consonant followed by a back vowel and in environment (12) - before a back consonant (in this case /χ/), with realisation rules that can be depicted as follows:

(2.2.18)

\[
\begin{align*}
\text{/a/} & \quad \text{/æ/} \\
[ a ] & \quad [ æ ] \\
\text{- BK.C.} & \quad \text{- FR.C. + BK.VL.} & \quad \text{- FR.C. + BK.VL.}
\end{align*}
\]

This at least accounts for the spellings in the forms heardhara, geabuli, aldaht and gehuah.

Furthermore, if it is decided that no distinction should be drawn between environments (3) and (12) and the context re-specified as 'before any consonant followed by a back vowel' it can be claimed that [æ<] in reagufinc and heagoorn is an allophone of /æ/. In this case, therefore, it remains only to account for the
The spelling of the stressed vowel in *hlægulendi*. Given the doubt over its etymology this form may reasonably be dismissed as an 'error' and need not pose an insurmountable threat to the proposed analysis.

The phonemes */a/* and */æ/* fail to contrast in most environments, and therefore the archiphoneme */æ/ // can be posited.

Once more, if it is allowed that the phonetic value of the segments represented by a particular graph will generally be similar to those represented by the same graph or digraph when it appears for a long nucleus in all but quantity, the alloarchiphones [[æc]], [[q]], [[e]] and [[ɔ]] can be suggested.

The account of this section of the short vowel sub-system can be represented as in (2.2.19).
This alloarchiphone is motivated by considerations of phonetic naturalness (see §2.1.1.2.6) and as a possible explanation for the a-o alternation in this environment.

It remains to consider the nature of the contrasts that can be attested in environment (2): before an unstressed front vowel. At first it appears that a three-way contrast may be involved, between [a], [ə] and [e], cf: cladersticca, wæterdruum, teter. However, the existence of free variation in the forms
Thus the archiphoneme /E/ can be said to occur, contrasting with the phoneme /A/. In this case the relevant alloarchiphone could theoretically be said to have the value [æ] or [e] (or the segment concerned could even be said to have an intermediate or fluctuating realisation). For reasons given in §2.1.2.4, it is generally assumed that [e] is the segment represented.

The phonemic status of the mid and low vowel segments in the Cp. MS can thus be represented as in (2.2.20)
to which the following phonemes can be added to make up the complete inventory.
An analysis based on a consideration of the distribution of the spellings that appear in the Cp. MS is therefore extremely complex, as the apparent anomalies in the distribution of certain graphs and digraphs and the instances of free variation would seem to suggest.

The following inventory can, however, be proposed with a fair degree of certainty:

/æ/ /ε/ /e/ /eo/ /i/ /y/ /o/ /ø/ and /u/

with the archiphonemes

//E/ //E/ //EO// representing various suspensions of contrast as noted in (2.2.20).

The fact that the segment [iu] is an allophone of /i/, and the segment [æ̃] either an alloarchiphone of //E// or an allophone of /æ/ explains the striking gaps in their distribution.

Furthermore, the instances of free variation in (2.2.14) may easily be explained when it is considered that the segments normally represented by the graphs in
question (eo, e, io, i, æ and e) do not appear in contrast in the relevant contexts.

2.2 The evidence of diachronic development

This section attempts to recover the phonemic status of the short vocalic segments in Cp. by tracing the developments that affect the short vowel system in its transition from PG to OE and also giving some consideration to those that affect it in the historic English period.

As with the analysis of the long vowels, the developments considered will for the most part be accepted as outlined by Campbell (1959: Ch.V), although it will become evident that in some cases it is necessary to make certain amendments to Campbell's interpretation of the evidence. The analysis of the phonemic status of the segments in the short vowel system will be seen to be a more complex matter than that of their long counterparts. This is frequently because many of the developments which affect the segments in their transition from PG to OE have, according to Campbell (1959), not been completed by the historical OE period. It is therefore necessary to investigate the spellings that appear in the Cp. MS very closely to ascertain which particular stage of the various diachronic developments has been reached in the dialect represented.

Campbell (1959: §99) suggests that the PG short
vowel system contained the following segments: 
[a] [e] [i] and [u]
all of which, it can be presumed, have phonemic status.

2.2.1

In §115 Campbell (op.cit) reveals that PG [u]
becomes [o] before mid and low vowels. Once evidence of
this context has been lost in the surface form, it can
be concluded that the mid back segment would have
phonemic status.

Thus the short vowel system that enters Pre-OE can
be represented as in (2.2.21).

(2.2.21)
/a/ /e/ /i/ /o/ /u/

2.2.2

The first development to affect this system in the
prehistoric OE period is that described by Campbell
(1959: §§130-131). Apparently, PG /a/ becomes [ɔ]
before a nasal consonant and [ɔ] in other environments. This
means that the segments [ɔ] and [ɔ] appear in
'complementary distribution' and the phoneme /ɔ/ can
be posited, with realisation rules as shown in (2.2.22).
According to Campbell (1959:§116), PG [u] is retained before a nasal followed by another consonant and in OE is generally attested 'where o might be expected from the following vowel' (ibid:§118). It is possible therefore to claim that the contrast between /æ/ and /o/ is suspended in these environments, [ɔ] being the only segment that appears. In the few cases where PG [o] is not raised to [u] (before single [m] for example) the o spellings remain. It is reasonable to assume that this segment would merge with the reflex of PG [a], i.e. [ɔ], to which it is phonetically very similar. Thus the archiphoneme //ɔ// representing the suspension of contrast between /æ/ and /o/ can be posited, and this may well account for the interchange of the graphs a and o before nasal consonants in many OE MSS (§2.1.1.2.6; §2.1.5.3).

The short vowel system at this stage in the development of the language can be represented as in (2.2.23).
2.2.3

The next set of developments that can be seen to affect the short vowel system are those of 'breaking and retraction' as outlined by Campbell (1959: §§139-156). The present account suggests that in some cases these developments have different effects on the system from those implied in Campbell's account. This is generally due to the fact that the spellings that appear in certain environments can be given different interpretations.

(i) Before /r/ followed by a labial consonant

According to Campbell (1959: §144) both ea and a appear for Pre-OE [æ] in this environment, presumably even when the same lexical item is concerned. Campbell interprets this alternation as an indication of sporadic
'retraction' of \([\text{æ}]\) to the segment \([\text{a}]\) in this context. This is not altogether unreasonable, given that labial consonants (/w/ in particular) can be observed to cause low front vowels to retract to those back vowels that are nearest in height (§2.1.1.2.1). However, given that a spellings are relatively infrequent in this environment in the Cp. MS and that \(\text{a}\) and \(\text{ea}\) apparently be expected to alternate in the same lexical item, it seems unlikely that \(\text{a}\) and \(\text{ea}\) are to be interpreted as representing a different phonetic segment in each case. The suggestion that \([\text{æ}]\) should uniformly occur in forms that have a spellings while \([\text{æ} \text{e}]\) is the realisation of the stressed vowel in the same forms in the same dialect when the digraph appears is clearly unreasonable. A far more satisfactory explanation for the spelling variation can be given with reference to the fact that the segments normally represented by \(\text{a}\) and \(\text{ea}\): \([\text{æ}]\) and \([\text{æ} \text{e}]\) respectively (if we accept that the segments represented will be similar in quality to those represented by \(\text{a}\) and \(\text{ea}\) when they appear for a long nucleus) do not contrast in this environment. The graphs \(\text{a}\) and \(\text{ea}\) will therefore be interchangeable.

Given that \(\text{ea}\) is the more frequently attested spelling in Cp. the present account will assume that \([\text{æ} \text{e}]\) is the segment uniformly represented in the forms concerned. The occasional a spellings can be explained by the fact that as it is always possible to recover the exact phonetic realisation of the vowel from an
examination of the context, no ambiguity will arise whichever graph appears. There is therefore no need to assume that a different vocalic segment should occur before \(/r/\) when it is followed by a labial rather than any other consonant: [\(\theta\)] is the realisation of the 21 vowel irrespective of whether \(ea\) or \(a\) is attested.

(ii) Before \(/l/\) followed by a consonant when the vowel is preceded by \(/s/\) (g), or before \(/l/\) followed by \(/x/\) (h)

Campbell (1959: §146) claims that the occasional eo spellings in these environments suggests that the segment \([eo]\) rather than \([e]\) (the more usual reflex of Pre-OE \([e]\) before \(/l/\) plus a consonant, §2.1.2.2.4) is represented. However, given that such spellings are not universally attested in these environments (and in fact e and eo spellings apparently occur in the same lexical items), it is possible to maintain that the contrast between the phonemes \(/e/\) and \(/eo/\) has been suspended, the graphs e and eo having become equivalent. As e is by far the more common spelling for the reflex of PG \([e]\) before \(/l/\) followed by a consonant in OE, it is reasonable to suggest that \([e]\) is more likely to be the segment represented, and despite the spelling alternation it is unnecessary to suggest that Pre-OE \([e]\) has undergone radically different developments before \(/l/\) when the vowel happens to be preceded by \(/s/\) or the liquid followed by \(/x/\).
The question of the phonemic status of [ɔ], represented by the graphs a and o in forms like gewarht (ibid: §156), must also be considered. While it is possible to claim that a three way contrast between the segments [ɔ], [o] and [æ] would suggest that the phonemes /ɔ/, /o/ and /æ/ (realised as [æ]) should be posited in this context, illustrated by forms such as gewarht, lorg and mearg, this does not seem to be a viable proposition. As the a spellings are only very sporadically attested it is best to regard [ɔ] as a low allophone of /o/ (which may well be assumed to have lowered in this environment, §2.1 ft.19). The occasional a spellings can be accounted for by the suggestion that the segment had become identified with the segment [ɔ] which had developed from PG [a] before nasal consonants and was represented by the same graphic alternation (a/o).

Having therefore cleared up these difficulties in the interpretation of the spelling material, the effects of 'breaking and retraction' on the phonological system of the Cp. dialect as accepted in the present account can be assumed to be as follows:

(a) Pre-OE /æ/ becomes [æɔ] before /r/ followed by a consonant (Campbell, 1959: §144) and [ɔ] before /w/ and /l/ followed by a consonant (ibid: §§142;143)

(b) Pre-OE /e/ becomes [eo] before /r/ followed by a
consonant, /\w/ and /\x/ (ibid: §146)

(c) Pre-OE /i/ becomes [iu] in the same environments (ibid: §148).

This generally results in a proliferation of allophonic variants of the front vowel phonemes as illustrated in (2.2.24).

(2.2.24)

2.2.4

The effects of the 'restoration of [O]' (ibid: §157) simply result in the redistribution of the
allophones of /æ/, as shown in (2.2.25).

(2.2.25)

1 See Colman (1983b:272-273) and references therein on forms where [a] is predictable from its morphological rather than phonological environment, for example in weak verbs of class II.

2.2.5 Second Fronting

The development traditionally referred to as 'second fronting' is generally assumed to operate in the dialect represented by the Cp. MS (Campbell, 1959: §§164;168).

Once more, the present account assumes that the process has a different effect on the short vowel system from that implied by Campbell, as different interpretations may be given to the spellings in certain forms. Campbell (1959: §168) suggests that the process
of the raising of [ə] to [e] did not occur in every case in Cp., and the development was only sporadically attested. It must be noted, however, that if it is allowed that [ə] became [e] in every environment this would clearly result in there being no contrast between the segments [ə] and [e] and the graphs æ and e would therefore be interchangeable. Given that e spellings appear for Pre-OE [ə] in the Cp. MS, for example teblere, uuyndecrefte (2.1.36)

apparatum: gepréc 'press, crowd' 180

and, furthermore, that there is free variation between æ and e in the same lexical item (2.2.14), it must be allowed that the raising of [ə] to [e] had been completed in the dialect represented. The occasional æ spellings therefore, rather than indicating that Pre-OE [ə] had not become [e] in the forms concerned, can be more satisfactorily interpreted as 'orthographic archaisms' resulting from the fact that the written language is slow to reflect developments that occur in the spoken. Thus [ə] is presumably raised to [e] in every environment in which it occurs in the Cp. dialect and the existence of an archiphoneme */æ*/ representing the suspension of contrast between /ə/ and /e/ can be posited. Assuming that [a] became [ə] except before /l/ in the Cp. dialect (although subsequent developments have obscured this process, ibid: §207) the allophones of /ə/ are redistributed as shown in (2.2.26). The phonemic system of the short vowels at this stage in the
development of the 'prehistoric' Cp. dialect can be represented as follows:

(2.2.26)

The process traditionally known as 'i-mutation' was the next to affect the short vocalic segments of OE. According to Campbell (1959: §§190-202), the developments that comprise this process took place in various stages in OE, and it is therefore necessary to
examine the data very closely to ascertain which particular synchronic stage is represented by the Cp. MS. Once more, the present account differs slightly in its suggestions as to the value of the various segments represented as the spellings in some of the forms concerned may be given alternative interpretations.

(i) 

[Æ] before /l/ followed by a consonant according to Campbell (1959: §193a) developed first of all to [æ] and eventually to [e] (which presumably merged with the reflexes of PG [e]) in OE.

It is suggested in Campbell's account that [Æ] is the segment that appears in this environment in the Cp. dialect. However, the existence of e spellings in some of the relevant forms in Cp. such as, for example, conchis: scellum 'shells' 560 (Go. skalja) 
é*ortex (v): edwelle 'whirlpool' 908 
would seem to suggest that the raising to [e] has already taken place in the dialect represented.

It is necessary therefore to account for the æ spellings in this 'historic' context, which are, admittedly, frequent in the Cp. data. If it was the case that [Æ] appeared for the reflex of PG [a] in the historical environment /l/ plus a consonant plus [i] or [j] and all evidence of the underlying high front segment had been lost, then we should be forced to conclude that the segment [Æ] constitutes a separate phoneme in the dialect concerned, contrasting with [a]
It is significant, however, that all examples of æ spellings before /l/ followed by a consonant in Cp. occur in forms in which the context for i-mutation is directly or indirectly reflected in the surface representation.

In ælbitu, for example, the i-spelling is direct orthographic evidence of a following high front segment. In forms such as

sublactorium: *bloestbælg 'bellows' 28
(OE belg, OHG balg, Go. balgs, ON belgr, cf. PE 'belly')
cante(h)i: *fælge 'felly' 390
(OHG felga)

while the interpretation of æ is open to question (§2.1.15) the PE evidence at least suggests that a palatal rather than velar segment is represented in these forms.

As Pre-OE [ɣ] would only palatalise and become [j] after an umlauted reflex of PG [a] before /l/ plus a consonant, the appearance of the segment [j] can be taken as an indication that the vowel in these forms has suffered i-mutation.

In the following examples the fact that the vowel has undergone i-mutation is to be deduced from a consideration of morphological rather than phonological criteria, see (2.2.13) ft.2.

In ældra the comparative ending can be considered
to indicate indirectly the existence of an underlying [i], and in edumelle the fact that the noun is formed from a verb belonging to weak class I (wiellan) suggests that a high front segment appeared at some stage in the derivation of the form.

Where æ appears for the segment resulting from the i-mutation of Pre-OE [O.] before /l/ plus a consonant in the data consulted, it is always evident from the context that the segment appears in an environment in which i-umlaut has occurred. It is therefore presumably possible to predict the broad phonetic value of the stressed vowel in the form concerned.

The segment represented by æ in the graphic sequence æ1c can automatically be interpreted as [e] and there is no need to claim that the æ spellings in the forms cited above should suggest a phonemic contrast between /æ/ and /e/. The æ spellings therefore are more satisfactorily accounted for as being assumed to result from the fact that the spelling system is slow to reflect developments in the spoken language, the segment [e] presumably having had the value [æ] in this context at some stage in its development.

The contrast that operates between the reflexes of the PG short low and mid front vowels before /l/ followed by a consonant is therefore essentially between [æ] and [e]. Furthermore, it must be noted that if the evidence of the underlying high front segment is reflected directly or indirectly in the surface form,
there is no contrast in this section of the phonological system.

In the environment 'l/c+i', see (2.2.13) ft.2, it can be predicted that [e] should be the segment represented, irrespective of whether the graph a, æ or e appears, as there is presumably no contrast between the segments [æ], [æ] and [e]. Even forms such as ald and aldra do not constitute a minimal pair as in the latter the existence of the underlying [i] is still evident.

(ii) Before nasals

According to Campbell (1959: §193d), the Pre-OE segment [ɔ] when followed by an underlying [i] or [j] very quickly developed to [e] and merged with the reflexes of PG [e] in OE. In fact e spellings are universal for the reflex of i-mutated [ɔ] in the section 26 of the Cp. MS consulted and thus there can be no question that this final stage in the diachronic development concerned has been reached and that [e] is the segment represented in, for example, enid. Thus any contrast in this environment is essentially between [e] and [ɔ].

(iii) Before /r/ followed by a consonant and /χ/

As noted in 2.2.3(i) the reflex of Pre-OE [æ] before /r/ followed by a consonant (labial or otherwise) was [æɔ], which when subject to i-mutation became a segment represented by e, presumably [e] (§2.1.2.3.4 and references therein). A similar segment appears for the reflex of PG [a] before /χ/ (h), (ibid:§200). Thus e
presumably represents [e] in forms such as *sundgerd* and *nehtsegale*.

Where /r/ is followed by a labial consonant in an umlaut environment, Campbell (1959: §193a) suggests that the occasional æ spellings attested should represent [e], the result of the effects of mutation on the [Q.] produced by 'retraction'.

However, a consideration of the forms in question, for example

- *conparentes*: *gegærwendne* 'to prepare' 377
- *convaluit*: *gewærpte* 'to recover' 572

(both weak verbs of class I: *gegierwan* and *gewerpan* respectively) suggests that yet again there is indirect evidence that the vowel in these forms has undergone i-mutation. It is therefore possible to predict that [e] will be the stressed vowel that occurs in these forms: i.e. in the graphic sequence ærɔ + 'i' ) æ will automatically be interpreted as representing the segment [e]. In this case although the vowel in the forms concerned presumably never had the value [æ] historically (the segment clearly developed from [æɔ] to [e]), it can be claimed that, due to the fact that the segments [æ], [æɔ] and [e] do not contrast in this position, the graph æ can appear without risk of ambiguity.

The occasional æ spellings can therefore be explained without having to suggest, as Campbell is forced to, that the reflex of PG [a] before /r/
followed by a labial consonant is essentially different from that which appears before /r/ followed by any other consonantal segment. Evidently, therefore, the following essential contrasts occur before /r/ plus a consonant after i-mutation has taken place:

[Cₐ] contrasts with [e] which contrasts with [eo] (the regular reflex of Pre-OE [e] in this environment see 2.2.3) as is shown by the analogues pairs sundgerd, eordreste and heardheau.

It must be noted that while the evidence of the underlying high front segment remains directly or indirectly in the surface form (as was the case before '/l/ + c + i' ) no contrast between /a/, /e/ and /eo/ is attested.

(iv)

In all other environments the reflex of PG [a] (except before a back vowel) has developed to [e] as a result of second fronting (§2.2.1.2.2.5). Thus i-mutation (if the traditional distinction between these two developments is maintained) has no further effect on the vowel in forms such as bed, the contrast between the mid and low front vowels having already been suspended.

(v)

The effect of i-mutation on the phonemic status of short back vowels can be seen to be very much the same as that of this development on their long counterparts (ibid: §196; §199). While the appearance of oe spellings might suggest that the mid rounded front vowel had
phonemic status in Cp., the existence of e in forms like cerfelle suggests that the merger with /e/ had already taken place. The scarcity of examples results from the fact that /o/ is rarely attested in an i-mutation environment in Pre-OE (§2.1.2.5).

In the case of the high vowel, however, y spellings are frequently attested: byden, ymbsuæpe.

As there is no generally attested confusion between y and i spellings in forms in the Cp. MS, it can be claimed that /y/ has phonemic status in the dialect represented.

The development known as i-mutation can therefore be seen to have a wide ranging effect on the phonemic status of the segments in the short vowel system of Cp., especially on the various reflexes of PG [a] and [e].

(2.2.27) summarises the contrasts that emerge in the relevant environments.

