

Pre-occlusion in Middle and Late Cornish

2.1. The Nature of Pre-occlusion in Cornish

A characteristic feature of Cornish phonology emerged during the sixteenth and seventeenth centuries in which an intrusive homorganic stop developed before nasals following a short vowel in a stressed syllable or monosyllable. An unexploded [d] was prefixed before /nn/ in words such as *pedn* < *pĕn*¹ "head" < Brit. **pĕnnos*, *lodn* < *lōn*² "beast" < CC. **lutno-*, *bedna* < *bĕn(n)eth* "blessing" < L. *benedictio*.³ Likewise [b] occurred before /m/ [mm] (or /mm/, as I discuss below) in *cabm* < *cām*⁴ "bent" < CC. **kāmb-*, *lebmyrn* < *lĕm(m)yn*⁵ "now" (MIB. *noumañ*, *loumañ* MIW. *neu(t) + yma*) and *obma* < *ōm(m)a* "here" (B. *amañ* W. *yma*, MIW. *ym(m)a*, *yman*).⁶ These phonemes were "...articulated with a brief total blockage of the airflow..." or preploded as [d̥n] and [b̥m]. This phenomenon is known as pre-occlusion, but the phonetic motivation for it has not hitherto been adequately explained.⁷

Pre-occlusion does not occur in the other Brythonic languages but is otherwise known in late spoken Manx, where it occurred only in final

¹ *pedn* CW 182 (4 exx.), *pen* 354.

² *lodn* 1471 (3 exx.), *lon* 1569. This example is regular, despite the coincidence of forms between MIC. *lodn* and earlier SWBr. **lodn* (W. *llwdn*) < Brit. **lutno-*. In this group, /d/ was spirantised to /ð/ early in CB (see HPB §695). It was then vocalised in ModB. *loen* < MIB. *lozn*, but remained in MIC. pl. *lothnow* (OM 1175). Apparently, sporadic assimilation /ðn/ > /nn/ gave *lon* /lonn/, then *lodn* /lo^{d̥}n/ by pre-occlusion, pl. LC. *lodnow*, Pryce ACB, sigs. ee3r-ee4r, IV.7. In contrast, the svarabhakti in OC. *hethen* "bird" (Voc. Corn. 497) MIC. *ethyn* (CW 108) suggests the singular **lothen*, unattested.

³ *bedna* 1571; *benneth* BM 31, 53. The example *benneth* (W. *bendith*, ModB. *bennozh*) is also regular, since /nd/ in this word became CB. /nn/, presumably in the SWBr. period (see HPB §449.4).

⁴ *cabm* CW 1603, *cam* 2037. Likewise, *cam* contained [mm] regularly from original /mb/, which was subsequently pre-occluded to *cabm* [ka^{b̥}m]. On the question of /m/ or /mm/, see § 2.2.

⁵ *lebmyrn* 69 (5 exx.), *lemyn* 1083 (31 exx.); *lemmyrn* BM 138. Dissimilation /d/ > /l/ is discussed by Pedersen, CCCG, § 256, p. 152, but he compares the identical *lem(m)yn* "but" with W. *nam(w)yn* (see also D.S. Evans, *A Grammar of Middle Welsh*, § 255, pp 232-3). In contrast to the seemingly regular B. *noumañ*, *loumañ* < CBr. **nou* + **in man*, the two words presumably became confused in Cornish, which would account for the vowel in the final syllable. The quality of the previous vowel is perhaps the result of internal i-affection in Cornish but not in Welsh, a minor detail neglected by Pedersen.

⁶ *obma* CW 2523, *omma* 44 (*passim.*), *oma* 312, 1143. On the closed syllable in this word, see § 2.3.

⁷ R. L. Trask, *A Dictionary of Phonetics and Phonology* [see especially headword "pre-occlusion"].

stressed syllables and was normally confined to monosyllables.⁸ By contrast, pre-occlusion in Cornish also occurred in non-final stressed syllables. The sound change was noted as far back as Lhuyd in 1707.⁹ Henry Jenner recognised it and included it in his revived Cornish;¹⁰ but Nance, considering it a late and corrupt feature, excised all such spellings from his Unified Cornish.¹¹ It has since been described in more precise terms by Kenneth George, although he has so far published only a brief commentary on its diachronic development.¹²

Only Nicholas Williams has offered any detailed developmental analysis to date.¹³ This depends primarily upon a proposed Prosodic Shift, which he dates to before the Middle Cornish period. Half-long vowels in open syllables would have fallen together with short vowels in closed syllables, although whether he believes that long vowels also became relatively shorter is not entirely clear.¹⁴ The suggestion that such a systematic vocalic shift occurred was originally put forward by George, who dated it to around 1600.¹⁵ This disagreement of perhaps three hundred and fifty years is remarkable and the dispute remains unsettled to

⁸ G. Broderick, *A Handbook of Late Spoken Manx*, pp. 162-163.

⁹ Lhuyd, AB 223. His comments are written in macaronic Cornish, with syntax and words adapted from Welsh, e.g. *Legriaz* (W. *llygredd*) "corruption" (noted by N.J.A. Williams, "Pre-occlusion in Cornish", *Studia Celtica* 32 (1998), § 0.0, p. 129). He objected to pre-occlusion on aesthetic grounds.