(2.2.27)

Environment: see (2.2.13)  PG [a]  PG [e]

(1) [e]  [e]
(2) [e]  [e]
(3) [e]  [e]
(4) [a]  [e]
(5) [a]  [e]
(6) [œ]/[e]  [œ]
(7) [æ]  [æ]
(8) [e]  [e] 1
(9) [œ]  [œ]
(10) [ə]  [e]
(11) [a]>[e]  [œ] 2
(12) [æ]>[e]  [œ] 2
(13)
Note that i-mutation does not appear to affect [eo] in the Cp. dialect (Campbell, 1959: §202).

Subsequent developments affect this contrast (§2.2.2.2.8).

Thus the contrast can be seen to be essentially between a mid and a low phoneme respectively, the low phoneme having a number of different phonetic realisations.

As [a] rather than [e] now appears to be the 'major' allophone it is desirable to represent the phoneme as /a/ rather than /e/. Its realisation rules can be represented as in (2.2.28).

(2.2.28)

\[
\begin{align*}
/a/ & \rightarrow [\text{æe}] /-r+C, /x/ \\
& \rightarrow [\text{a}] /-l+C, /l/ + \text{Bk. VL} /-W I \\
& \rightarrow [\text{æ}] /-c + \text{Bk. VL} , \\
& \rightarrow [\text{a}] /-%, [m], [n] \\
\end{align*}
\]

The contrast with the mid vowel /e/ is neutralised in all other environments. There is, however, evidently a
phonemic distinction between the monophthongal and diphthongal segments [e] and [eo] before /x/ and /r/ followed by a consonant which is suspended in all other contexts. The archiphoneme //E// can therefore be posited, and as eo spellings are the norm before /w/, the alloarchiphones [[e]] and [[eo]] must be suggested: the appropriate realisation rules may be shown as in (2.2.29).

(2.2.29)

As noted in (2.2.27) there are many environments in which the low/mid contrast does not operate. As the contrast suspended is not simply between two or more phonemes but between the archiphoneme //E// and the phoneme /ɑ/, in this case the 'hyperphoneme' (Anderson,
to appear) /E/// can be posited.

The short stressed vowel system at this stage in its development can therefore be represented as in (2.2.30).

(2.2.30)
The next set of developments that are assumed to have affected the short vowel system in the prehistoric OE period are those known as 'Back Mutation' (Campbell, 1959: §§205-221).

By this process, apparently, [æ] becomes [əː]; [e] becomes [eo] and [i] becomes [iu] when an unstressed vowel appears in the following syllable. Presumably the diphthongs were attested in all the relevant forms in Cp., although 'the changes are not yet always indicated in the spelling' of that particular MS (ibid: §210). To suggest that e, æ and i appear for the segments [eo], [æ] and [iu] is perfectly acceptable, given that there is no contrast between monophthong and diphthong in this context. The major effect of this development is therefore a redistribution of the allophones of /æ/, /e/ and /i/: the segment [æ] is no longer attested as an allophone of /æ/, and [əː], [eo] and [iu] appear in a greater number of environments, as shown in (2.2.31).
2.2.8 Smoothing

Once more, the present account gives a slightly different interpretation to certain spellings from that implied by Campbell (1959: §§222-233).

(i)

Generally, the diphthong [æə], when it appears before /r x/ (rg, rh), /rk/ (rc) and /h/ is monophthongised. According to Campbell (1959: §223), the segment originally develops to [æ], and is subsequently raised to [e]. This [e] presumably merges with the reflex of PG /e/.

That this development has occurred in the Cp. dialect in the first two environments mentioned is supported by the fact that e spellings normally appear in the relevant forms in the MS: e.g. merciseren. Any
instances of æ in these contexts can easily be explained as 'archaic spellings' (as was the case with the corresponding segment in the long vowel system, see 1.2.6 above).

However, as only æ spellings are attested in Cp. before /X/ (h), Campbell claims that the raising process has not taken place in the dialect concerned and that the segment remains as [æ], potentially contrasting with [e] (from the mutation of [æː], see 2.2.6.iii) as shown in the analogous pair gehush and nehtegale. However, given that the raising process of [æ] > [e] is attested for the short vowel in all other 'smoothing' environments and also uniformly affects the corresponding long vowel before /X/, the proposition that [æ] rather than [e] should appear in the forms concerned would suggest a huge anomaly in the operation of the sound change. Furthermore, as shown in (2.2.31), the segment [æ] no longer appears in the short vowel system of the Cp. dialect, far less in a position where it would have phonemic status.

As noted above, æ spellings are occasionally attested for [e] before /X/ and /k/ when preceded by /r/, and it is only on the evidence of the appearance of æ spellings that any development to [e] is suggested. The graphs æ and æ have evidently become equivalent due to the fact that the segments [æ] and [e] do not enter into opposition with each other and in this environment it can automatically be predicted that the
segment [e] occurs. It can therefore be claimed that the absence of e spellings before /X/ simply results from the fact (see 2 above) that the environment in question is fairly narrowly specified and the data base consulted is limited. It is reasonable to suppose that if a larger number of forms with PG [a] before /X/ in a non-umlaut environment were to appear in the relevant data, then e spellings may well be attested. In support of this suggestion the appearance of e spellings in forms such as wex in the Vespasian Psalter (ibid:§233), the dialect of which is universally supposed to be very closely related to that represented by Cp. (§1.3.1.1.1 and references therein) may be cited.

On this basis it can be supposed with a reasonable degree of certainty that [e] is the segment represented in the forms concerned, the æ spellings again being the result of the fact that the written language is slow to reflect developments in the spoken, a phenomenon which is only to be expected in a text dating from early in the historic OE period.

Essentially, this interpretation of the spellings avoids a large discrepancy in the account, both in the assumed operation of certain diachronic developments (i.e. 'smoothing') and in the suggested synchronic system: i.e. there is no need to posit the existence of the segment [æ] which would only occur in this environment. While it is possible to suggest that [æ]
may have had phonemic status for a short while in the development of the language, it can be assumed that due to the fact that its status as a phoneme was extremely marginal this would encourage its almost immediate merger with /e/, a more 'established' phoneme.

This also explains the implication in Campbell's statement (1959: §223) : 'æ and e interchange respectively as the smoothing and i-umlaut of ea' (compare meht and meht) that the vowels in the same lexical items have undergone different diachronic developments in different cases. On the one hand [æ] > [(cols) > [e] by i-mutation, on the other [æ] > [cols] > [æ] by smoothing. If it is assumed that [e] is always the segment that appears before /X/ whether or not the stressed vowel has undergone i-mutation and as a result the graphs æ and e are interchangeable, it is not necessary to imply that the æ spellings appear because i-mutation has for some reason failed to operate in the forms concerned. It can be accepted that i-mutation has affected the vowel in all cases and [e] is the segment represented. That æ should appear as a spelling for that segment is perfectly acceptable. Thus the main effect of smoothing on the short vowel system is the loss of an environment for [cols]: the segment is now only attested before /r/ followed by non-velar consonants and non-velar consonants when followed by an unstressed back vowel. The hyperphoneme //E//, [[e]], presumably occurs before velar consonants, whether or not these are
preceded by /r/. The occasional ea spellings, in mearg for example, are acceptable, as there is no contrast between [əɛ] and [e] in this context.

(ii)

The diphthong [eo] which appears before /x/, /rX/ and /rk/ (h, rg, rh and rc) was apparently smoothed to [e]. The occasional eo spellings can easily be accounted for as there is evidently no contrast between /e/ and /eo/ in this environment and it can be assumed that [e] is the segment that regularly appears in the forms concerned. Thus the number of environments in which the segment [eo] is attested is reduced: the appearance of the segment is now restricted to before /r/ followed by a 'front' (non-velar) consonant, before a front consonant followed by a back vowel and before /w/.

Before /r/ followed by a velar consonant, /x/ and a back consonant plus a back vowel, the hyperphoneme ///E/// is attested.

(iii)

Similarly [iu] is smoothed to [i] before /x/(h) and /r/ followed by a velar consonant. The occasional io spellings can again be explained with reference to the phonemic status of the segments concerned. Thus the allophones of /i/ are redistributed: [iu] now only appears before /w/ and /r/ when followed by a non-velar segment.

The short vowel system at this stage in its development can be represented as in (2.2.32).
2.2.9

The final crucial development that can be seen to affect the short vowel system is that outlined by Campbell (1959: §294) which suggests that [eo] and [iu] merge in [eo]. From the account given above, it is evident that the contrast between [eo] and [iu] only arises before front consonants followed by a back vowel and /w/. According to Campbell (1959: §294), 'the symbol eo only encroaches on io in the case of back umlaut of i in Cp.' While it therefore cannot be claimed that [iu] becomes [eo] in all environments (the segments are presumably distinct before /w/) it can be supposed that the /iu/ ≠ /eo/ contrast is at least suspended before a non-velar consonant followed by a back vowel. Essentially, therefore, the neutralised opposition is that which operates between an allophone of the phoneme /i/ and an alloarchiphone of the archiphoneme /E/. It is reasonable therefore to posit a hyperphoneme in this context, in this case /E0/, and the resulting system of contrasts can be represented as in (2.2.33).
It follows therefore that a great deal of allophonic variation and suspension of contrast is attested, with reference to which much of the apparent variation in the use of certain graphs may be explained (in particular ea, æ, e, eo and a). The basic phonemic inventory can be seen to be as follows: /i/, /eo/, /e/, /ʌ/, /o/, /u/ and /y/, with the archiphonemes /E/ (representing the suspension of the contrast between /eo/ and /e/) and /ɔ/ (capturing the suspension of the /o/ ≠ /a/ opposition). The hyperphonemes ///E/// and ///E0/// may be invoked to account for the apparent loss of contrast between ///E/// and /ʌ/ and ///E/// and /i/ respectively.

It must be noted that this analysis is also supported for the most part by developments which can be assumed to have occurred in the period between that of the composition of the Cp. MS and the present day. As shown in (2.2.34), most of the reflexes of the phonemes proposed in (2.2.33) have phonemic status in PE.

(2.2.34)

Cp. /i/ corresponds to PE /I/
" /e/  " /ɛ/
" /o/  " /ɔ/
" /ʌ/  " /a/

(Gimson, 1980: §7.06)

The absence of /eo/ in the PE system can be explained by the fact that the OE diphthongs monophthongised in the
transition into ME (Campbell, 1959:§329), by all accounts well after the date at which Cp. is assumed to have been composed. Similarly the absence of PE /y/ can be attributed to the fact that the phoneme merged with /i/ in the late OE period.

2.3

It remains to compare and contrast the analyses of the short vowel system given in 2.1 and 2.2, represented in (2.2.20) and (2.2.33) respectively, with a view towards achieving a final analysis which complies with both

1 the distribution of the spellings that appear in the MS, and
2 the historical developments that can be assumed to affect the language.

An examination of (2.2.20) and (2.2.33) reveals that there are radical differences between the analyses based on these types of evidence.

(i) The most striking discrepancy lies in the status of the mid and low monophthongs and diphthongs: [æ], [e], [æ], [æ], [æ], [æ] and [æ] where, crucially, 2.1 suggests that a segment [æ] exists in the phonemic system of Cp., 2.2 does not.

(ii) Furthermore (2.2.20) suggests that a mid front rounded phoneme exists in the system: /ɪ/, which is not motivated on consideration of the diachronic evidence (2.2.33).
(iii) (2.2.33) assumes that [iu] and [eo] have merged before a front consonant followed by a back vowel: thus the contrast between /ːE/ and /ːi/ is suspended in this environment. In (2.2.20), however, this does not appear to be the case.

(iv) 2.2 also suggests, in contrast to 2.1, that /a/ and /o/ do not enter into an opposition before nasal consonants.

The analysis in 2.1 was based on a very literal interpretation of the spelling evidence, assuming that

(a) a particular graph or digraph will consistently represent the same segment wherever it appears

(b) OE vowel graphs and digraphs represent pairs of long and short segments that are identical in quality but not quantity unless there is very strong evidence to the contrary.

§1.3.2.1.2.1 however, constantly emphasises the danger of such an over-literal interpretation of the spelling system. In that section it was established that if there is no contrast between the segments normally represented by certain graphs or digraphs, the symbols in question will be interchangeable as the broad phonetic value of the segment can be deduced from the context in which it appears. Such a situation can arise

(i) when one or more allophones of a single phoneme are concerned and these, for some reason, are given separate representation in the spelling.

(ii) when a contrast between one or more phonemes has
been suspended and an archiphoneme is posited.

If (2.2.33) is accepted as representing a possible analysis of the short vowel system of the Cp. dialect, there are evidently many cases where the contrast between phonemes and even archiphonemes has been suspended. It is possible, therefore, that in certain cases symbols may interchange with no risk of ambiguity. Clearly, faced with a system where there is evidently a great deal of allophonic variation, it can hardly be expected that an analysis based on a rigid interpretation of the spelling evidence will be satisfactory. In this case therefore it is advisable to give more weight in the final analysis to the evidence of the proposed diachronic developments, examining the distribution of the spellings closely to ensure that they conform with (i.e. do not contradict) the conclusions that have been reached.

2.3 will therefore consider each of the synchronic environments established in (2.2.13), on the basis of which the analysis represented in 2.2 was formulated, and compare the contrasts suggested in (2.2.20) and (2.2.33).

It will be seen that in the vast majority of cases, if factors (i) and (ii) above are borne in mind in the interpretation of the spelling evidence, the analysis suggested in (2.2.33) would appear to be more likely. This will therefore form the basis of the final analysis depicted in (2.2.35).
In this way the dangers of basing an analysis solely on the interpretation of the spellings that appear without due consideration of the factors that might influence the interpretation of this type of evidence are strikingly illustrated.

In some cases certain spellings appear in the light of which it is necessary to amend the analysis given in (2.2.33) and on the basis of this the necessity of examining evidence from all available sources in order to reach a satisfactory final analysis must be emphasised once more.

2.3.1 Environment (1): before a word- or morpheme- final consonant (excluding /w/, /h/, /x/ and /n/)

According to (2.2.33), the following segments contrast in this environment:

[e], [i], [o], [u], [y] and [a]

whereas (2.2.20) implies a contrast between [æ], [e], [eo], [i], [u], [o], [y].

The discrepancies can be accounted for as follows:

(i)

The existence of the phoneme /ø/ is suggested on the basis of the appearance of oe spellings in forms such as oefung. As revealed in 2.2 however, the available data suggests that /ø/ has merged with /e/, and the occasional oe spellings are to be explained with reference to the fact that the spelling system is slow to reflect developments in the spoken language.
The weight in this case must therefore be given to the analysis suggested in 2.2 and the dangers of reaching conclusions on the basis of spelling evidence alone, which can be given an over-literal interpretation, are therefore evident. While (2.2.20) implies that the phoneme /ʊ/ appears in contrast with the phonemes that are found in all other environments, this is evidently not the case. The possibility of phonemic /ʊ/ will therefore be dismissed in the consideration of the contrasts in environments (2) – (13) below.

(ii) (2.2.20) suggests that there is a contrast between the low and mid front segments [æ] and [e] in this environment, while (2.2.33) indicates that this contrast has been neutralised: the allophone [e] is the only segment that appears. As established in 2.2, it is likely that [e] is in fact the segment represented in forms such as cræt and dæl. The æ spellings are therefore to be explained with reference to the conservative nature of the spelling system (§2.1.2.4). There is no contrast between [æ] and [e] in this position and the nature of the segment represented can be deduced from the context. Consequently the graphs æ and e may be used interchangeably. Thus, once more, the analysis based on historical evidence must be considered more acceptable and it can be concluded that the segment [æ] is not attested in this environment, despite
the spellings that appear.

(iii)

The appearance of the eo spelling in heor must also be accounted for. This leads (2.2.20) to suggest a contrast between [eo] and [e] in this environment, which does not at first seem to be motivated by the historical evidence. According to (2.2.33), this contrast is only attested in environment (6), i.e. before /r/ followed by a 'front' consonant. It may be suggested that the /e/ ≠ /eo/ opposition is suspended in this position, eo being a possible spelling alternative by virtue of the fact that the digraph regularly represents one of the segments between which the contrast has been neutralised (i.e. it is a possible spelling for the archiphoneme). The precise phonetic value of the segment represented is therefore recoverable from a consideration of the relevant context.

Unfortunately, there is no convincing reason for the appearance of the digraph in this environment: it cannot be explained as an 'archaic' spelling as is the case with æ and oe discussed in (i) and (ii) (this section). While in the case of certain other alternations (2.3.2.1; 2.3.7; 2.3.11), no further explanation other than that suggested above seems to present itself and a closer examination of the particular diachronic developments that can be supposed to have affected the form in question leads us to accept the analysis suggested in (2.2.20) rather than that un
(2.2.33): in this case the segment represented is in fact [eo] and a phonemic contrast between [e] and [eo] is attested in this environment.

The form has apparently undergone the development \([\text{Ce}r] > [\text{e}o\text{r}] > [\text{e}o\text{r}]\): the segment [eo] arises by 'breaking' before [\text{rr}], and is phonemicised when the geminate consonant is simplified in final position (see §2.1.18.5).

As noted above, the account given in 2.2 does not as a rule consider developments that affect a limited number of lexical items. The phonemicisation of diphthongs after the reduction of word-final geminates is, presumably, one such development. For this reason, therefore, this potential source of contrast between /e/ and /eo/ was overlooked. Thus, in this instance, the analysis given in (2.2.20) must be considered more likely than that of (2.2.33) and in (2.2.35) environment (1) is added to the list of contexts in which the /e/ ≠ /eo/ contrast is attested. Once more, the necessity of consulting all available evidence to reach a satisfactory conclusion must be emphasised.

The following contrasts, therefore, can be assumed to occur in environment (1):

[e], [eol], [i], [u], [o] and [y] representing the phonemes /e/, /eo/, /i/, /u/, /o/ and /y/ respectively, and this information will be recorded in (2.2.35).
2.3.2 Environment (2): before a consonant other than /k/, /f/, /x/, /w/ or /n/, followed by a front vowel

According to (2.2.33) a contrast between the segments [e], [i], [u], [o] and [y] can be assumed in this environment, representing the phonemes (and hyperphonemes) //E//, //i/, //u/, //o/ and //y/ respectively.

On the basis of the analysis in (2.2.20), a contrast between [æ], [æ], [æ], [æ], [æ], [æ] (i.e. //E//, //æ/, //æ/, //æ/, //æ/, //æ/ and //æ/) can be suggested.

The apparent discrepancies can be accounted for as follows:

(i) (2.2.20) suggests a contrast between the low back segment [æ] and [[æ]], the alloarchiphone of //E// which represents the suspension of the contrast between the low and mid front phonemes //æ/ and //æ/. However, an investigation of the historical evidence suggests that it is unlikely that [æ] is the segment represented in the forms concerned as the reflex of PG [a] would be raised to [æ] in this context in the Cp. dialect (§2.1.1.2.5). In this case there is no means by which it can be claimed that a represents the segment that appeared in the form at an earlier stage in the history of the OE language. The a spelling therefore can only be explained along the lines at first suggested in relation to the appearance of eo in heor (2.3.1.ii).

As the contrast between //æ/ and //E// is suspended in
this environment and a is a possible spelling for the phoneme /a/, the graph can clearly also be used to represent any allohyperphone of //E/// with no risk of ambiguity. The fact that [e] is the segment represented can automatically be deduced from the context.

Thus the analysis in (2.2.33) would appear to be the more likely in this case and again the dangers of taking an over-literal interpretation of the spelling evidence are demonstrated.

(ii) The apparent contrast between /e/ and /eo/ suggested in 2.1 can be accepted for similar reasons to those outlined in relation to heor in 2.3.1(iii). The spelling in weosend, the form concerned, presumably represents [eo] which appears as the result of diachronic developments which were overlooked in 2.2 as they only affect a limited number of lexical items. The form is apparently an 'obscured compound' and has presumably undergone the following development: [wisund] > [wisund] > [weosund] > [weozand], the back vowel being reduced to [æ] as the second syllable in the form becomes unstressed due to the change in its morphemic structure ($3.2.7.3.2; §2.1.2.6.7$).

It is important to note that back vowels in unstressed syllables do not generally become reduced in quality until the late OE period (Campbell, 1959: §375). That such a development should have occurred in the Cp. dialect is clearly due to the unusual morphological character of the form concerned, and while it undeniably
results in the phonemicisation of /eo/ in this particular context, the contrast is in fact very rarely attested. Thus the analysis based on the evidence of the historical developments that can be assumed to affect the short vowel system, i.e. that represented in (2.2.33), must be amended slightly in the light of certain spellings which illustrate further, more lexical-specific, phonological changes.

(2.2.35) therefore records the information that environment (2) is a further position in which the phoneme /e/ contrasts with /eo/. Thus it can be finally concluded that the segments [e], [eo], [i], [o], [u] and [y] appear in this environment, representing the phonemes /e/, /eo/, /i/, /o/, /u/ and /y/ respectively, and the relevant contrasts are recorded in (2.2.35).

2.3.3 Environment (3): before front consonants followed by back vowels

According to (2.2.20) the following contrasts can be assumed to operate in this environment: between [æ], [ɑ], [eo], [o], [u] and [y], representing the phonological units /æ/, /ɑ/, /E/ /, /o/, /u/ and /y/ respectively.

On comparison with the analysis outlined in 2.2 however, while it can be allowed, on the basis of the appearance of 'free variation' in certain lexical items, that there is no contrast between [i] and [iu], [e] and [eo] respectively, (2.2.33) suggests that contrasts
operate between (i) [æ] and [æ:] and (ii) [œ] and [iu] which seem to be unfounded in the light of the diachronic evidence.

(ii) /æ/ ≠ /œ/

This contrast is suggested on the basis of spellings such as heardhara and pearuc, geabulí (2.2.13).

A consideration of the diachronic developments that can be assumed to affect the vowels in these forms, however, suggests that [æ:] is the only segment that appears. The a spellings can be explained with reference to the phonemic status of the sounds concerned. According to (2.2.33) [æ:] and [æ] are allophones of the same phoneme /æ/. Thus the graphs á and ea, which presumably normally represent these segments (or so, at least, their use for the segments [æ:] and [æ:] would seem to suggest) are evidently interchangeable. The broad phonetic value of the allophone that appears can presumably be predicted from an examination of the relevant context. The spellings in this case need not therefore be interpreted as indicating a phonemic contrast between [æ] (/æ/) and [æ:] (/æ/), but can simply be explained with reference to the fact that each is a member of a set of graphs that can represent the phoneme /æ/. That [æ:] is the allophone attested in this instance can automatically be deduced from a consideration of the environment. Clearly the complication arises because more than one graph is used
to represent the allophones of this particular phoneme, which is not generally the case in orthographic systems (§1.3.2.1.2). This can be explained with reference to the fact that the long counterparts of the segments [æ:] and [o:] have phonemic status in the Cp. dialect (see §2.1.1.1.3). As established in §2.1.1.1, it is generally the pattern in OE that a graph or digraph will represent both long and short segments which correspond in quality. Thus the symbols a and ea can be used to represent the short segments that correspond to [æː] and [oː], despite the fact that these segments are not distinct phonemes in the language.

The analysis outlined in 2.2 would therefore seem to be the more acceptable, and that suggested in 2.1 may be dismissed on the grounds that it was based on an over-literal interpretation of the spelling evidence.

(ii) /iu/  $\neq$ /eo/

While the spellings that appear may suggest a contrast between [iu] and [eo], if it is accepted that the historical developments described in 2.1 had operated in the Cp. dialect it would seem that such a contrast can no longer be maintained. In this case the io spellings can easily be explained as 'orthographic archaisms' resulting from the conservative nature of the early OE spelling system. The analysis outlined in 2.2 would therefore seem to be far more appropriate.

Thus in this environment the contrasts that appear can finally be established as being between the segments
[eo], [œ], [o], [u], and [y] which belong to the phonological units //E0/, /a/, /o/, /u/ and /y/ respectively. This information will be captured in (2.2.35).

2.3.4 Environment (4): before /l/ followed by a front consonant

According to (2.2.20), the following segments contrast in this environment: [eo], [e], [i], [o], [u] and [y], representing /eo/, /e/, /i/, /o/, /u/ and /y/ respectively, whereas in (2.2.33) a contrast between [e], [i], [o], [u] and [y] representing //e//, /i/, /o/, /u/ and /y/ is suggested.

2.2 establishes that the contrast between [e] and [eo] has been suspended in this environment and [e] is the only segment that appears. The graphs e and eo are therefore presumably equivalent, and in spite of the occasional eo spelling (such as seolfboran (2.1.27)), we are not forced to maintain that any contrast between e and eo should occur. In this case the analysis in 2.2 can be adopted as the more feasible and that implied in 2.1 may be dismissed as resulting from an over-literal interpretation of the spelling evidence. Thus the segments [e], [i], [o], [u], [y] (//E//, /i/, /o/, /u/, /y/) apparently contrast in this position, and this is the situation represented in (2.2.35).
2.3.5 Environments (5) and (7): before /l/ or /r/ followed by a consonant in an i-mutation environment

2.2 established that the graph æ in forms such as eduælle and geærpte represents the segment [e]. The appearance of æ can be explained as an 'archaic' spelling. It seems to be becoming increasingly likely that the segment [æ] does not occur in the synchronic short vowel system of the Cp. dialect, and that the analysis outlined in (2.2.33) rather than that of (2.2.20) is potentially more accurate.

2.3.6 Environment (6): before /r/ followed by a 'front' consonant

According to the analysis outlined in 2.2, the segments [æ], [e], [eo], [iu], [o], [u] and [y] representing the phonemes /æ/, /e/, /eo/, /i/, /o/, /u/ and /y/ respectively contrast in this environment, whereas (2.2.20) implies that only [æ], [e], [iu], [o], [u] and [y] from //æ//, //e//, //eo//, //i//, //o//, //u// and //y// appear, i.e. the /e/ ≠ /eo/ contrast is not attested.

In this case, apparently, the more regular pattern is reversed and the evidence of historical development (2.2) suggests a greater number of contrasts than those that can be deduced from the spelling evidence. As noted in 2.1, the denial of a contrast between /e/ and /eo/ in this environment is based on the interchange of the graphs e and eo in the same lexical item: as shown in
the forms *erdling* and *eordreste* respectively. However, on the basis of historical developments outlined in 2.2, it is fairly conclusive that a contrast between /e/ and /eo/ would occur in this environment. The interchange between the graphs e and eo is, in fact, best explained as an error.

The /e/ ≠ /eo/ contrast is suspended in a large number of environments, see (2.2.33). Moreover, even where the contrast is attested (i.e. before morpheme-final consonants and unstressed front vowels), in practice only a few lexical items enter into the opposition due to the sporadic nature of the developments that have brought it about. It is therefore understandable that the symbols e and eo should be considered equivalent, and indeed they frequently interchange in other environments, compare 2.1.2 above.

The appearance of occasional historically unmotivated eo spellings, therefore, presents no great threat to the analysis suggested in (2.2.33). The phonemic status of /e/ and /eo/ in this context is confirmed, despite what may at first be interpreted as evidence to the contrary.

Thus, yet again, the analysis based on the consideration of the suggested historical developments that affect the vowel system can be seen to be the more acceptable, reinforcing the necessity for caution in the interpretation of the spelling evidence. The segments [eo], [e], [ɛo], [iu], [o], [u] and [y] representing
/eo/, /e/, /a/, /i/, /o/, /u/ and /y/ therefore contrast in this environment, a situation which is recorded in (2.2.35).

2.3.7 Environment (8): /r/ followed by a labial consonant

While on the basis of a literal interpretation of the graphs that appear we may expect that [ɔ] is represented by the first a in sarwa, the historical developments that can be assumed to affect this form (§2.2.2.2.2) suggest that the broad phonetic value of the stressed vowel is in all probability [æɔ]. An appropriate explanation of the a spelling can be given along the lines of that suggested for heardhara in 2.3.3(i) above. It cannot be maintained that the segment [ɔ] was ever attested in the development of this form: the underlying PG [a] presumably became [æ] and subsequently [æɔ]. However, due to the fact that [æɔ] and [ɔ] are allophones of the same phoneme, /ɑ/, and therefore no contrast operates between them, the symbols ea and a can be interpreted as equivalent spellings, representing whichever allophone of the phoneme is to be predicted from consideration of the synchronic context, in this case [æɔ].

This means that the realisation rules for the low phoneme can be greatly simplified, there being no need to maintain that /r/ followed by a labial rather than a non-labial consonant should constitute a distinct
environment.

2.3.8 Environment (9): before /u/

In this case both (2.2.20) and (2.2.33) imply that the segments [iu], [eo], [a], [o], [u] and [y], representing /i/, //EO/, /a/, /o/, /u/ and /y/ respectively contrast in this environment. Note however that in (2.2.20) [a] is an alloarchiphone of //Æ// rather than an allophone of //a//. This can be explained by the fact that it is only an over-literal interpretation of the appearance of æ in various environments that suggests that /æ/ should be considered to be a phoneme, or even [æ] suggested as a phonetic segment, in the Cp. dialect. The analysis based on the proposed diachronic developments is therefore supported by a consideration of the spellings that appear in the MS. There is no controversy over the suggestion that the above set of contrasts should occur, and this situation is represented in (2.2.35).

2.3.9 Environment (10): before nasals

According to (2.2.20), a contrast between [e], [i], [o], [u], [y] and [Æ] representing /e/, /i/, /o/, /u/, /y/ and //Æ// respectively operates in this environment. The variation between a and o spellings can presumably be explained as sporadic attempts by the scribe to represent the rounded nature of the segment that can be assumed to have developed from PG /a/ in
this position (§2.1.1.2.6; §2.1.5.3).

The segment [ɔ], although not phonemically distinct from [a], was evidently perceived as being sufficiently phonetically different to merit some sort of differentiation in the spelling. As the roman alphabet did not supply a suitable symbol for [ɔ], the occasional use of a ꞉ which would reflect the segment's rounded quality is understandable.

However, further justification for the interchange of a and ꞉ before nasal consonants can be discovered on consideration of the analysis given in 2.2. In that section it was established that PG [o] became [u] before most nasal consonants: i.e. before most nasals followed by another consonant and single [n]. Thus the contrast between /a/ and /o/ was suspended in this environment, any remaining reflexes of /o/ (i.e. before 'unsupported' [m]) presumably merging with [ɔ]. The analysis suggested in 2.2 must therefore be considered the more satisfactory. That the a/o variation is not attested with sufficient regularity in the Cp. MS to support the neutralisation (i.e. the graphs do not interchange in the same lexical item) can be attributed to the fact that a relatively limited amount of data has been consulted.

2.3.10 Environments (11) - (12): before the reflexes of PG /k/, /χ/ and /θ/, with or without preceding /l/ or /r/
(2.2.20) suggests that a contrast between //Æ// and //E0// operates in these contexts although the lack of relevant data in those narrowly specified environments in the Cp. MS itself must be noted. According to (2.2.33) however, [e] representing //E/// is the only segment that appears.

As discussed in 2.2, it is likely that (2.2.33) represents the more plausible analysis, as the æ spellings can easily be dismissed as orthographic fossils. The historic development of the underlying vowel in forms such as gehœ¿ and fœ¿ is apparently as follows: PG [a] > [œ] > [æœ] > [œ] > [e].

Thus it can once more be suggested that the segment [œ], despite the frequent appearance of æ spellings in the MS does not appear synchronically in the short vowel system of the Cp. dialect. It would seem, therefore, that the proposed final analysis will have more in common with that represented in (2.2.33) than that of (2.2.20).

2.3.11 Environment (13): before a back consonant followed by a back vowel

The analysis suggested in 2.1 proposes that /æ/, //E0// and possibly /œ/, represented by [œ], [e] and [œ] respectively contrast in this environment. 2.2 however suggests that [e] is the only segment that occurs, representing the hyperphoneme //E///.

As the diachronic development of PG [a] in this
environment in a dialect such as that represented by Cp. can be assumed to be as follows: [a] > [ɔ] > [œ] > [æ] > [e], the æ spelling can be easily dismissed as 'archaic', reflecting the segment at an earlier stage in its development.

Indeed, the same explanation may be given for the appearance of ea (and a in the forms in which it is attested). However, it may well be claimed that it is undesirable to maintain that the orthographic system should be quite so slow to record phonological change. While it is reasonable to interpret spellings as reflecting an immediately preceding stage in the development of a segment, it does not seem feasible that they should reflect one that is several stages removed from the proposed synchronic value.

It is therefore perhaps advisable to give some other explanation for the appearance of the ea digraph. This can be achieved along the lines of that suggested for a in heardhara in 2.3.3(i). The /E/ /a/ contrast is apparently suspended in this environment, and as ea is a permissible spelling for the phoneme /a/, its appearance for any allohyperphone of the hyperphoneme that represents the suspension of /E/ /a/ is perfectly feasible. There is no risk of ambiguity in the interpretation of the graphs and [e] can automatically be recovered as the broad phonetic realisation of the vowel in this position.

In this way, therefore, the apparent vast
discrepancies between the analyses based on consideration of
1 the distribution of the spellings that appear in Cp. (2.1), as represented in (2.2.20) and
2 the diachronic developments that can be assumed to affect the system (2.2), as represented in (2.2.33) can be reconciled.

In the vast majority of cases the conclusions reached in 2.2 would seem to be more valid, when the various factors that must be considered possible influences on the interpretation of the spelling evidence are taken into account. The dangers of an over-literal interpretation of the graphs are therefore constantly emphasised.

Thus (2.2.35) represents an analysis of the short vowel system of Cp. which is supported by the evidence of both the assumed diachronic developments of the system and the distribution of graphs in the MS itself.
It follows from much of 2.3 that the analysis is in most cases very similar to that represented in (2.2.33). However, occasional spellings in forms such as heor and weosend illustrate historical developments which are restricted to certain lexical items and were therefore overlooked in 2.2. On the basis of these spellings it is necessary to make minor amendments to (2.2.33), basically extending the number of environments in which the /e/ # /e0/ contrast is attested. This illustrates once more that it is essential to consider all available sources of evidence in order to achieve the most comprehensive analysis.

3 The unstressed vowel system

As established in §2.1, it can be assumed that the following vowel segments might be expected to appear in syllables that are totally unstressed in the Cp. dialect:

[æ] [ə] [a] [u] [o] [ɔ] and [ə].

These are presumably represented by the following graphs:

æ, e, i, o, u, and a.

The controversy over the broad phonetic value (which is, of course, determined by the phonemic status) of the segments represented by æ, e and i on the one hand, and o, u on the other has already been noted in §2.1.2.6; §2.1.3; §2.1.4.5; §2.1.5.4; §2.1.6.4.

3.1 The distribution of the graphs in the MS

This section attempts to arrive at an analysis of the phonemic status of the unstressed vowels in the Cp. dialect on consideration of the distribution of the relevant graphs in the MS itself. On the basis of (2.2.36) it may at first appear that six unstressed
vowel phonemes, i.e. /æ/ /i/ /u/ /o/ /a/ and /ə/, are represented, as all the relevant graphs contrast in word-final position.

(2.3.36)

(a) e scirde (2.1.37)
    beme (2.1.37)
    æ sure (2.1.50)
    i meli (2.1.65)
    o freomo (2.1.77)
    u rgu
    a ældra (2.1.13)

(b) Before [s]

    a fleotas (2.1.13)
    e helmes (2.1.38)
    i lendis (2.1.66)
vowel phonemes, i.e. /æ/ /i/ /u/ /o/ /a/ and /ə/, are represented, as all the relevant graphs contrast in word-final position.

(2.3.36)

(a)  e  scirde  (2.1.37)
    beme  (2.1.37)
    æ  suræ  (2.1.50)
    i  meli  (2.1.65)
    o  freomo  (2.1.77)
    u  ragu
    a  ældra  (2.1.13)

(b) Before [s]

    a  fleotas  (2.1.13)
    e  helmes  (2.1.38)
    i  lendis  (2.1.66)
Before [n]

\[
\begin{align*}
\text{o} & \quad \text{hælsadon} \quad (2.1.77) \\
\text{u} & \quad \text{nomun} \quad (2.1.73) \\
\text{e} & \quad \text{gebeaten} \quad (2.1.39) \\
\text{a} & \quad \text{lyblæcan} \quad (2.1.14)
\end{align*}
\]

1 mosicum: ragu 'lichen' 1332

Note that in reagufinc (2.1.83) the u in all probability represents a 'linking vowel' (§3.2.5).

On closer investigation, however, this does not appear to be the case. As noted in §2.1.1.3.1, unstressed vowels in OE are most frequently attested in inflectional affixes. (2.3.37) shows that there is extensive free variation in the representation of many of these affixes in the Cp. MS, notably between the graphs æ and e, i and e, u and o, a and o and even æ, e and i.

(2.2.37)

(a) æ and e

weak fem. nom. sing. suræ
strong fem. dat. sing. setunge
(b) 

<table>
<thead>
<tr>
<th>Strong masc. dat./instr.</th>
<th>idle (2.1.37)</th>
<th>hregli (2.1.66)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-stem nom. sing.</td>
<td>daile (2.1.37)</td>
<td>sibi (2.1.65)</td>
</tr>
<tr>
<td>Ja-stem nom. sing.</td>
<td>hornblauuere</td>
<td>meli (2.1.37)</td>
</tr>
<tr>
<td>Past participle of strong verbs</td>
<td>gebeaten</td>
<td>binumine (2.1.67)</td>
</tr>
<tr>
<td>Strong masc. gen. sing.</td>
<td>lendis</td>
<td>helmes</td>
</tr>
<tr>
<td>3rd. pers. sing. pres. tense.</td>
<td>wereth</td>
<td>sifli (2.1.65)</td>
</tr>
<tr>
<td>-ils/-els²</td>
<td>gyrdels¹</td>
<td>foedils¹</td>
</tr>
</tbody>
</table>

(c) 

<table>
<thead>
<tr>
<th>ō-stem fem. nom. sing.</th>
<th>freomo</th>
<th>ragu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong neut. pl.</td>
<td>geroepro</td>
<td>speorul</td>
</tr>
<tr>
<td>1st. pers. sing. pres. tense.</td>
<td>frigno (2.1.77)</td>
<td>groetu (2.1.87)</td>
</tr>
<tr>
<td>Past tense plural 2</td>
<td>helsadon</td>
<td>nomun</td>
</tr>
<tr>
<td>-or</td>
<td>fosterbearn</td>
<td>aturlæe (2.1.90)</td>
</tr>
<tr>
<td>-oc²</td>
<td>wilocscel (2.1.78)</td>
<td>pearuc (2.1.90)</td>
</tr>
<tr>
<td>Linking vowel</td>
<td>heagðorn</td>
<td>reagufinc (2.1.80)</td>
</tr>
</tbody>
</table>
(d) **æ** and **i**

1

strong fem. nom./acc. **halfe** **lærø** **heawi**
plural (2.1.37) (2.1.66)

weak verbs past pple. **gelimed** **sibød** **oberstølid**
(2.1.39)(2.1.50)3 (2.1.67)

linking vowel **ceselyb** **fuløtreo** **flycticlaø**
(2.1.31) (2.1.50) (2.1.70)

(e) **a** and **o**

1

weak masc. nom. sing. **cyta** (2.1.13) **rimo**

weak verbs of class II past tense **maøalade** **feotod**
(2.1.15)

1 The following forms have not been glossed in §2.1

aucupatione: **setunge** 'ambush' 244

coturno(ix): **wodha** 'quail' 584

contos: **speoru** 'spear, lance' 528

lærø see §2.1.3.3

crepido: **rimo** 'rim, bank' 601

arcessitus: **feotod** 'fetched' 222

braq(h)iale: **gyrdels** 'girdle' 321

altilia: **foedils** 'fatling' 134

2 There is some controversy over the degree of stress assigned to these affixes: §2.1.2.6.2; §2.1.4.5.2; §2.1.6.4.4; §2.1.1.4.1; §2.1.5.4.2; and (5.2.4) ft. 2.

3 If it is accepted that this is not a form of the noun sifepa (2.1.50).

The spelling of some affixes, however, would appear to be invariable (2.2.38).
(2.2.38)

(a)  \(u\)

wa-stem nouns, nom. sing.  treuteru (2.1.24)  teoru (2.1.87)

u-stem nouns, nom. sing.  uudusnite (2.1.87)

strong nouns, dat. plural  holum (2.1.88)

(b)  \(e\)

3rd. pers. sing. past tense  scirde  ma附加字母alade

strong masc. acc. sing.  gfeotodne (2.1.235)

(c)  \(a\)

gen. plural (all genders)  cilda, borda (2.1.13)

strong masc. plural  weorras, fleotas (2.1.13)

oblique cases of weak nouns  lyblæcan, bergan (2.1.14)

infinitive  gemengan (2.1.14)

1 The \(u\) may, however, represent a linking vowel.

This 'free variation' can be assumed to have the same significance for the phonological analysis as that which occurs between graphs representing stressed vowels in the same lexical item discussed in 1 and 2 above. The only difference is that the variation occurs in inflectional rather than lexemic morphemes. Thus, for example, any /æ/  ʃ /ə/ opposition proposed on the evidence of forms such as beme and surə cannot in fact be maintained. The contrast between the graphs ə and e
does not convey a difference in meaning as the same morpheme is represented in each case. Given the extent of the 'free variation' shown in (2.2.37), it is reasonable to suggest that the phonemes

/æ/ represented by æ and e,
/i/ represented by i and e,
/o/ represented by o and u, and
/a/ represented by a

should occur in the unstressed vowel system of the Cp. dialect.

Furthermore, as certain affixes are spelt with the graph e alone (2.2.38b) it is possible to claim that the /i/ ≠ /æ/ contrast has been neutralised in these environments. This suggestion is supported by the free variation between æ, e and i, at least in the representation of the linking vowel in compounds

(2.2.37d) (which, it can be assumed, comprises a distinct morpheme, see §3.2.5).

It must be noted that the invariable i spellings attested in certain derivational affixes (e.g. -isc, -ing etc.) cannot be interpreted, as implied by Campbell (1959: §371), as representing a morphologically predictable allophone of /æ/. By virtue of the fact that the affixes concerned are derivational it can be presumed that the vowels in these syllables are not totally unstressed. In any case, the suggestion that /æ/ (the least specified vocalic segment) should have an allophonic variant that is more phonetically distinct
would present us with a situation that is highly undesirable.

Note that the free variation in -els/-ils etc. may be interpreted as an indication that the stress has been lost in the syllables concerned. This is, however, best explained as being the direct result of the fact that the syllables (a) no longer synchronically represent a derivational affix in the morphological structure of the Cp. dialect, or (b) in the case of -ed and -en, represent a combination of derivational and inflectional material (see §2.1.2.6.3 and references therein). As far as the phonemic status of the segments represented by the back vowel graphs is concerned, in view of the many affixes in which the u~o alternation is not attested (2.2.38a) it can be suggested that the relevant affixes contain a morphologically predictable variant of /o/, i.e. [u]. Once more, the invariable u spelling, in, for example, -ung or un- presumably represents vowels that carry some degree of stress, as these affixes are in fact derivational. Furthermore, it is clear that given the alternation between u and o in -uc/-oc and -or/-ur the synchronic status of these syllables as representing derivational affixes must be called into question (§2.1.6.4.4 and references therein). The interchange between a and o in the nominative singular of weak masculine nouns and the past tense forms of weak verbs of class II (2.2.37e) may be interpreted as suggesting that the contrast between /u/ and /o/ has been
neutralised in these morphologically predictable environments.

(2.2.39) therefore depicts the analysis of the unstressed vowel sub-system of the dialect represented by Cp. which can be deduced from a consideration of the distribution of the graphs that appear in that MS.

The archiphonemes /æ/ and /o/ have been posited to represent the suspension of contrast between /æ/ and /i/ and /o/ and /o/ respectively.
3.2 The diachronic developments that affect the unstressed vowel system

This section discusses the analysis that can be suggested by a consideration of the diachronic developments that are assumed to affect the unstressed vowel segments in the linguistic continuum to which the Cp. dialect belongs, particularly in the prehistoric and literary OE period.
As noted in §2.1.2.6.1, reflexes of the OE unstressed vowels rarely survive in later stages of the language, and given the diversity of PG and I-E sources for the vowels of inflectional affixes described by Campbell (1959: Ch. VII), it will suffice for the purposes of the present account to assume that the segments listed in (2.2.40) would have phonemic status in unstressed syllables at the beginning of the Pre-OE period.

(2.2.40)

/æ/ /ə/ /ɛ/ /ɪ/ and /u/ Campbell (1959: §368)

Campbell (1959: §§369, 380) suggests that the following processes affected these segments in the prehistoric and literary OE periods.

(i) /æ/, /ɪ/ and /ɛ/ merged into 'a sound written e' (presumably [ɘ], §2.1.2.6), Campbell (1959: §§369-370);

(ii) [u] develops to [o] in most contexts, although the high vowel is more common in 'protected environments' (ibid: §375);

(iii) /ə/, however, remains 'relatively stable' for most of the OE period (ibid: §375).

Available evidence suggests that the distinction between /æ/ and /o/ and even /q/, /o/ and /ə/ was in the process of being lost in the late OE period (ibid: §§377-380).
It remains, therefore, to examine the material in Cp. with a great deal of caution to ascertain whether or not these developments can be assumed to have occurred by the period at which the MS was composed.

3.2.1 The unstressed front vowels

Given the frequent appearance of e for both Pre-OE [æ] and [i] (§2.1.2.6), it would seem fairly certain that the distinction between Pre-OE /æ/, /i/ and /ə/ had indeed been lost in the Cp. dialect, a fact which the 'back spellings' in, for example sibæd, binumine and heawi (2.1.50; 2.1.66; 2.1.67) would seem to confirm beyond any reasonable doubt.

3.2.2 The unstressed back vowels

Given that, according to Campbell (1959: §373; §587; §735a;e), variants in o occur in many OE MSS for inflectional affixes with Pre-OE [u], it can be assumed that the development of [u] to [o] had occurred by the literary OE period. The appearance of the graph o in the forms in (2.2.37c) would seem to support this. The u spellings are therefore best explained as othographic archaisms. However, as Campbell (1959: §373) implies that u is invariably attested in, for example, the affixes expressing the categories ë-, u- and wa-stem nominative singular and dative plural (see 2.2.36a), it may well be reasonable to suppose that u represents a morphologically predictable variant in these contexts.
The a ~ o alternation in the past tense forms of weak verbs of class II can, however, be seen to be the result of a particular diachronic development (Campbell, 1959: §757; §385). It is, therefore, possible to suppose that the neutralisation of /a/ and /o/ should be allowed in this morphologically predictable environment. However, the controversy over the degree of stress that is to be assigned to the vowel in this affix must again be noted.

Finally, §2.1.1.3.1.1 suggested that /a/ may have a rounded or nasalised variant, [ä] or [ɔ], when it occurred before a nasal consonant. The suggestion is motivated largely by consideration of what appears to be phonetically natural, rather than by any direct evidence to be found in the spellings that appear.

(2.2.41) therefore represents the analysis of the unstressed vowel system of Cp. that can be suggested on consideration of the diachronic developments that affect the relevant segments in the prehistoric OE period. The archiphoneme ///Q// is posited in order to reflect the suspension of the opposition between /Q/ and /o/ in the past tense forms of weak verbs of class II.
3.3 The final analysis

It remains therefore to attempt to reconcile the analyses represented in (2.2.39) and (2.2.41) respectively, in an attempt to reach a satisfactory account of the phonemic status of the unstressed vowels in the Cp. dialect.
3.3.1 The front unstressed vowels

The major discrepancy between the accounts given in 3.1 and 3.2 as far as the front unstressed sub-system is concerned is that in (2.2.41) the /æ/ /i/ contrast is presumably neutralised in every context, whereas in (2.2.39) this does not appear to be the case. As noted in §2.1.3.5; §2.1.4.5 however, the æ and i spellings which in 3.1 were assumed to motivate this contrast can in fact be dismissed as 'archaic'. The orthographic system of Cp. is apparently slow to reflect phonological developments, which (as confirmed by the evidence cited in 3.2) have recently taken place in the language concerned. The contrast between the segments normally represented by æ, e and i has been lost, and the graphs have therefore become equivalent in the orthographic system of Cp., at least when they appear in unstressed syllables. Thus the analysis suggested in (2.2.41) would seem to be more likely.

3.3.2 The back vowel sub-system

As far as the back vowels are concerned, the major discrepancy between the accounts given in 3.1 and 3.2 respectively is that the /a/ /o/ opposition is apparently neutralised in a greater number of environments in (2.2.39). As there is no historical reason why [o] and [O] should have merged in the nominative singular of masculine nouns, the analysis given in (2.2.41) must be considered more valid. The o
spelling in rimo may result from the influence of the adjacent nasal (compare the a-ø alternation in the spellings of short vowels in stressed syllables, see §2.1.1.2.6; §2.1.5.3) but given that the phenomenon is only attested in that one form the ø may easily be dismissed as an error.

The suggestion that [ɔ] should appear before nasals (3.2) is not threatened by the fact that this is not motivated by a consideration of the spelling evidence in 3.1. Given that allophonic variants are not regularly represented in the orthographic system this situation is only to be expected.

As all discrepancies between the analyses in (2.2.39) and (2.2.41) can be explained by the fact that the spelling evidence need not be given such a literal interpretation, as is the case in 3.1, it can be assumed that (2.2.41) gives an accurate representation of the phonemic status of the vowels that appear in unstressed syllables in the dialect represented by the Cp. MS.

2.2.2 Consonants

It can be deduced from §2.1 that there is a far greater number of consonantal than vocalic segments in the dialect represented by the Cp. MS and presumably in OE in general. Furthermore, the relationships that operate between some of these segments (as indicated in the discussion of the segments represented by the graphs h, g, c, cg, f, b, d, th, þ and ȷ, see §2.1.14 -
§2.1.23) seem to be fairly complex.

The present account will therefore give separate consideration to various sub-sections of the consonantal system as follows:

1. The velar and palatal obstruents (i.e. the reflexes of PG [j], [x], [z]);
2. The voiceless velar stop;
3. The labial obstruents;
4. The dental obstruents;

before embarking on an analysis of the system as a whole in which:

5.1. The remainder of the phonemic inventory will be established;
5.2. An attempt will be made to formulate realisation rules for the individual phonemes;
5.3. The existence of certain 'minor' instances of neutralisation which result from the operation of phonotactic constraints in the language will be considered. These neutralisations are for the most part attested between the phonemes in 5.1, and a brief attempt will be made to formulate a generalisation on the basis of which at least some of them may be predicted.

As in the discussion of the vocalic system in §2.2.1 above, this account will compare and contrast the analyses based on consideration of

1. The synchronic distribution of the segments presumably represented by graphs in the Cp. MS
The diachronic developments that can be assumed to have affected the segments concerned, especially in the prehistoric OE period, as this will result in a more comprehensive final analysis.

2.2.2.1 The velar and palatal obstruents

1.1 The synchronic distribution of the graphs in the MS

This section attempts to produce an analysis of the velar and palatal sub-system based on a consideration of the segments presumably represented by the graphs $g$ and $h$ in the Cp. MS when these spellings are given the most literal interpretation possible.

In view of certain special factors concerning the development of the OE orthographic system (see §2.1 and §1.3.2.1.2.1) it is not practical to assume a rigid one-to-one relationship between graph and phoneme in the analysis of this particular area. The present account will therefore accept that the graph $g$ is used to represent both velar and palatal segments without further elaboration at this juncture. In all other cases, however, a degree of consistency in the use of the graphs will be assumed: i.e. it will be claimed that in the vast majority of instances the graphs $g$ and $h$ represent segments that are phonetically distinct from each other, $[\ddot{u}]$ and $[\chi]$ for example, unless there is very strong evidence to suggest that this may not be the case.

(2.2.42) considers the phonetic segments that can
be assumed to appear in various synchronic environments in Cp., for the most part those in which specific diachronic developments have apparently taken place (§2.1.14 - 16 and references therein).
<table>
<thead>
<tr>
<th>Environments</th>
<th>Segment</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Before bk. vls.</td>
<td>[X] [Ø] [j]</td>
<td><strong>holm goos geocbogahurnitu gyrdels</strong></td>
</tr>
<tr>
<td>2 Before sec. ft. vls.</td>
<td>[X] [Ø]</td>
<td><strong>helmes gelo</strong> (2.1.191)(2.1.132)</td>
</tr>
<tr>
<td>3 Before ft. vls.</td>
<td>[X] [j]</td>
<td></td>
</tr>
<tr>
<td>4 Before consonants [X] [Ø]</td>
<td>[j]</td>
<td><strong>hræfæn groeni</strong> (2.1.141)(2.1.131)</td>
</tr>
<tr>
<td><strong>Foot-final (and before voiceless consonants)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 After ft. vls.</td>
<td>[ç] [Ø'] [j]</td>
<td><strong>elhtæ tag wegbrade</strong></td>
</tr>
<tr>
<td>6 After bk. vls.</td>
<td>[X] [Ø]</td>
<td><strong>scoh trog</strong> (2.1.125) (2.1.134)</td>
</tr>
<tr>
<td>7 After ft. vls.+ nasals</td>
<td>[j]</td>
<td><strong>spryng</strong> (2.1.141)</td>
</tr>
<tr>
<td>8 After bk. vls.+ nasals</td>
<td>[g]</td>
<td><strong>pung</strong> (2.1.140)</td>
</tr>
<tr>
<td><strong>Foot-medial (between sonorants)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 ft.vl._ft.vl</td>
<td>[Ø'], [j]</td>
<td><strong>flege ebnwege</strong> (2.1.160)</td>
</tr>
<tr>
<td>10 ft.vl.+nasal _ft.vl.</td>
<td>[j]</td>
<td><strong>gepingio</strong></td>
</tr>
<tr>
<td>11 bk.vl._ft.vl.</td>
<td>[X] [Ø]</td>
<td><strong>tahæ troges</strong> (2.1.129)</td>
</tr>
<tr>
<td>12 bk.vl.+nasal ft.vl.</td>
<td>[g]</td>
<td><strong>gemengiunge</strong> (2.1.141)</td>
</tr>
<tr>
<td>13 ft.vl._bk.vl.</td>
<td>[Ø'], [j]</td>
<td><strong>egan</strong> (2.1.141) <strong>hegas</strong></td>
</tr>
<tr>
<td>14 ft.vl.+nasal _bk.vl.</td>
<td>[g] [j]</td>
<td><strong>pinga gemengan</strong> (2.1.14)</td>
</tr>
<tr>
<td>15 bk.vl._bk.vl.</td>
<td>[X] [Ø]</td>
<td><strong>muha geocbogahungas</strong></td>
</tr>
<tr>
<td>16 bk.vl.+nasal _bk.vl.</td>
<td>[g]</td>
<td><strong>pugas</strong></td>
</tr>
<tr>
<td>17 ft.vl._consonant + v.l.</td>
<td>[j]</td>
<td><strong>segnas</strong></td>
</tr>
</tbody>
</table>

(2.2.42)
The following forms are not glossed in §2.1

mantega: teg 'tie, band' 19
ap(p)aritio: gepingio 'provision' 189
acervus: muha 'mow' 46
aconito(a): bungas 'poisonous plant' 45
aquilea: segnas 'sign, standard' 194

These forms are not attested in the section of Cp. under consideration. Taken for the most part from Campbell (1959: §§426-451) they are included to ensure that the analysis is as comprehensive as possible.

The occasional spellings in c, ch, gh (§2.1.17.5;6) are disregarded as mere graphic variants of no phonological significance.

There is direct evidence that the reflex of PG or W-G [j] appears in contrast with the reflex of PG [Ø] when the latter has developed to a segment which is essentially velar in the Cp. dialect. In environment (1) for example, geocboga contains the reflex of PG [j], and in environment (13), hegas contains the reflex of a W-G palatal approximant (§2.1.15.3.3).

It is, however, necessary to account for the absence of reflexes of PG or W-G [j] in the other environments cited. While it is possible that this may simply result from the fact that a relatively limited amount of data has been consulted (and indeed this can be assumed to be the most likely explanation for the absence of [j] in environment (2) in particular), Prokosch (1939: §32b) states that

Owing to their semi-vocalic character, j and w in medial and final position are apt to alternate with i and u.

This suggests that in the vast majority of cases, OE [j] will only appear in medial and final position as a reflex of PG [Ø].

With the exception of [j] in hegas there is no evidence of [j] from an original palatal segment in these environments in the data consulted. On this basis therefore, the present account will assume at this juncture that PG or W-G [j] does not have a consonantal reflex in the Cp. dialect, except in initial position.
1.1.1 Initial position: environments (1) – (4)

On consideration of the segments that appear in environments (1) and (2), the absence of forms containing reflexes of PG [j] in initial position being in all probability a result of the fact that the database is somewhat limited, a three-way contrast between [Χ], [Ø] and [j] is established and the phonemic status of /Χ/, /Ø/ and /j/ can be confirmed.

It must be noted that this three-way contrast can be allowed in spite of the fact that it is only attested between two graphs: h and g. As noted above, it is practical to assume that g represents both [j] and [Ø] at this stage in the account and, as mentioned in §2.1.15.1.2, e presumably appears as a diacritic representing the palatal nature of the initial consonant in the form geocboga. Apparently, however, the contrast between these three phonemes fails to materialise in the vast majority of environments considered in (2.2.42). It is necessary, therefore, to posit various archiphonemes and even hyperphonemes to capture the relationships that operate between them.

In environments (3) and (4) it would appear that contrasts are only attested between the voiceless velar and voiced palatal segments on the one hand (3), and the voiceless velar and voiced velar on the other (4). In both cases, therefore, it can be seen that the essential contrast is between 'voiced' and 'voiceless' rather than 'velar' and 'palatal' segments respectively: i.e.
apparently the contrast between /j/ and /⟩/ has been suspended. On this basis, it is possible to posit a 'voiced' archiphoneme //J// which is apparently realised as a palatal segment: [j] in (3), and a velar segment: [⟩] in (4). This fact can be captured by the suggestion that //J// has two alloarchiphones: [[[j]]] and [[[⟩]]] respectively.

The contrasts that operate in initial position in the velar/palatal sub-system of the Cp. dialect can therefore be represented as in (2.2.43).

(2.2.43)

\[ /X/ \]
\[ [X] \]
\[ [⟩] \]
\[ [j] \]
\[ [⟩] \]
\[ [j] \]
\[ C \]
\[ FT. VLS. \]

1.1.2 Final position: environments (5) – (8)

In environment (5) it appears that a three-way contrast operates between:

[⟩'], a palatalised variant of [⟩] which develops after
front vowels when they originate from a Pre-OE diphthong (§2.1.2.1.2.1 and references therein); [ɔ], a variant of [ɔ] which appears after all front vowels (§2.1.14.2.2) and [j], the normal reflex of PG [ɔ] when it follows a front vowel (§2.1.15.2.4).

It is once more assumed that the graph  represents segments that are basically both 'palatal' and 'velar'. The voiced/voiceless contrast is therefore motivated by the appearance of  in forms such as tæg.

In environment (6) the contrast is essentially between voiced and voiceless velar segments, or so the appearance of the graph  in forms such as  would seem to suggest. In the absence of [j] (from either PG/ W-G [j] or PG [ɔ]) in this position it is reasonable to assume that the contrast between /ɔ/ and /j/ has once more been suspended. The phoneme /ɔ/ therefore enters into opposition with the archiphoneme /ɔ/, in this case realised by the velar alloarchiphone [ɔ].

In environments (7) and (8) only one graph,  is attested and it can therefore be suggested that no contrast operates in these contexts. In (8)  represents a velar segment (probably a stop rather than a fricative: i.e. [g], §2.1.15.4), whereas in (7) it represents the palatal [j]: this alternation is determined entirely by the nature of the preceding vowel. As, therefore, no contrast is attested between the archiphoneme /ɔ/ and the phoneme /ɔ/, it is
reasonable to posit the hyperphoneme ///</\ /> in these contexts which is realised by the allohyperphones [[[j]]] and [[[g]]] in environments (7) and (8) respectively. \(^47\)

(2.2.44) therefore demonstrates the contrasts that can be assumed to operate between the segments that appear in the velar and palatal sub-system of Cp. in both initial and final position.
1.1.3 Medial position: environments (9) - (17)

In environment (9), despite the fact that only one graph appears: g, it can be assumed that a contrast
operates between the palatal [j] (the normal reflex of PG [ø] in this context) and the 'palatalised' segment [œ'] which occurs after front vowels that originate from Pre-OE diphthongs (§2.1.2.1.2.1). The absence of h suggests that the voiced/voiceless contrast has been neutralised in this environment. The essential contrast is, therefore, between segments that are basically 'velar' and 'palatal' rather than 'voiced' and 'voiceless' and it is desirable to posit the archiphoneme //œ// which represents the suspension of the contrast between /x/ and /ø/ in this context. The archiphoneme is in this case realised by the palatalised fricative alloarchiphone [[œ]]. It must be noted that the segment [j] will be far more regularly attested than [œ'] ([[œ]]) in this position. As established above, the use of one graph, g, to represent both velar and palatal segments is to be considered acceptable at this stage in the account.

In environment (10) it is not possible that the front vowel concerned could be a reflex of a Pre-OE diphthong. The only segment that appears in this environment is [j], the absence of h spellings again confirming the suspension of the voiced/voiceless contrast. It can therefore be supposed that the hyperphoneme //œ// is attested in this position, presumably realised by the palatal allohyperphone [[j]].

Environment (11): Apparently only velar segments
are attested in this context, but on the evidence of spellings in forms such as *tahæ* the voiced/voiceless contrast must be assumed to operate. Thus the phoneme /X/ contrasts with the 'velar' alloarchiphone, [[[O]]], of the 'voiced' archiphone /\j/. Apparently & only represents a velar segment in this environment, assuming, as seems reasonable, that no reflexes of PG or W-G [j] are attested, see (2.1.42) ft.3.

Environment (12): When a nasal consonant follows the first vowel, the absence of h spellings suggests that the voiced/voiceless contrast does not operate. It is reasonable, therefore, to suppose that the hyperphoneme //\O// is represented, in this case realised by the velar allohyperphone [[[g]]].

In environment (13) the contrast between [O'] and [j] is once more suggested (compare (9)), although in this case [O'] is the segment that appears more frequently. [j] occurs only if the front vowel has been produced by the process of i-mutation, or in forms where PG [j] or W-G [j] remains consonantal (Prokosch, 1939: §32b). As no h spellings are attested, it can be assumed that the contrast is basically between 'velar' and 'palatal' segments, and therefore the phoneme /j/ contrasts with an allo-archiphone, [[[O']]], of the archiphone //\O/>. It is, of course, perfectly acceptable that & should represent both velar and palatal segments.

In environment (14) too, the contrast between velar
and palatal segment is preserved, depending on whether or not the front vowel concerned has arisen by a process of i-mutation. As in (12), the voiced/voiceless contrast does not operate. Presumably, however, //[ʃ]/ is realised by a plosive rather than a fricative alloarchiphone: i.e. [[g]] rather than [[ʃ]]. Once more, the graph & represents both palatal and velar segments and e and i appear sporadically as diacritics to indicate the existence of a palatal phone (§2.1.15.4.2). Compare the forms gemengiunge and fragengia (2.1.141).

Environment (15): As both h and g appear in this environment, it must be suggested that the voiced/voiceless contrast is attested. The contrast between /j/ and /h/ has, however, apparently been suspended. Thus a contrast between /h/ and //J// ([[ʃ]]) would seem to be the most likely, & presumably representing only a velar segment in the forms concerned.

Environment (16): After a nasal, however, no h spellings appear, and it would seem that the hyperphoneme //ʃ//, realised as [[g]], is in all probability attested in this environment.

In environment (17) it appears that [j] is the only segment that occurs. Even before a back vowel, PG /ʃ/ develops to [j] if a consonant intervenes (Campbell, 1959: §429). Thus the palatal allohyperphone [[[j]]] is presumably the segment that is represented by g in the forms concerned.
The contrasts that operate in the velar-palatal sub-system of the Cp. dialect, if the spellings that appear in that MS are given a fairly literal interpretation, can be represented as in (2.2.45).
[I] [x] [I] [x]
INITIAL(1) FINAL AFTER
FINAL AFTER FT. VL.
BK.VL.(1)
BK.VL. FT.VL.
BK.VL. BK.VL.

[6] [6'] [6] [6']
INITIAL BEFORE SEC. FT. VL.
INITIAL BEFORE BK.VL.

[3] [3] [3] [3]
FINAL AFTER
FT. VL.

[[g]] [[g]] [[g]]
FINAL AFTER BK.VL.
FINAL AFTER BK.VL.
FINAL AFTER BK.VL.

(1) HENCEFORTH INITIAL ≠ FOOT INITIAL
FINAL ≠ FOOT FINAL
1.2 The diachronic developments that affect the segments concerned

This section considers the synchronic analysis of the velar and palatal sub-system of the dialect represented by Cp. which can be suggested on the basis of a consideration of the diachronic developments (mostly in the prehistoric OE period) which are assumed to affect the segments concerned.

As in the discussion of the phonemic status of the vowels in §2.2.1, the present enquiry will generally accept the account given by Campbell (1959: Chs. VII and IX) without question. Campbell implies (1959: §398) that the following velar and palatal segments have phonemic status in PG: /j/, /X/ and /j/. As noted in §2.1, the velar segments /j/ and /X/ are subject to the processes of 'lenition/strengthening' and 'palatalisation' as they pass into OE. It follows from §398.4 (op.cit) that PG [j] is very rarely attested in non-initial position and this raises problems for the analysis of the phonemic status of the segments that appear in environments (6), (11) and (15) in (2.2.46) which illustrates the reflexes of PG /j/, /X/ and /j/ that can be supposed to occur in various environments in the dialect represented by the Cp. MS (see §2.1.14 - 15).
<table>
<thead>
<tr>
<th>Environment</th>
<th>PG Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot initial</td>
<td>[χ] [∅] [j]</td>
</tr>
<tr>
<td>1 Before bk. vls.</td>
<td>[χ] [∅] [j]</td>
</tr>
<tr>
<td>2 Before sec. ft. vls.</td>
<td>[χ] [∅] [j]</td>
</tr>
<tr>
<td>3 Before ft. vls.</td>
<td>[χ] [j] [j]</td>
</tr>
<tr>
<td>4 Before consonants</td>
<td>[χ] [∅] -</td>
</tr>
</tbody>
</table>

Foot final (and before voiceless consonants)

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<tbody>
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<td></td>
</tr>
<tr>
<td>5 After front vowels which are</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a 'original' (ft. in Pre-OE)</td>
<td>[∅]</td>
<td>[j] [j]</td>
</tr>
<tr>
<td>b produced by i-mutation</td>
<td>[∅]</td>
<td>[j] [j]</td>
</tr>
<tr>
<td>c produced by smoothing</td>
<td>[∅]</td>
<td>[∅] [j]</td>
</tr>
</tbody>
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<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>6 After back vowels</td>
<td>[χ]</td>
<td>[χ] - 2</td>
</tr>
<tr>
<td>7 After ft. vls. +nasals</td>
<td>-</td>
<td>[j] -</td>
</tr>
<tr>
<td>8 After bk. vls. +nasals</td>
<td>-</td>
<td>[g] -</td>
</tr>
</tbody>
</table>

Foot medial (between sonorants)

Before front vowels

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<tr>
<td>9 After front vowels which are</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a 'original'</td>
<td>-</td>
<td>[j] [j]</td>
</tr>
<tr>
<td>b produced by i-mutation</td>
<td>-</td>
<td>[j] [j]</td>
</tr>
<tr>
<td>c produced by smoothing</td>
<td>-</td>
<td>[∅'] -</td>
</tr>
</tbody>
</table>

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<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a orig. ft. vls. + nasal ft. vls.</td>
<td>-</td>
<td>[j] -</td>
</tr>
<tr>
<td>b 'mutated' ft. vls. + nasal ft. vls.</td>
<td>-</td>
<td>[j] -</td>
</tr>
<tr>
<td>11 bk. vls. ft. vls.</td>
<td>-</td>
<td>[∅] [j] 3</td>
</tr>
<tr>
<td>12 bk. vls. + nasal ft. vls.</td>
<td>-</td>
<td>[g] -</td>
</tr>
</tbody>
</table>

Before back vowels

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<td></td>
</tr>
<tr>
<td>13 After ft. vls. which are</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a 'original'</td>
<td>-</td>
<td>[∅'] [j]</td>
</tr>
<tr>
<td>b produced by i-mutation</td>
<td>-</td>
<td>[j] [j]</td>
</tr>
<tr>
<td>c produced by smoothing</td>
<td>-</td>
<td>[∅']</td>
</tr>
</tbody>
</table>

(2.2.46)
(2.2.46) contd.

<table>
<thead>
<tr>
<th>Environment</th>
<th>PG Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[X]</td>
</tr>
<tr>
<td>14</td>
<td></td>
</tr>
<tr>
<td>a 'orig.' ft.vl.+nasal</td>
<td></td>
</tr>
<tr>
<td>_bk.vl. +</td>
<td></td>
</tr>
<tr>
<td>b mutated ft.vl.+nasal</td>
<td></td>
</tr>
<tr>
<td>_bk.vl.</td>
<td></td>
</tr>
<tr>
<td>15 bk.vl._bk.vl.</td>
<td></td>
</tr>
<tr>
<td>16 bk.vl.+nasal_bk.vl.</td>
<td></td>
</tr>
<tr>
<td>17 ft.vl._consonant+vl.</td>
<td></td>
</tr>
</tbody>
</table>
1. It may well be the case that the reflex of PG [j] is not attested in this position in OE. In this instance this does not present any great problems for the proposed analysis.

2. The possible absence of the reflex of [j] in this context does prove problematical.

3. Similarly, the question of whether PG [j] remains consonantal in these environments will have consequences for the proposed analysis.

4. As the origin of the stressed vowel has some effect on the nature of the adjacent consonant, the diachronic developments that underlie these synchronic environments will be given separate consideration.

On the basis of evidence of this type, the following analysis of the sub-system in question can be suggested.

1.2.1 Initial position: environments (1) - (5)

Environments (1) and (2)

In initial position before a back vowel or secondary front vowel a three-way contrast between /Χ/, /ζ/ and /j/ can be assumed as all three PG phonemes apparently developed into distinct segments in the Cp. dialect.

In environment (3) however, the reflexes of PG /ζ/ developed to [ζ'] and apparently merged with the reflexes of PG /j/. Thus the contrast between /j/ and /ζ/ is neutralised in this context.

Environment (4): As PG /j/ is not attested in initial position before a consonant (to posit a [j]-initial cluster as a syllable onset would violate the correlation between the relative sonority of segments and their position in syllable structure, see
§2.2.5.3.1 and (2.2.88)), it can be assumed that in this environment too the velar/palatal contrast has been neutralised. Thus the archiphoneme //J// can be posited as outlined in 1.1.1 above.

The contrasts that operate in initial position can therefore be represented as in (2.2.47).

(2.2.47)
1.2.2 Final position

Environment (5): In the 'diachronic' environments (5a) and (5b), the reflexes of PG /ɣ/ developed to [ɣ] and then [j]. It can be assumed that they would merge with the reflexes of PG /j/, if any were attested in this position. Irrespective of whether this is the case, it can be assumed that synchronically the phoneme /j/ appears in this context in the Cp. dialect. In environment (5c) PG /ɣ/ apparently devoiced to [χ]. §2.1.14.2.3 establishes on the evidence of certain 'back' spellings that the devoicing process had been completed by the period at which Cp. was written, despite the occasional appearance of the graph g in the forms concerned. This [χ] presumably developed to the palatalised segment [ç] when the first element of the diphthong increased its carrying power (§2.1.2.1.2.1 and references therein; §2.1.15.2.3). Thus synchronically a contrast between [ç] (from PG /ɣ/ and /ŋ/) and [j] (from PG /ɣ/ and possibly /j/) operates in this context. As, once more, voiced and voiceless segments are in opposition, it can be supposed that synchronically the essential contrast is between /χ/ and the archiphoneme /j/, as shown in (2.2.48).
Environment (6): After a back vowel PG /χ/ remained voiceless and velar in OE. PG /ɔ/ apparently devoiced to [ɔ] and merged with the reflex of PG /χ/, see §2.1.15.2.1 for examples of the type of spellings that confirm that this development has taken place. Assuming that PG /j/ does not have a vocalic reflex in this context (this, according to Prokosch, 1939: §32b would appear to be unlikely), it can be suggested that the contrast between /χ/ and /j/ is neutralised in this position. Thus the hyperphoneme /ɔ/ is attested, in this case realised by a voiceless allohyperphone [[ɔ]].

Environments (7) and (8): As neither PG /χ/ or /j/ is attested after a nasal, the contrast between /χ/ and /j/ has evidently once more been suspended. It is reasonable, therefore, to suppose that the hyperphoneme /ɔ/ is attested, realised by palatal and velar allohyperphones in environments (7) and (8).
respectively.

(2.2.49) represents the phonemic status of the various velar and palatal segments that appear in the Cp. dialect in both initial and final position.
1.2.3 Medial position: environments (9) - (17)

It is generally assumed that PG /χ/ has disappeared in medial position by the OE period. §2.1.14.3 established that this is likely to be the case in the dialect represented by Cp., even although h spellings are occasionally attested.

Environment (9): in most cases, i.e. in the more frequently attested 'historical' environments (9a) and (9b), the reflexes of PG /χ/ have developed to [j], having presumably merged with the reflexes of PG /j/ (if these are attested in this context). In (9c) PG /χ/ remains a basically velar segment. It can, however, be assumed that it palatalises when the first element of the preceding Pre-OE diphthong becomes more salient (§2.1.2.1.2.1).

Thus the segments [j] and [ɔ'] contrast in this context, and as the opposition is basically between palatal and velar segments (the voiced/voiceless opposition having been neutralised), it can be assumed that these segments represent the phoneme /j/ and the archiphoneme //ɔ// respectively. In this case //ɔ// is realised by a palatalised alloarchiphone: [[ɔ]].

In environment (10) it is, of course, impossible that any front vowel could originate from a Pre-OE diphthong (see ft. 48), and thus [j] is the only segment that appears in this position. The most reasonable analysis would therefore be to suggest that the palatal allohyperphone [[[j]]] of ////ɔ// is represented.
Environment (11): In this environment PG /\delta/ remains a voiced velar fricative in OE and only if consonantal reflexes of PG /j/ are attested can any kind of phonological contrast be seen to occur. There would appear to be no evidence that this should be the case (Campbell, 1959: §389.4), so it can tentatively be assumed, in the absence of evidence to the contrary, that [\delta] is the only segment that appears in this context, which therefore has the status of an allohyperphone [[[\delta]]] of the hyperphoneme ///\delta///.

In environment (12) it can be assumed (see ft. 50) that PG [j] did not occur after a nasal in the same syllable, and thus there is no contrast between the reflexes of PG /\delta/ and /j/. Again the hyperphoneme ///\delta/// can be posited, in this case realised by the velar stop allohyperphone [[[g]]].

In environment (13) PG /\delta/ usually (i.e. in the 'diachronic' environments 13a and 13c) develops to a segment that is basically velar. It is reasonable to assume that this segment would develop palatalised variants under the influence of the preceding front vowel (§2.1.15.3.1). If, however, the front vowel has been produced by i-mutation, PG [\theta] became [\theta'] and merged with the reflexes of PG, or W-G, [j] (which on the evidence of forms like hegas appears to be consonantal, at least in some instances, in this environment). The basic contrast in this context is therefore between velar and palatal segments, the
voiced/voiceless opposition having been suspended, and this situation can be represented in (2.2.50).

(2.2.50)

\[ \begin{array}{c}
\text{H} \varepsilon & \quad \varepsilon
\end{array} \]

\[ \text{[\[\delta\]]} \]

A similar contrast can be assumed in environment (14), although in this case it is fairly certain that no reflexes of PG [j] are attested (see ft. 50). The alloarchiphone of //\varepsilon// that occurs in this case is a stop rather than a fricative: [\[g\]].

In environment (15) PG /\varepsilon/ remained a velar fricative, which can be assumed to contrast only with reflexes of PG and W-G [j] if any are attested in this environment. As the available sources of evidence (Campbell, 1959: §398.4; Prokosch, 1939: §32) cite no examples containing a consonantal reflex of PG or W-G [j] between back vowels, it can tentatively be suggested that no contrast between [j] and [\O] is attested in this context. Thus the allohyperphone [[[\O]]] is the only segment that appears in this position.

This can be maintained with a greater degree of certainty in environment (16), as PG [j] would presumably not occur after a nasal in syllable-final
position (see ft. 50). In this case the hyperphoneme is presumably realised as a stop [[[g]]].

Environment (17): It must also be noted that before a consonant in medial position, PG /s/ will always develop to [j], even if a back vowel occurs in the following unstressed syllable. Thus the allohyperphone [[[j]]] can be posited in this position.

The analysis of the velar and palatal subsystem of the Cp. dialect that can be suggested on the basis of assumed diachronic developments in the prehistoric OE period can therefore be represented in (2.2.51).
The corresponding sub-section of the PE consonant system does not conflict with the suggested analysis. Apparently, three phonemes, /j/, /h/ and /g/ are attested (Gimson, 1980: §8.01), albeit with different phonetic realisations from those suggested for the OE segments, the contrasts between which are neutralised in many environments (ibid: §8.19; §8.28).

1.3 The final analysis

It remains, therefore, to compare and contrast the analyses represented in (2.2.45) and (2.2.51) to arrive at a satisfactory final analysis of the consonantal sub-system under consideration.

The following discrepancies can be noted:

(i) In environment (5) (2.2.45) suggests a contrast operates between /\X/, /j/ and /\S/ which does not appear to be valid historically.

(ii) In environment (6) (2.2.45) suggests that a voiced/voiceless contrast is attested, which again historical evidence would seem to refute.

(iii) In environment (11) the spellings if interpreted literally suggest a contrast between [\X] and //\J//, whereas in (2.2.51) only the hyperphoneme //\S///, realised by [[[\D]]], appears.

(iv) Similarly, in environment (15) occasional h spellings suggest a voiced/voiceless distinction which does not appear to be valid on consideration of the diachronic evidence.
(i) and (ii)

The appearance of the g spellings which motivate the contrast between /X/, /ð/ and /j/ in environment (5) and //J// and /X/ in environment (6), see (2.2.45), can, as suggested in §2.1.14.2.3, be explained as orthographic 'archaisms'. No ambiguity arises in the use of both h and g in this context as the reflexes of PG /X/ and /ð/ do not contrast. Thus the analysis in (2.2.51) would appear to be more valid.

(iii) and (iv)

A similar explanation can account for the appearance of h in environments (11) and (15), on the basis of which a contrast between /X/ and //J// is suggested in (2.2.45). That such rare h spellings as found in muha and taha are in all probability best accounted for as 'orthographic fossils' has been suggested in §2.1.14.3, and again the analysis reached on the basis of a consideration of the diachronic developments that can be assumed to have affected the segments concerned would seem to be the more valid. The use of the single graph g to represent two phonemes, /j/ and /ð/, is acceptable as it can be seen that the relevant contrast materialises in a very limited number of environments: i.e. in initial position (environments (1) and (2)), between front vowels (9), between a front vowel and a back vowel (13) and after a front vowel and a nasal before a back vowel (14). This is largely due to the fact that PG and W-G [j] rarely has a consonantal reflex in non-initial
position. When [j] develops from PG [ɔ], it usually appears in complementary distribution with [ɔ] or [g], unless both segments synchronically occur after front vowels produced by diachronically divergent developments (i.e. those that result from i-mutation or smoothing).

There is therefore little risk of ambiguity in the use of g for both the velar and palatal segment. It was presumably considered uneconomical to introduce a separate graph to represent such a rarely attested contrast, the occasional use of e and i as diacritics generally sufficing to capture the opposition in those cases where it did take place.

Thus, although there appears to be a discrepancy in the synchronic analyses of the velar and palatal subsystems of the dialect represented by the Cp. MS based on
1 The distribution of the graphs in that MS and
2 The diachronic developments that can be assumed to affect the segments concerned,
these can be reconciled with reference to the fact that spellings need not always be given a totally literal interpretation. Two graphs can interchange when the contrast between the phonemes they regularly represent has been suspended, and in a text such as Cp. which dates from the early OE period spellings reflecting the pre-literary stages of the language are to be expected.

Thus, despite the fact that certain spellings in
Cp. would seem to indicate otherwise, it can be assumed that (2.2.51) is the more accurate representation of the synchronic analysis of the velar/palatal subsystem of the Cp. dialect.

2 The voiceless 'velar' stop

The Cp. dialect also contains the segments [k], [k'] and [tʃ] which contrast with the segments discussed in §2.2.2.1 in every environment. The relationships between these three segments, however, as implied in §2.1.17, are also fairly complex and this section attempts to formulate an account of the phonemic relationships that can be assumed to operate between them.

All the segments concerned are represented by the 52 graph ç in OE , and any account of this sub-section of the consonant system must therefore be based entirely on the evidence of assumed diachronic developments: again mostly in the prehistoric OE period. As discussed in §2.1.17, the segments [k], [k'] and [tʃ] appear in OE as reflexes of the PG phoneme /k/, which undergoes the processes of palatalisation and assibilation in its development into historic OE. §2.1.17 establishes that it is impossible to ascertain whether the assibilation process had been completed by the period at which the Cp. MS is assumed to have been composed. (2.2.52a) therefore lists the reflexes of PG /k/ which can be supposed to occur in various environments before
assibilation, (2.2.52b) those that can be predicted after assibilation has taken place.
(2.2.52)

<table>
<thead>
<tr>
<th>Environment</th>
<th>(a) Before Assibilation</th>
<th>(b) After Assibilation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Foot initial</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Before a consonant</td>
<td>[k]</td>
<td>[k]</td>
</tr>
<tr>
<td>2a Before original</td>
<td>[k']</td>
<td>[tʃ]</td>
</tr>
<tr>
<td>[æ(:)], [e(:)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b Before [æ(:)], [e(:)]</td>
<td>[k]</td>
<td>[k]</td>
</tr>
<tr>
<td>produced by I.U.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Before [y(:)]</td>
<td>[k]</td>
<td>[k]</td>
</tr>
<tr>
<td>4 Before back vls.</td>
<td>[k]</td>
<td>[k]</td>
</tr>
<tr>
<td>5 Before [i(:)]</td>
<td>[k']</td>
<td>[tʃ]</td>
</tr>
<tr>
<td><strong>Foot final (and before voiceless consonants)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6a After original [æ(:)]</td>
<td>[k']</td>
<td>[k']</td>
</tr>
<tr>
<td>[e(:)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b After [æ(:)], [e(:)]</td>
<td>[k']</td>
<td>[tʃ]</td>
</tr>
<tr>
<td>produced by I.U.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c After [æ(:)], [e(:)]</td>
<td>[k']</td>
<td>[k']</td>
</tr>
<tr>
<td>produced by smoothing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7a After original [i(:)]</td>
<td>[k']</td>
<td>[tʃ]</td>
</tr>
<tr>
<td>b After [i(:)]</td>
<td>[k']</td>
<td>[k']</td>
</tr>
<tr>
<td>produced by smoothing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 After back vowels</td>
<td>[k]</td>
<td>[k]</td>
</tr>
<tr>
<td>9 After [y(:)]</td>
<td>[k']</td>
<td>[tʃ]</td>
</tr>
<tr>
<td><strong>Foot medial (between sonorants)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Before front vowels</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10a After original [æ(:)]</td>
<td>[k']</td>
<td>[k']</td>
</tr>
<tr>
<td>[e(:)]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b After [æ(:)], [e(:)]</td>
<td>[k']</td>
<td>[tʃ]</td>
</tr>
<tr>
<td>produced by I.U.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c After [æ(:)], [e(:)]</td>
<td>[k']</td>
<td>[k']</td>
</tr>
<tr>
<td>produced by smoothing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11a After original [i(:)]</td>
<td>[k']</td>
<td>[tʃ]</td>
</tr>
<tr>
<td>b After [i(:)]</td>
<td>[k']</td>
<td>[k']</td>
</tr>
<tr>
<td>produced by smoothing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 After back vls.</td>
<td>[k]</td>
<td>[k]</td>
</tr>
</tbody>
</table>
Examples

cualmstou (2.1.189)
cerfelle (2.2.53)
cellendre (2.2.53)

cyta (2.1.144)
calc (2.1.144)
cilda (2.1.145)

urac (2.1.149)

berc (2.1.129) 3

ec , werc 3

lic , reagufinc (2.1.147) 3

cicen

calc, storc (2.1.199)

3

bace 3

lace

ieces (2.1.121)

gerlice (2.1.133), uuice (2.1.159) 3

cicen

fyrcruce (2.1.144)
(2.2.52) contd.

<table>
<thead>
<tr>
<th>Environment</th>
<th>(a) Before Assibilation</th>
<th>(b) After Assibilation</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 After (y(:))</td>
<td>([k'])</td>
<td>([t'])</td>
</tr>
</tbody>
</table>

Before back vowels

14a After original \(\bar{a}(::), \bar{e}(::)\)

| 14a After original \(\bar{a}(::), \bar{e}(::)\) | \([k']\) | \([k']\) |
| b After \(\bar{a}(::), \bar{e}(::)\) produced by I.U. | \([k']\) | \([t']\) |
| c After \(\bar{a}(::), \bar{e}(::)\) produced by smoothing | \([k']\) | \([k']\) |

15a After original \(\bar{i}(::)\)

| 15a After original \(\bar{i}(::)\) | \([k']\) | \([k']\) |
| b After \(\bar{i}(::)\) produced by smoothing | \([k']\) | \([k']\) |

16 After back vls. | \([k]\) | \([k]\) |

17 After \(y(\cdot)\) | \([k']\) | \([t']\) |
Examples

3 brecan

heahlecas (2.1.151)

3 blæcan

3 wicu
As the origin of the stressed vowel has some effect on the nature of the adjacent consonants, the diachronic developments that underlie these synchronic environments will be considered.

The phonemic status (or even the precise phonetic realisation) of the vowels is not of crucial importance at this stage in the enquiry. [ ] are therefore used throughout, and the spellings are given a more traditional (i.e. literal) interpretation than is suggested in §2.1.1 - 13 and §2.2.1 above.

Once more, for the sake of comprehensiveness, occasional forms not attested in the section of Cp. under consideration are cited. These are generally selected from Campbell (1959: §§426 - 443).

This assumed distribution has the following implications for the phonemic status of the segments concerned.

2.1 Initial position: environments (1) - (5)

No contrast between [k] and either [k'] or [tʃ] can be suggested in environments (1), (3), (4) and (5) as the appearance of [k] in (1), (3) and (4), [k'] or [tʃ] in (5) can always be predicted from the nature of the following vowel.

Where the secondary front vowel has merged with the reflex of a PG front vowel however, as is the case with the vowels developed from PG [o(:)] and [a] in i-umlaut environments (§2.1.2.1.3;3;5; §2.2.2.2.2.5), the velar/palatal contrast, whether between [k] and [k'] or [k] and [tʃ] is definitely attested.

The best illustration of this in the data selected from Cp. is to be found in pairs such as that in (2.2.53).
(2.2.53)

coleandrum: cellendre 'coriander' 569
cerefolium: cerfelle 'chervil' 456

as in forms such as cetil the evidence of the context for i-mutation remains and the phonemic status of the stressed vowel is questionable (§2.2.1.1.2.5 and the references therein).

Thus the contrasts between (a) [k] and [k'] or (b) [k] and [tʃ] (depending on whether or not assimilation had taken place in the Cp. dialect) are suspended in initial position in certain contexts and the situation can be represented in (2.2.54a) and (2.2.54b) respectively. The archiphoneme //K// represents the fact that the oppositions between (a) /k/ and /k'/ or (b) /k/ and /tʃ/ have been suspended.

Presumably a velar allo-archiphone, [[[k]]], occurs in environments (1), (3) and (4), and its palatalised counterpart, [[[tʃ]]] or [[[k']]], is attested in environment (5).
2.2 Final position: environments (6) – (9)

In final position, if it is assumed that assibilation has not taken place in the Cp. dialect, the segments \([k]\) and \([k']\) apparently occur in complementary
distribution. The realisation rules of the archiphoneme \( /K/ \) can be amended as in (2.2.55).

\[
\begin{align*}
\text{\( [K'] \)} & \quad \text{INITIAL BEFORE [e(:)], [e(:)]} \\
\text{\( [K'] \)} & \quad \text{INITIAL BEFORE [e(:)], [e(:)]} \\
\text{\( [K'] \)} & \quad \text{FINAL AFTER \( sk.lk. \)} \\
\text{\( [K'] \)} & \quad \text{FINAL AFTER \( [e(:)], [e(:)], [e(:)], [y(:)] \).}
\end{align*}
\]

If, however, it is assumed that assimilation has taken place (along the lines of that described in §2.1.17.2.2) a contrast arises between \([k]\) and \([k']\) on the one hand and \([\mathfrak{t}]\) on the other. In environment (6) \([k']\) appears after 'original' \([e(:)]\), \([\mathfrak{m}(:)]\) and the reflexes of the Pre-OE diphthongs. The segment represented is therefore
a palatalised allophone of a basically velar phoneme. After [ɛː] and [eː] formed by i-mutation the segment [tʃ] is, however, attested.

In environment (7) after original or 'theoretically' mutated [iː] (Campbell, 1959: §429 ft.1), [tʃ] appears, but [k'], an essentially velar segment, is attested after [iː] produced by smoothing. No contrast arises after back vowels and [yː] (the latter can only appear as the result of i-mutation, see §2.1.7), [k] and [tʃ] being the only segments that occur in environments (8) and (9) respectively.

The situation can therefore be represented as in (2.2.56).
2.3 Medial position: environments (10) - (17)

If the distribution of segments as outlined in (2.2.52a) is accepted (i.e. it is assumed that assimilation has not taken place) again the segments \([k']\) and \([k]\) remain in complementary distribution and the realisation rules of the archiphoneme //\(K//\) can be amended as shown in (2.2.57).
After assibilation however, it must be assumed that [tʃ] and [k]/[k'] contrast in various environments. Due to the fact that [æ(:)], [e(:)] and [i(:)] are not always formed from the corresponding PG phonemes but can evolve from either Pre-OE diphthongs or low and/or back vowels that subsequently undergo developments such as smoothing and i-mutation respectively, contrasts arise in environments (10), (11) and (14).

In environment (15), however, [k'] is presumably
the only segment that appears (Campbell, 1959: §429), and thus a new alloarchiphone, [[k']] must be suggested.

(2.2.58), therefore, illustrates the phonemic status of the segments concerned.
In the case of the various phonetic segments that develop from the PG voiceless velar stop, therefore, it would appear that a contrast between two phonemes,
either /k/ and /k'/ or /k/ and /tʃ/ is attested. The precise nature of the contrast depends on which synchronic stage of OE is assumed to be represented in the Cp. MS, a fact which is, of course, ultimately impossible to recover. In either case the contrast between the two phonemes has apparently been neutralised (more so before assimilation has taken place) and this, in part, explains why a single graph (c) can be used to represent two phonemically distinct segments. Any ambiguity as to the nature of the segment represented will arise in only a limited number of cases. As noted in §2.1.17, however, the main reason for the fact that one graph can represent two phonemes is that no convention has been adopted to represent the recent phonological development that has brought this contrast about.

Thus the tendency of spelling systems to be 'conservative' accounts for the absence of a one-to-one correspondence between graph and phoneme in this case.

It must be noted that PE evidence supports the analysis given in (2.2.58), both in the fact that the affricate [tʃ] is attested in the relevant environments, and in the existence of palatalised allophones of the phoneme /k/ (see §2.1.17.2.3).

2.4 Geminates

It remains to discuss the phonological status of the reflexes of the PG and W-G geminate consonants [kk],
\([\delta \delta]\) and \([\chi \chi]\). These ultimately developed into the sequences \([kk], [kk']\) and \([tʃ tʃ]\); \([gg], [g\bar{g}]\) and \([dʒ dʒ]\); \([ζ ζ]\) and \([lXlX]\).

As established in §2.1.16, the sequences \(cg\) and \(gg\) occur in graphic free variation for both \([gg]\) and \([dʒ dʒ]\), any alternation between them being of no phonological significance. It must also be noted that the reflexes of PG velar and palatal geminates are not frequently attested in the data selected from Cp., which may, in part, be the result of the fact that the body of evidence consulted is fairly limited. For these reasons, therefore, it can be assumed that any analysis of the phonemic status of the segments concerned based on a consideration of the distribution of the graphs in the Cp. MS alone will be somewhat misleading. The present account will therefore concentrate on the analysis that can be produced on consideration of the various diachronic developments that affected PG and W-G \([κκ], [θθ]\) and \([lXlX]\) in the prehistoric OE period.

The Pre-OE geminates \(/kk/, /gg/\) and \(/lXlX/\) are affected by the tendency to palatalise and subsequently assibilate in the prehistoric OE period. In view of the uncertainty over whether the assibilation process had been completed by the period at which the Cp. MS was composed, the contrasts arising in both pre- and post-assibilation periods will be considered and are represented in (2.2.59) (a) and (b) respectively, in which the reflexes that can be assumed to appear for the
Pre-OE geminate sequences in various 'synchronous' and 'diachronic' environments are considered.
Before Assibilation

Environment

Before front vowels

1 After [æ(ː)] or [e(ː)] which is
   a original [ɡɡ] [ɡɡ'] [kk']
   b produced by i-mutation [ɡɡ] [ɡɡ'] [kk']
   c produced by smoothing [ɡɡ] [ɡɡ'] [kk']

2 After [i(ː)] which is
   a original [ɡɡ] [ɡɡ'] [kk']
   b produced by smoothing [ɡɡ] [ɡɡ'] [kk']

3 After [y(ː)]
   [ɡɡ] [ɡɡ'] [kk']

4 After back vowels
   [XX] [ɡɡ] [kk]

Before back vowels

5 After [e(ː)] or [e(ː)] which is
   a original [ɡɡ] [ɡɡ'] [kk']
   b produced by i-mutation [ɡɡ] [ɡɡ'] [kk']
   c produced by smoothing [ɡɡ] [ɡɡ'] [kk']

6 After [i(ː)] which is
   a original [ɡɡ] [ɡɡ'] [kk']
   b produced by smoothing [ɡɡ] [ɡɡ'] [kk']

7 After [y(ː)]
   [ɡɡ] [ɡɡ'] [kk']

8 After back vowels
   [XX] [ɡɡ] [kk]

* cappa: scicging 'cloak, cape' 378
(b) After Assibilation

PG

\[(\chi\chi)\ [\emptyset\emptyset]\ [kk]\]

Examples

\[
\begin{align*}
\{\text{reccoe}\} & (2.1.116) \\
\{\text{scicging}^*\} \\
\{\text{streccan}\} \\
\{\text{licgan}\} \\
\{\text{stycce}\}
\end{align*}
\]
Geminate consonants are never attested in initial position.

In final position it is assumed that geminate [gg], [ΧΧ] and [kk] are simplified to the corresponding simplex segments (§2.1.16).

Once more, many of the examples cited are taken from Campbell (1959: §§426 - 443), the relevant data being in limited supply in the Cp. MS itself. Note that even Campbell fails to cite data for many of the relevant contexts.

2.4.1 Medial position

If it is assumed that assimilation has not yet taken place, see (2.2.52a), a three-way contrast between /kk/, /ΧΧ/ and /gg/ can be attested, any palatalised segments having a purely allophonic status. The inclusion of such segments in (2.2.52) is based entirely on an assumption that palatalised segments would be phonetically natural in the environments concerned. It must be noted that the section of Cp. consulted does not provide an example of a form with [ΧΧ] or [gg]. This sub-system can be represented as in (2.2.60)
and conforms almost exactly with the contrasts suggested by the spelling evidence: the sequences cc, hh appear in parallel distribution, /gg/ being represented by the graphic variants gg and cg. If, however, it is assumed that assimilation has taken place, it must be concluded that a contrast has arisen between /gg/ and /dʒdʒ/ on the one hand and /kk/ and /tʃtʃ/ on the other in environments (1), (2) and (5). Once more this is due to the fact that the front vowels [i(:)], [e(:)] and [æ(:)] can arise synchronically as the result of a number of different developments (§2.1.2; §2.1.3; §2.1.4).

(2.2.61) represents the relevant contrasts and neutralisations.
As geminate consonants are not attested in PE (§2.1.17.4 and references therein) these contrasts are motivated entirely by a consideration of diachronic evidence, and the fact that they are consistently represented in the spelling.

Thus the geminate phonemes /gg/, /kk/, /dʒdʒ/, /tʃ tʃ/ and /ʃʃ/ are attested in the dialects of OE in which assimilation has taken place, represented by the sequences cg and gg; cc; cg and gg, and cc respectively. /ʃʃ/ is represented uniformly by hh.

The use of the same sequence (or sequences: cg, gg) to represent phonemically distinct segments can, as in the case of c, be in part explained with reference to the fact that the contrast between the relevant phonemes: /kk/ and /tʃ tʃ/; /gg/ and /dʒdʒ/ does not materialise in every environment.

The fact that the spelling system is slow to adopt conventions to capture recent phonological developments is presumably the fundamental reason behind the absence of a one-to-one correspondence between graph and phoneme in this area of the consonant system.

2.4.2

It remains to discuss the contrasts that can be assumed to operate in final position.

As established in §2.1.16, it seems that Pre-OE geminate sequences simplified in final position and merged with the corresponding simplex. It can be seen from (2.2.62) that, despite the occasional double graph
spelling, there is in the vast majority of cases no contrast between the reflexes of PG, or W-G, geminate and simplex consonants in this context in historical OE.
Environment | PG | PG | PG | PG | PG
--- | --- | --- | --- | --- | ---

1 After [æ(:)] or [e(:)]
which is
a original | [ç] | [ç] | [g'] | [j] | [k'] | [k']
b produced by i-mutation | [ç] | [ç] | [d₃] | [j] | [tʃ] | [tʃ]
c produced by smoothing | [ç] | [ç] | [g'] | [ç] | [k'] | [k']

2 After [i(:)] which is
a original | [ç] | [ç] | [d₃] | [j] | [tʃ] | [tʃ]
b produced by smoothing | [ç] | [ç] | [g'] | [ç] | [k'] | [k']

3 After back vowels | [ç] | [ç] | [g] | [ç] | [k] | [k]

4 After [y(:)] | [ç] | [ç] | [d₃] | [j] | [tʃ] | [tʃ]

Examples

1
secg, ecg (2.1.143)
elh (2.1.126)
frihtrung (2.1.58)
scoh (2.1.125)

* culix (-ex): **mygg**  'midge'  617
Once more, the relevant lexical items are cited, where possible, from Cp., but failing this forms mentioned by Campbell (1959: §§426-433) will be listed.

It is assumed that assibilation has taken place, as only in this instance do the appropriate contrasts arise.

The only exception is in the case of the reflexes of PG [ CATEGORY] and [ CATEGORY] in these positions, (1), (2) and (4), where the reflex of the geminate has been assibilated to [ CATEGORY] and presumably develops to [ CATEGORY] in final position. The reflex of the simple consonant, on the other hand, has merged with the reflexes of either PG [ CATEGORY] or [ CATEGORY], resulting in synchronic [ CATEGORY] or [ CATEGORY]. In this case, therefore, although the Pre-OE ancestors of the segments concerned are geminate and simplex respectively, as far as the synchronic system of OE is concerned the essential contrast is presumably between the affricate and approximant (or fricative), rather than consonants similar in every respect but length. There is therefore no basis for the suggestion that geminate and simplex consonants contrast in final position in OE.

It remains to explain why the graphic sequences [ CATEGORY] and [ CATEGORY] should regularly appear in contrast word-finally, whereas the [ CATEGORY]/[ CATEGORY] contrast is only sporadic. This can be explained with reference to the fact that the spelling system is slow to reflect diachronic developments. Like [ CATEGORY], the affricate [ CATEGORY] has presumably developed relatively recently in the OE phonological system, its
only source being the Pre-OE geminate consonant [gg]. While, therefore, the synchronic contrast is between affricate and approximant or fricative, the spelling system does not reflect this situation immediately, and this accounts for the frequency of the ʌ~gʌ alternation. This may incidentally explain why the symbol cg became more widely used for the segment in OE texts dating from later periods (Campbell, 1959: §64). With the voiceless counterpart, on the other hand, the reflex of the PG geminate and simplex are identical, thus c rather than cc is regularly attested in final position.

After back vowels, and front vowels that result from smoothing, a contrast will presumably arise between [ç] and [g'] (after smoothed vowels) [χ] and [g] (after back vowels) once the geminate [gg] has become reduced.

The analysis of the velar/palatal sub-system given in (2.2.51) must therefore be amended to the more comprehensive version in (2.2.63), in which the contrasts [ç] ≠ [g'] ≠ [j] and [χ] ≠ [g] in final position after back and front vowels respectively can be represented.
Clearly, this would result in ambiguity if the graph $g$ was to continue to appear for the reflex of PG $[\mathbf{x}]$ and $[\mathbf{u}]$ in final position ($\S 2.1.15.2$), and this presumably explains why the symbol $h$ came to be regularly adopted for the voiceless fricative (Campbell, 1959: $\S 446$).

While some confusion may arise in a text such as Cp. where $g$ still appears for the segments $[\mathbf{x}]$ and $[\mathbf{u}]$, this must be considered inevitable in texts composed at a period contemporary with or immediately following radical changes in the phonological system of a language and need not cause undue concern.

In the velar and palatal sub-system, therefore, the analysis based on consideration of the diachronic developments of the appropriate segments, particularly in the prehistoric OE period, see (2.2.61) and (2.2.62), can be seen to be the most satisfactory, and any apparent discrepancies between this and the account of their phonemic status suggested by the distribution of various graphs and digraphs in the MS can be explained with reference to

(i) the fact that many contrasts are neutralised and thus graphs may become equivalent

(ii) the fact that Cp. is a text which is archaic by nature and presumably contains spellings reflecting the language at an earlier stage in its development

(iii) the fact that the spelling system is slow to adopt conventions to represent phonemes that have developed in
3 The labial obstruent sub-system

The discussion of the segments represented by the graphs \( f \) and \( b \) in §2.1.18 and §2.1.19 established that there is some controversy over the phonemic status of the reflexes of PG [f] and [β] in the Cp. dialect.

As in §2.2.2.1 and §2.2.2.2 above, the account of the relationships that operate between the various phonetic segments in this particular sub-section of the OE consonant system will be based on

1 That suggested by the distribution of the graphs that appear in the MS. Once more, the spelling evidence will be given the most literal interpretation possible. It will be assumed that the graphs \( b \) and \( f \) are used consistently to represent phonetically distinct segments, such as [b]/[v] and [f] respectively, except where there is strong evidence to the contrary.

2 This analysis will then be compared with that which can be deduced from a consideration of the various phonetic developments that affect the segments concerned, particularly in the prehistoric OE period. The differences between the two accounts can then be reconciled in an attempt to reach a satisfactory final analysis (3.3).
3.1 The distribution of the graphs in the Cp. MS (2.2.64) considers the distribution of the graphs \( f, b \) and \( bb \) in various synchronic environments in Cp., once more, for the most part, those in which certain historical developments can be assumed to have taken place.
Environment

<table>
<thead>
<tr>
<th>Environment</th>
<th>b</th>
<th>f</th>
<th>bb</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Foot initial</td>
<td>beost (2.1.212)</td>
<td>feotod (2.1.200)</td>
<td>box (2.1.158)</td>
</tr>
<tr>
<td></td>
<td>forlor1</td>
<td>flood (2.1.165)</td>
<td>blæc1</td>
</tr>
<tr>
<td>2 Foot final (and before voiceless consonants)</td>
<td>tyrb (2.1.158)</td>
<td>seolfbonan (2.1.21)</td>
<td>stæfliðore (2.1.167)</td>
</tr>
<tr>
<td></td>
<td>cneoribt (2.1.159)</td>
<td>wagryft (2.1.166)</td>
<td>ceselyb (2.1.213)</td>
</tr>
<tr>
<td></td>
<td>rib (2.1.163)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Medial position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Before front vowels</td>
<td>ober- (2.1.160)</td>
<td>frafele (2.1.123)</td>
<td>megsibbe1 ribbe1</td>
</tr>
<tr>
<td>or after long vowels</td>
<td>stælende (2.1.123)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ceber2 (2.1.160)</td>
<td>cefer6 (2.1.145)</td>
<td></td>
</tr>
<tr>
<td>b Before back vowels</td>
<td>eobur- (2.1.161)</td>
<td>eofor- (2.1.177)</td>
<td></td>
</tr>
<tr>
<td>and after short vowels</td>
<td>frête2 (2.1.161)</td>
<td>throte2 (2.1.177)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>geabuli (2.1.161)</td>
<td>stofa1 (2.1.161)</td>
<td></td>
</tr>
<tr>
<td>4 After nasals</td>
<td>wulfes camb ymbsuæpe (2.1.157)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.1.3 Environment (3a)

While the opposition between the graphs \( b \) and \( f \) in \textit{obersegl} and \textit{fræfele} may lead us to suggest that the voiced/voiceless contrast operates in this environment, the existence of 'free variation' between these graphs in forms such as \textit{ceber} and \textit{cefer} means that it is impossible to maintain that such an opposition should exist. Again, it can be suggested that the archiphoneme \( //V// \) is represented in this environment, realised in this instance by the voiced alloarchiphone \([v]\).

Environment (3b)

While on the evidence of spellings such as \textit{geabuli} and \textit{stofa} it may at first be tempting to suggest a contrast between voiced and voiceless segments in this context, the existence of free variation in forms such as \textit{eobur}- and \textit{eofor}-indicates that such an opposition is unlikely. As noted in §2.1.18.4.2, the appearance of
digraph spellings for Pre-OE monophthongs suggests that the segments that occur in this environment are velarised, and therefore the alloarchiphone [[\w]] can be posited.

Environment (4)

In this context only the graph b is attested and it can therefore be deduced that the contrast between /f/ and /b/ has been neutralised, in this case the archiphoneme /\V// being realised by the alloarchiphone [[b]].

Thus, the analysis of this sub-section of the consonant system based on the evidence of the distribution of the graphs f and b in the Cp. MS can be represented as in (2.2.66). The neutralisations in medial and final position are suggested mainly on the evidence of free variation between the graphs concerned in certain lexical items.
3.2 The evidence of assumed diachronic developments

This section considers the analysis of the labial sub-system that is suggested by a consideration of the various diachronic developments that can be assumed to affect the segments concerned, particularly in the prehistoric OE period.

Campbell (1959: §398) implies that two phonemic labial obstruents are attested in PG: the voiced phoneme /β/ and the voiceless /f/. The segments can be seen to undergo various processes of lenition and strengthening, as discussed in detail in §2.1.18 and §2.1.19.

(2.2.67) shows the reflexes of PG /β/ and /f/ that can be assumed to appear in the relevant synchronic environments in the Cp. dialect. The evidence that the mergers in medial and final position had been completed
by the time at which the Cp. MS was composed is given in §2.1.18.3.2; §2.1.19.2.2;3.2;3.3.

(2.2.67)

<table>
<thead>
<tr>
<th>Environment</th>
<th>PG $\beta$</th>
<th>PG $\phi$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Foot initial</td>
<td>[b]</td>
<td>[f]</td>
</tr>
<tr>
<td>2 Foot final (before voiceless consonants)</td>
<td>[f]</td>
<td>[f]</td>
</tr>
<tr>
<td>3 Foot medial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a After long vowels or before</td>
<td>[v]</td>
<td>[v]</td>
</tr>
<tr>
<td>front vowels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b Before back vowels and</td>
<td>[w]</td>
<td>[w]</td>
</tr>
<tr>
<td>after short vowels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 After nasals</td>
<td>[b]</td>
<td>[b]</td>
</tr>
</tbody>
</table>

On the basis of this information realisation rules can be formulated as in (2.2.68), the neutralisation between $/f/$ and $/b/$ being in most cases conveniently confirmed by free variation in the spellings of certain lexical items (Campbell, 1959: §§444; 446). The evidence of PE also confirms that the segments $[f]$ and $[b]$ have phonemic status in the history of the language (Gimson, 1980: §8.07).

A major difference between the labial sub-system of the Cp. dialect and that of PE is that in PE the voiced labio-dental $[v]$ can also be seen to have phonemic status. However, it is generally agreed that this was not the case until after the OE period (Kurath, 1956).
3.3 The final analysis

If it is accepted that any interchange between /f/ and /b/ in the same lexical item is to be interpreted as indicating that the contrast between /f/ and /b/ has been suspended, it can be seen that the analyses of this subsection of the consonant system of Cp. based on each of the sources of evidence considered in §2.2.3.1 and 3.2 support and confirm each other. There are no
discrepancies between the systems represented in (2.2.66) and (2.2.68) respectively.

It remains, therefore, to account for the opposition between \( f \) and \( b \) in medial and final position which may be at first be interpreted as an indication that the voiced/voiceless contrast should be attested in environments (2) and (3). As mentioned in §2.1.18.3;4, this can be accounted for if it is accepted that in the absence of an opposition between the segments normally represented by \( f \) and \( b \) in these contexts the graphs have become equivalent and there is no ambiguity in determining which particular segment is represented in each position.

3.4

Both the spelling evidence (cf. megsibbe and ribbe
v. fræfele, ober- ) and a consideration of the diachronic developments that can be assumed to affect the system suggest that the geminate/simplex contrast \(/bb/ \neq //V//\) operates in word-medial environment. The PE evidence does not confirm this supposition as phonemic geminate consonants are not attested at this stage in the history of the language. As the loss of geminate consonant phonemes can be attributed to processes that occur subsequent to the OE period, this presents no great threat to the proposed analysis.

Furthermore, the evidence of assumed diachronic developments suggests that \(/ff/\) contrasts with \(///V//\) in medial position. As it is generally assumed that
original geminates are simplified in final position (or so the frequent graphic simplification would suggest, §2.1.18.5) the /bb/, /ff/, /VV/ contrast is presumably only attested in medial environments. It must, however, be noted that such a simplification would result in a word-final contrast between /f/ and /b/. As noted in §2.1.18.3; §2.1.19.2, therefore, f became the more regular spelling for [[f]] in OE MSS so that any ambiguity in the interpretation of the graph b might be avoided. The appearance of b spellings in forms such as tyrb and hualb are therefore best explained as orthographic archaisms.

Presumably /ff/ when simplified in final position would merge with the reflex of the PG simplex consonant i.e. [[f]], and thus the final analysis of this subsection of the consonant system can be represented as in (2.2.69).
4 The dental obstruent system

4.1

An account of the dental obstruent sub-section of the consonant system of the Cp. dialect based purely on a consideration of the distribution of the relevant graphs in the MS itself suggests that a four-way contrast operates in all positions, see (2.2.70).
<table>
<thead>
<tr>
<th>Environment</th>
<th>d</th>
<th>th</th>
<th>p</th>
<th>ød</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Foot initial</td>
<td>deor-tuun</td>
<td>thegh</td>
<td>pegn</td>
<td>(2.1.177)</td>
</tr>
<tr>
<td></td>
<td>dorsas</td>
<td>thoæ</td>
<td>poden</td>
<td>(2.1.117) (2.1.181)</td>
</tr>
<tr>
<td></td>
<td>wyrt-drenc</td>
<td>eofor-throte</td>
<td>(2.1.238) (2.1.177)</td>
<td></td>
</tr>
<tr>
<td>2 Foot final and before voiceless consonants</td>
<td>eord-reste</td>
<td>suearth</td>
<td>flyhticlað</td>
<td>(2.1.174)</td>
</tr>
</tbody>
</table>
| 3 Foot medial | fæder | æthm | hyrþil | leðer-
| | foedils | heden | wyrhta |  (2.1.145) (2.1.180) (2.1.182) |
| a Before a front vowel or after a long vowel | sadul-boga | neðo-
| | | gelað-ade |  (2.1.9) (2.1.13) |
The following forms are not glossed in §2.1

adsæclum:  

begn 'thegn, servant' 77

auriculum:  
dorsas 'earwax' 239

alcanus:  
poden 'whirlwind' 139

aporiamur:  
biad þreade 'to be rebuked' 180

cater:  
suearth 'rind, skin, hind' 406

avus:  
ældra fæder 'grandfather' 241

altilia:  
foedils 'fatling' 134

casla (casia):  
heden 'hood' 409

adhibuit:  
gelaðade 'to invite, call' 90

4.2

As discussed in §2.1.20 - §2.1.23 a consideration of the diachronic developments that affect the segments concerned and also the existence of free variation in certain lexical items, for example bodan and bythne, eastansudan and sudanwestan (2.1.184), would seem to indicate that this is in all probability not the case.

§2.1.20.2 suggests that the proliferation of graphs representing the dental obstruents in Cp. can be attributed to factors affecting the development of the OE orthographic system. The scribes are presumably experimenting with means of recording segments for which the roman alphabet did not readily provide a suitable symbol.

An account of the phonemic status of the dental obstruents in the Cp. dialect must therefore be based primarily on a consideration of the historical
developments that affect the segments concerned, in particular in the prehistoric OE period. Campbell (1959: §398) suggests that the segments [ɔ] and [θ] have phonemic status in PG. §2.1.20.2 described how these segments underwent lenition and, more regularly, strengthening in various contexts as they developed into W-G and Pre-OE.

The results of these processes are shown in (2.2.71).

(2.2.71)

<table>
<thead>
<tr>
<th>Environment</th>
<th>PG ɔ</th>
<th>PG θ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Foot initial</td>
<td>[d]</td>
<td>[θ]</td>
</tr>
<tr>
<td>2 Foot final (before voiceless consonants)</td>
<td>[d]</td>
<td>[θ]</td>
</tr>
<tr>
<td>3 Foot medial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Before front vowels</td>
<td>[d]</td>
<td>[θ]</td>
</tr>
<tr>
<td>or after long vowels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b Before back vowels</td>
<td>[d+]</td>
<td>[θ]</td>
</tr>
<tr>
<td>and after short vowels</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It can be seen from (2.2.71) that the voiced/voiceless contrast operates in all environments: the phonemes /d/ and /θ/ appear in all contexts with no significant neutralisations to be observed between them. They can be said to have the following allophonic variants: [ɔ] - due to the operation of lenition in
medial position, and [ɔ] and [ɔ] - which can be supposed on the evidence of preceding digraph spellings, see §2.1.20.2.3.

The realisation rules of /d/ and /θ/ can therefore be formulated as in (2.2.72).

(2.2.72)

The evidence of PE dialects, in that /θ/ and /d/ have phonemic status (Gimson, 1980: §8.01), supports this analysis. The phonemicisation of /ɔ/, as with that
of /v/, can be attributed to developments that occurred at a later stage in the history of the language (see 3.2 above and the references therein).

4.3

An analysis of the dental obstruent sub-system of the Cp. dialect must therefore be based entirely on a consideration of the diachronic developments that affect the segments concerned. While the data consulted from Cp. gives no indication of a contrast between /dd/ and /d/ or /θθ/ and /θ/ in medial position, a consideration of developments that affect PG /d/ and /θ/ (see again Campbell, 1959: §407) suggests that such contrasts can be posited for OE.

The absence of forms demonstrating these oppositions can be attributed to the fact that a relatively limited body of evidence has been consulted.

§2.2.2.1:2:3 and 4 therefore have concentrated on the velar/palatal, labial and dental sub-systems of the consonant system of Cp. They show that striking discrepancies are to be observed between the analyses that can be assumed from

1 the distribution of the relevant graphs in the MS itself and

2 the diachronic developments that have affected the linguistic continuum to which Cp. belongs.

§2.2.2.5 reveals that such discrepancies are not generally attested with segments belonging to the rest
of the OE consonant system. These contrast with each other in the vast majority of environments. The main points of interest to be discussed in relation to the consonantal phonemes that remain to be considered are (i) the nature of any allophonic variants attested (ii) the nature of any neutralisations that may be assumed to occur. Such neutralisations are an inevitable consequence of the phonotactic constraints that operate in the language.

This section will therefore be sub-divided as follows:

5.1 will establish the phonemic inventory of the consonant system of the dialect represented by Cp. in full, once more on the evidence of
1 the distribution of the graphs in the MS itself
2 the diachronic developments that presumably affect the system, particularly in the prehistoric OE period.
5.2 will give separate consideration to each of the suggested phonemes in order to ascertain whether any allophonic variants may be posited.
5.3 will consider how the phonotactic constraints that operate in the language can be shown to result in various neutralisations of the contrasts established in 5.1.

5.1

Sections 1 - 4 suggest that the consonantal phonemes in (2.2.73) are to be considered part of the inventory of the Cp. dialect.
(2.2.73)

/f/ /b/
/d/ /t/
/k/ /tʃ/
/χ/ /x/ /j/ /dʒ/

and the geminates
/ff /bb /dd /θθ /kk /tʃ tʃ /χχ /gg and /dʒdʒ/

It can be assumed that these phonemes (or at least any archiphonemes and hyperphonemes that represent the suspensions of contrast attested between them) contrast with other phonemes in the consonant system in all environments. This section will therefore concentrate on establishing the phonemic status of the rest of the consonantal segments that occur in Cp.

5.1.1 The distribution of the graphs in the MS

This section attempts to analyse the consonant system of Cp. that is suggested by a consideration of the distribution of the various segments represented by the graphs that appear in the MS.

(2.2.74) illustrates the various contrasts that can be attested in certain environments.
<table>
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<tr>
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<td>deortuun (2.1.171)</td>
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<td>onscungend 1</td>
<td>fyrpone (2.1.225)</td>
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<td>stregl (2.1.212)</td>
<td>eorscripel (2.1.111)</td>
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<td>segn (2.1.138)</td>
<td>scellum (2.1.194)</td>
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<td>sarwo (2.1.198)</td>
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<td>2 Foot final</td>
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<td>a Before ft. vls. or after long vowels</td>
<td>huie (2.1.213)</td>
<td>ceselyvb (2.1.225)</td>
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|              |           | cetil (2.1.203) | risel (2.1.60) | lene-
|              |           | water- (2.1.49) |  | uince |
|              |           |  |  | cipe |
|              | b Before bk. vls. and after short vowels | sectu (2.1.205) | briosa (2.1.225) |  |
|              |           | sected (2.1.205) |  | mapul-
<p>|              |           |  |  | dur |
|              |           |  |  | (2.1.186) |
| 4 Gemination | nytuum (2.1.209) | cressa (2.1.215) | stoppa (2.1.226) |  |
|              |           | gleau- (2.1.216) | cleppett- |
|              |           | bisse (2.1.216) | ende |
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</table>
The following forms have not been glossed in §2.1.

aporians: anscungendi 'to regard with loathing' 177

.crabro: wæfs 'wasp' 604

competentes gelindice dæle 'fittingly' 548

portiunculas:

contio: gemoot 'meeting' 584

broel: edisc 'pasture' 324

acitelum: hromsan crop 'sprout, berry' 57

calcesta: huite clafre 'white clover' 378

cucuzata: lepeuince 'lapwing' 619

asilo(-us): briosa 'breese, gadfly' 225

c(a)e)pa: cipe 'onion' 448

aquemale: lebel 'basin' 193

alga: waar 'seaweed' 120

chaumos: suol 'heat, burning' 458

accearium: steli 'steel' 55

If it is accepted that this segment remains consonantal in OE (§2.1.6.5 and references therein).

On the basis of this information it can be assumed that the following contrasts operate in Cp.

Environment (1)

In initial position a contrast occurs between /t/, /s/, /ʃ/, /p/, /w/, /r/, /l/, /m/, /n/.

Environment (2)

In medial position the phonemes /t/, /s/, /p/, /w/, /r/, /l/, /m/, /n/ and the geminates /tt/, /rr/, /ll/,
The following forms have not been glossed in §2.1.

aporians: anscungendi 'to regard with loathing' 177

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 Environment (1)

 In initial position a contrast occurs between /t/, /s/, /ʃ/, /p/, /w/, /r/, /l/, /m/, /n/.

 Environment (2)

 In medial position the phonemes /t/, /s/, /p/, /w/, /r/, /l/, /m/, /n/ and the geminates /tt/, /rr/, /ll/,
and /ss/ presumably contrast with each other.

Environment (3)

In final position an opposition between /t/, /s/, /ʃ/, /p/, /m/, /n/, /r/, /l/ and /w/ would appear to be attested.

Contrasts between /p/, /t/, /s/, /w/, /r/, /l/, /m/, /n/ would therefore seem to be well motivated in the Cp. dialect. The distribution of /ʃ/ and /w/ is however slightly limited, as is that of the geminates /tt/, /rr/, /ll/ and /nn/ which are only attested in medial position (Hogg, 1982).

The fact that not every simplex consonant would appear to have a geminate counterpart may at first seem to provide problems for the proposed analysis. It is, however, fairly reasonable to assume that this could well be attributed to the fact that the data base consulted is relatively limited.

5.2.2 The evidence of assumed diachronic developments

This section considers the diachronic developments that can be assumed to affect the segments concerned in an attempt to arrive at a synchronic inventory of the consonant system of the dialect represented by the Cp. MS.

From Campbell (1959: §396), disregarding the phonemes that have been discussed in 1-4 above, the following segments can be assumed to have phonemic status in PG: /p/ /t/ /w/ /s/ /z/ /n/ /l/ /r/, and in
§398.1 (op.cit) Campbell states that the following could appear as double consonants in medial position: 'p, t, k, m, n, l, r, s.'

As the result of a development described by Campbell (1959: §404) it appears that the phoneme /z/ is lost from the inventory, and the process of West-Germanic Gemination (ibid: §407) presumably results in the appearance of the following additional geminate phonemes in Pre-OE: /ff/, /bb/, /x/x/, /dd/, /øø/, /gg/. Due to the process of vocalisation described by Campbell (1959: §120) it would seem that the sequence [ww] is no longer attested. Developments that can be placed in the late prehistoric - early historic OE period which affect the phonological status of the segments in the consonant system of Cp. are those described by Campbell (1959: §272), on the basis of which it can be assumed that /w/ is rarely attested in final position, and that discussed in §440 (op. cit) which accounts for the appearance of /ʃ/ as a distinct phoneme in the language, see §2.1.6.5; §2.1.28.

The fact that the processes of palatalisation and assibilation only occur in a limited number of environments means that the distribution of /ʃ/ is somewhat limited: i.e. the phoneme is only attested in initial position, medially before front vowels (and after those vowels that have undergone mutation) and finally after all front vowels. While it is not certain whether the assibilation process had been completed by
the period at which Cp. was written (§2.1.28), and it may therefore be claimed that sc represents the sequence /sk'/ rather than a distinct phoneme in the dialect concerned, the present account will assume that the phoneme /ʃ/ can in fact be posited synchronically in Cp.

(2.2.75) therefore depicting the inventory of the consonant system (minus the archi- and hyper-phonemes established in 1-4 above) of the dialect represented by Cp. which can be suggested from a consideration of the diachronic developments that affect the language, mostly in the prehistoric period.

(2.2.75)


The evidence of PE generally supports this analysis. With the exception of the geminate consonant phonemes (the loss of which is assumed to have occurred after the OE period) all of the segments in (2.2.75) have phonemic status in PE dialects (Gimson, 1980: §8.01).
5.1.3 The final analysis

There would therefore seem to be very little difference between the accounts of the consonant system of Cp. suggested on the basis of the evidence considered in 5.1.1 and 5.1.2 respectively. The absence of the geminates /pp/ and /mm/ in 5.1.1 is best explained with reference to the fact that a limited range of data has been consulted, and in fact a similar explanation can be given for the fact that according to (2.2.74) /ʃ/ is not attested in word-medial position. (2.2.75) therefore represents the final inventory of the consonantal phonemes of the dialect represented by Cp., allowing that, particularly in the velar/palatal and labial subsystems, suspensions of contrast are numerous.

These phonemes are generally represented by the graphs and digraphs in (2.2.76).

(2.2.76)

\[ h & c f b d th \ y \ p p sc s l r m n u uu u \]
\[ hh gg cc cg ff bb dd pp bb pp tt ss ll rr mm nn \]
and \( x \) represents the sequence /ks/.

The reason for the discrepancies between the number of graphs that appear and the number of phonemes in the inventory have been explained at length in §2.1.
5.2 Allophonic variation

It is not generally expected that allophonic variation should be reflected in the orthography (§1.3.2.1.2). As discussed in §2.1.18.4.2, however, the existence of digraph spellings for Pre-OE monophthongs can be cited as evidence that many of the consonant phonemes in (2.2.75) will have velarised realisations in certain contexts. This is assumed in the consideration of the variants that can be suggested for the individual phonemes in this section.

The only other evidence on the basis of which further allophonic variants might be suggested is a consideration of what would seem to be 'phonetically natural' phenomena, in particular with reference to PE data (§1.3.6.1.1). It must be accepted that the phonemes considered in §2.2.2.1 - 5.1 above were in all probability realised by a large number of different phonetic segments. To list all the possible variants would be far too cumbersome a venture at this juncture. Apart from a few exceptions, therefore, the present account will only acknowledge allophonic variants of consonant phonemes when this is necessary to explain certain spellings that appear.

5.2.1 /t/

The existence of digraph spellings for Pre-OE monophthongs, together with a consideration of what can be assumed to be phonetically natural developments,
suggests that /t/ has a velarised allophone between a short vowel and a following back vowel, as discussed in §2.1.26.2. The realisation rules for this phoneme can therefore be formulated as in (2.2.77).

\[ \text{(2.2.77)} \]

\[ /t/ \rightarrow [\text{艂}] /\text{SHT.VL} \rightarrow \text{BK.VL.} \]

\[ [t] \]

The corresponding geminate phoneme, /tt/, is presumably attested in medial position with no significant allophonic variation.

5.2.2 /s/

A consideration of diachronic developments that affect the segment concerned (Campbell, 1959: §444, and §2.1.27) suggests that this phoneme has a voiced allophone, [z], in medial position. The appearance of digraph spellings for original short front monophthongs suggests that this [z] is velarised before back vowels.

The realisation rules for /s/ can therefore be represented as in (2.2.78).
5.2.3 /ʃ/

That this phoneme may not in fact occur in the Cp. dialect and has a relatively limited distribution has been noted in 5.1 and §2.1.28 above. As /ʃ/ would not normally appear in medial position before a back vowel velarised variants are very rarely attested. The only possible environment would be after a short umlauted vowel, as, for example, in a form like blyscan 'to blush' (Campbell, 1959: §440). It must be acknowledged, however, that this suggestion is extremely speculative. As /ʃ/ develops from a Pre-OE cluster (§2.1.28) there is no corresponding geminate phoneme.

5.2.4 /p/

The only significant allophonic variant that can be suggested for the phoneme /p/ is the velarised segment [ɸ] which presumably occurs before back vowels. The
relevant realisation rules can be formulated as in (2.2.79).

\[
\begin{array}{c}
/p/ \\
[p] /sht. vl. \quad \text{BK VL.} \\
[p]
\end{array}
\]

The corresponding geminate does not appear to show any significant allophonic variation.

5.2.5 /w/

The fact that this phoneme has a somewhat limited distribution, and does not have a corresponding geminate has been discussed in 5.1 above.

§2.1.6.5 established that the proliferation of spellings that appear for this segment, \(u\), \(uu\) and \(w\), can in all probability be regarded purely as the result of orthographic variation. However, certain regularities in the distribution of these spellings suggest that a more vocalic variant, \([\underline{y}]\), may be attested in certain environments.

As this suggestion is supported by a consideration of 'phonetic naturalness' (§2.1.6.5) the following
realisation rules (although somewhat speculative) may be formulated.

(2.2.80)

Clearly /w/ is in some sense a 'velar' phoneme, and it therefore cannot be suggested that it should have a velarised allophone before a back vowel.

5.2.6 /m/

As with all other non-velar consonants in the Cp. dialect, it appears that /m/ has a velarised allophone [ʍ] before back vowels. It can also be suggested on the basis of spelling alternations in OE, diachronic developments that affect unstressed vowels in PG (§2.1.24.3) and, of course, the evidence of PE dialects, that syllabic [m] should occur in foot-final position
after an obstruent. The realisation rules for /m/ can therefore be formulated as in (2.2.81).

(2.2.81)

\[
\begin{align*}
/m/ & \quad [m] / \text{obstruent} + \\
& \quad [m'] / \text{sh. VL, BK, VL} \\
& \quad [m] / \text{BL, VL, BK} \\
\end{align*}
\]

There is no evidence for allophonic variation of the corresponding geminate /mm/.

5.2.7 /n/

As with the other non-velar consonants, it can be assumed that /n/ has a velarised allophone, [\(\text{\textregistered}\)], before an unstressed back vowel. For the same reason as that cited with reference to /m/ above, it can be suggested that /n/ had a syllabic allophone, [\(\eta\)], after obstruents in foot-final position.

\(\text{§2.1.33.5}\) also suggested that /n/ is realised by the velar segment, [\(\eta\)], rather than the 'velarised' alveolar nasal, [\(\text{\textregistered}\)], when it appears before [\(k\)] and [\(g\)], and the possibility of a palatalised reflex [\(\eta\)] before...
/j/ and /ts/ was also suggested. The existence of a voiceless allophone, at least in initial clusters after [X] was also posited in §2.1.33.4.

The realisation rules of /n/ may therefore be depicted as in (2.2.82).

(2.2.82)

Note again that the difference in the phonemic status of the segment [η] in OE and PE respectively can be attributed to developments subsequent to the OE period (§2.1.33.5).
5.2.8 /r/

It can be assumed that /r/, like any other non-velar phoneme in the Cp. dialect, has velarised allophones before a back vowel. However, as depicted in §2.1.25.2, digraph spellings for Pre-OE [æ], [e] and [i] appear before r in a greater range of environments than is the case with other consonants. This suggests that the allophone [ↁ] has a wider distribution than, for example, [d] or [m] .

It can therefore be suggested that [ↁ] also appears after /eo/, /i/, /ɔ/, /u/ and /o/ (i.e. any non-umlauted short vowel phoneme) before a non-velar consonant .

It must be noted that theoretically the apparent phonemic contrast suggested by the forms sundgerd and eordreste, i.e. between the phonetic sequences [er] and [eoŋ] respectively, could be attributed to the consonants rather than the vowels, thus resulting in phonemic /r/ and /ↁ/. However, given that the corresponding contrast (/eː/ ≠ /eːo/) operates in the long vowel system and that no other language closely related to OE has phonemic 'front' and 'back' consonants, this suggestion can be dismissed as highly unlikely.

The motivation for the existence of syllabic and voiceless variants of /r/ has been discussed in §2.1.25.3;4, and thus the realisation rules of the phoneme /r/ can be represented as in (2.2.83).
The corresponding geminate shows no significant allophonic variation, although it may be supposed that [Fr] might occur after vowels that have not suffered i-mutation, such as /eo/, /o/, /a/ and /u/. The realisation rules for /rr/ may therefore be formulated as in (2.2.84).
It must be noted that /rr/ is comparatively rarely attested in Cp. and OE in general, its only source being in PG (Campbell, 1959:§407).

5.2.9 /l/

Similarly, /l/ can be supposed to have a velarised reflex [r̥] before back vowels as is the case with all non-velar consonants in the Cp. dialect. As with /r/, however, it would also seem that on the evidence of the appearance of digraph spellings for the reflex of PG [a] before 1 followed by a non-velar consonant graph, [r̥] can be posited in the environments shown in (2.2.85).

(2.2.85)

/q/, /o/, /u/ __ ft.c

If the most obvious interpretation is given to the striking absence of digraph spellings for Pre-OE [i] and
[e] before \( l \) and a graph representing another consonant (§2.1.24.2.3), it cannot be maintained that \( [\mathbf{f}] \) should appear after /e/ (spelt e and eo) or /i/ in this environment. There is, therefore, no alternative but to accept the apparent discrepancy in the respective realisation rules of the two 'liquid' phonemes, although such a situation is undesirable. It is, of course, possible that the explanation lies in a consideration of the precise phonetic nature of OE /r/ (§2.1.25.2.2).

As with /r/ and /n/ above, the existence of voiceless and syllabic allophones of /l/ is well motivated, and the realisation rules of the lateral phoneme can therefore be depicted as in (2.2.86).
/ll/ can originate from both PG /ll/ and /l/ as the latter can undergo West-Germanic Gemination. As is the case with /rr/ it is possible to suggest that [t]\textsuperscript{\textdagger} should occur after /u/, /o/ and /a/, thus the realisation rules of /ll/ can be formulated as in (2.2.87).
5.3 The effects of the phonotactic constraints that operate in the Cp. dialect: 'minor neutralisations'

The more frequently attested neutralisations between the consonant phonemes of the Cp. dialect have been discussed in §2.2.2.1 - 4 above. However, the phonotactic constraints that determine the formation of acceptable consonant clusters in the language also result in the neutralisation of various contrasts, and consequently on the result of the operation of these constraints certain phonemes fail to appear in certain environments. As the distinctions between the phonemes listed in (2.2.75) are well attested in the vast majority of contexts, suspensions of contrast such as those discussed in this section are only very infrequently reflected in the spellings, usually in the occasional confusion of certain graphs 77.

A great number of these 'minor' neutralisations, therefore, are the result of phonotactic constraints that operate in OE and, presumably, in the Cp. dialect.
To give a detailed list of every single neutralisation attested would prove to be extremely cumbersome and is unnecessary for the purposes of the present account. Essentially, reference need only be made to the neutralisations in question to explain sporadic anomalies in the use of certain graphs. However, as will be seen below, in many cases these neutralisations seem to follow a certain pattern. The reasons behind this phenomenon will be investigated in 5.3.1.

5.3.1

Historically, the 'minor' neutralisations that operate between the various consonant phonemes in Cp. can be attributed to

(i) phonotactic constraints inherited from PG, or
(ii) constraints that develop in the prehistoric (or even early literary) OE period, see Campbell (1959: Ch. IX in particular sections A, D, F, G, H and I).

This section will consider the nature of the constraints that seem to be inherited from PG.

As will be noted in §2.3.1, the basic factor that determines the shape of permissible syllable-final and -initial clusters in OE is the relative sonority of the segments concerned: the more sonorous the segment, the closer it will appear to the syllable nucleus.

As this principle apparently underlies the structure of syllables in many other languages (both historical and contemporary) it can be claimed that this
correlation is in all probability universally attested, and this would surely confirm the suggestion that many of the phonotactic constraints observed in OE are inherited directly from PG (if not I-E) as these are phonetically natural. If it is accepted that a syllable is a 'bidirectional projection of the sonority hierarchy' (Anderson, 1986: 67) it will be seen that syllable-final and-initial clusters must not violate the pattern outlined in (2.2.88). The various consonantal segments of OE must at least be expected to conform to the following basic order when they appear in the syllables of that language.
Following the principles outlined in (2.2.88), it can be seen that initial clusters consisting of a liquid followed by a stop, for example */lp/ , */lk/, can be automatically dismissed as 'illegal', as can final clusters comprising a voiceless stop followed by a voiceless fricative. Thus */tf/, */kX/ are unacceptable. It can be claimed on the evidence of (2.2.88), therefore, that the contrast between any segment more sonorous than, for example, a voiceless fricative (such as a 'liquid' or 'approximant') and any consonant less sonorous than this class of segments (e.g. a voiceless stop) will be neutralised when these precede or follow a segment of this type. On the basis of this generalisation, a vast number of neutralisations can be predicted, both before and after */f/, */θ/ and */χ/, of which those listed in (2.2.89) are only a few representative examples

(2.2.89)

a) Syllable finally */lf/ is acceptable but */tf/ is not, so the contrast between */t/ and */l/ is neutralised in the environment */f/*.

b) */χt/ is permissible, but */χn/ is not, thus the contrast between */t/ and */n/ is suspended in foot-final position after */χ/.

In fact, the range of possible neutralisations that result from the influence of relative sonority on syllable structure can be captured by the generalisation in (2.2.90).
The contrast between two phonemes A and B will be suspended before or after segment C if A is more sonorant than C and B less sonorant, or vice versa.

On the basis of this generalisation it can be predicted that, for example:

(i) The contrast between /f/ and /j/ will be suspended before /l/: e.g. */jl/ but /fl/.

(ii) The contrast between /t/ and /r/ is suspended in both syllable-final and-initial clusters: e.g. final */xr/ but /xt/; initial */xr/ but */xt/ and so on, the various possible permutations being too numerous to mention at this juncture.

While many other factors influence the phonotactic constraints that operate in OE, resulting in a greater number of neutralisations than those implied by (2.2.90), the generalisation at least provides a principle on the basis of which the nature of various 'minor' neutralisations that operate in the Cp. dialect can be predicted.

There is, however, as mentioned above (and see §2.1.27.1.2) one glaring exception to the proposed correlation between the relative sonority of segments and their position in syllable structure. The segment [s], an allophone of /s/, must be analysed as a
voiceless fricative, and as such it is obviously more sonorous than either [p], [t] or [k]. However, it seems that [s] can precede and follow these segments in syllable-initial or-final clusters respectively, as shown in the forms in (2.2.91) (a) and (b).

(2.2.91)

(a) **store** (2.1.199)
    **streamread** (2.1.212)
    **spryng** (2.1.212)

(b) **beost** (2.1.212)
    **æx** (2.1.223)

If, as is generally the case, it is accepted that /s/ must be considered to be tautosyllabic with the neighbouring /t/, /p/ or /k/, the following rule can be formulated to account for this phenomenon:

(2.2.92)

The contrast between /s/ and all other consonant phonemes is neutralised between /p/, /t/, /k/ and a foot boundary

in other words, /s/ is the only consonant that can appear in these environments.

Many of the minor neutralisations that affect the
consonant system of the Cp. dialect can therefore be seen to follow naturally from the correlation between the relative sonority of a segment and its distance from the syllable nucleus. There are, however, a number of other suspensions of contrast to be observed in the Cp. dialect that can be traced back to PG. Frequently, these are determined by 'place of articulation'. When, for example, /n/ or /m/ is followed by a voiced stop, we find that the sequence /nd/ is acceptable, but */md/ is not. Apparently the /n/ ≠ /m/ contrast is neutralised before /d/. Similarly /mb/ is a permissible sequence in OE, but */md/ is not (see the discussion of ambras, §2.1.31.4). It would appear, therefore, that the same contrast is neutralised before /b/.

5.3.2

Certain developments that take place in the prehistoric and early literary OE periods also affect the phonotactic constraints that operate in the Cp. dialect. Campbell (1959: Ch. IX) gives a full account of the developments concerned. The present section will attempt to discuss a few pertinent examples and indicate the nature of some of the 'minor' neutralisations that result.

As cited in §2.1.19.4, the development of [fs] > [ps] in the late historic or early literary OE period results in the (at least temporary) suspension of contrast between /f/ and /p/ before /s/, and the graphs
f and p became interchangeable.

According to Campbell (1959: §480), all consonants become voiceless before /t/, thus the contrast between, for example, /b/ and /p/ or /d/ and /t/ will be neutralised in this environment. Campbell, in §480.3 (op. cit), suggests that the voiced/voiceless opposition is suspended before /s/. The sequences */ds/ and */bs/, for example, are no longer acceptable (see the discussion of gidsung in §2.1.20.3). From §481.1 (op. cit), it can be seen that the contrast between /θ/ and /t/ is suspended after /s/, as is that between /θ/ and, for example, /p/.

Evidently, therefore, in addition to the widespread neutralisations that operate in the consonant system in the dialect represented by the Cyp. MS discussed in §2.2.2.1 - 4, the existence of various 'minor' neutralisations must be posited. Some of these result from general phonotactic constraints inherited from PG, others result from language specific processes, such as those discussed by Campbell (1959: Ch.IX).

Whatever their origin, beyond making general statements such as that attempted in (2.2.90), it would be extremely cumbersome to list every possible contrast that is neutralised in every single context. It can be accepted that the phonemic status of the segments listed in (2.2.75) is attested in the vast majority of environments, and while it is acknowledged in the present account that the contrasts between the various
phonemes may be suspended in several contexts, it suffices at this juncture to give a few examples of these 'minor' neutralisations, together with an account as to how they may have arisen.

A comprehensive account of these neutralisations is not crucial to the present investigation, and the main value of an awareness of their nature is that certain anomalies in the spellings that appear in the Cp. MS may be explained.
The following forms are not glossed in §2.1

amissionem: forlor 'destruction' 144
bitiligo: blkz frustfel 'leprosy' 296
affectui: megsibbe 'kinship' 103
cinoglossa: ribbe 'the herb hound's tongue' 463
balneum: stofa 'room for a warm bath' 281

Free variation between f and b is attested in these lexical items (§2.1.18; §2.1.19).

3.1.1 Environment (1)

In initial position, the graphs b and f appear in contrast regularly, and it can therefore be suggested without hesitation that the voiced/voiceless opposition operates in this environment and that the segments [b] and [f] represent distinct phonemes in the Cp. dialect.

3.1.2 Environment (2)

Despite what may at first appear to be a contrast between voiced and voiceless segments, illustrated by the contrast f ≠ b in, for example, tyrb and seolfbonan, the appearance of both graphs in the same lexical item: cneoribt and wagryft suggests that it is impossible to maintain the existence of such an opposition in this environment. It can be assumed, therefore, that the voiced/voiceless contrast has been suspended. Thus it is necessary to posit the archiphoneme /V/, which is presumably realised in this context by the alloarchiphone [[f]] as shown in (2.2.65).