¹⁰ H. Jenner, *A Handbook of the Cornish Language*, pp 62-63. He stated that pre-occlusion was to be pronounced even where it was not spelt, a tacit assumption that it had been a universal sound change, although he disapproved of pronouncing the further LC. "vulgarisms" /^dn/ > /d/ and /^bm/ > /b/.

¹¹ R.M. Nance, NCED. Despite the comments on *m*, *n* under "Pronunciation" in the introduction [no page], he remarked that "...[pre-occlusion] is not adopted in Unified Cornish.", *Cornish for All*, p. 1. He cited textual exx. in NCED (mostly without explicit line references), e.g. *cabm* CW 1603, but the headwords ignore the change. This was apparently an aesthetic choice made for revivalist purposes.

¹² PHC, § 17.3.2, pp. 411-2; K. George & P. Dunbar, *Cornish for the Twenty-First Century*, pp. 54-63. This latter volume is aimed at a non-academic audience and is unfortunately marred by personal attacks against N.J.A. Williams, but it nonetheless contains some useful phonological commentary.

¹³ N.J.A. Williams, "Pre-occlusion in Cornish", *Studia Celtica* 32 (1998), *Cornish Today*, § 9.1-9.6, pp. 71-75. His postulated dialects based on pre-occlusion are baseless, as George comments, *ibid*.

¹⁴ Williams, "Pre-occlusion in Cornish", § 4.0, p. 152-3. Since he postulates that a system of "morae" on the ratio 1:2:3 for short, half-long and long syllables was reduced to 1:2 when half-long quantity was eliminated, one might also expect long syllables to have been shortened. If not, it logically follows that the ratio would in fact be 1:3 and they would have been relatively ultra-long. In contrast, it is well known that half-long vowels remain unshortened in many dialects of Welsh: the alternation between stems and suffixed forms shows that it is really a reduced variety of long, e.g. *gwŷdd-en* "tree(s)".

date.¹⁶ It is worth pointing out that there is no incontrovertible evidence as yet to show that any such Prosodic Shift ever occurred. The evidence that has been advanced will be discussed further below at § 2.6.

In either case, a Prosodic Shift would be a dramatic revision of the inherited New Quantity System of neo-Brittonic and the potential consequences deserve close attention.¹⁷ George's recent expressed views date pre-occlusion rather earlier, ca 1510-1575, than the proposed prosodic shift, ca. 1600, yet he suggests nonetheless that they two phenomena were linked.¹⁸ In fact, this confusion may not necessarily invalidate his views on the prosodic shift, but it does suggest that his dating of pre-occlusion is much too early.¹⁹ This needs to be examined further (see § 2.7), as does Williams' radical hypothesis that far earlier prosodic changes were responsible for pre-occlusion. For the purposes of the present study, the consequences are especially significant where consonant length in closed syllables might have been affected, since this is the environment in which pre-occlusion occurred in Cornish.

It is my contention that the observed results of pre-occlusion in the sixteenth century would have been impossible if the inherited quantity system had been radically re-shaped centuries before.²⁰ Equally, the question of whether the sound change is itself evidence for a Prosodic Shift should be considered: if so, the nature of the various orthographies that the hypothesis is built upon needs to be discussed further, as direct comparisons may be misleading. Not only does George's date of ca. 1600

¹⁵ PHC, § 10.5.2, pp. 251-2. It is striking that this date coincides precisely with the abandonment of the orthography used in MIC. texts for the English-based orthographies of the bulk of the LC. corpus.

¹⁶ N.J.A. Williams, *Cornish Today*, § 13.9, p. 110-1.

¹⁷ Williams, *ibid.*, § 1.1-2.7, "Pre-occlusion in Cornish", § 1.0-1.5, pp. 129-35.

¹⁸ George originally claimed that pre-occlusion occurred ca. 1575, PHC § 17.3.2, pp. 411-2 but gives ca. 1510-1575 in *Cornish for the Twenty-First Century*, p. 63. As his date of ca. 1600 for the Prosodic Shift is reiterated, *ibid.*, p. 65, this might seem to be a tacit retraction of the theory that pre-occlusion came about because of a reduction of half-long syllables. On the other hand, he indicates clearly, pp. 21-2, that he agrees with Williams that a prosodic shift was the cause of pre-occlusion.

¹⁹ See § 2.7 on dating the MIC. evidence.

²⁰ This belief has also been expressed by George, see for example *Kernewek Kemmyn*, p. 59

for the re-shaping of the prosodic system need further testing, but the question needs to be raised whether any such Prosodic Shift necessarily occurred at all. If no reason exists to link pre-occlusion with a Prosodic Shift, however, the latter can be disregarded for the purposes of this discussion. The history of the Cornish prosodic system from the earliest times deserves to be re-examined.

2.2. Inherited Brittonic /nn/ and /mm/

The length of syllables in neo-Brittonic, unlike in Goidelic, did not reflect the situation that existed before the loss of final syllables.²¹ Instead, whether a vowel was short or long depended on the length of the following consonant. In monosyllables, where the vowel was (1) final in an open syllable, or (2) stood before an etymologically *single* consonant, the vowel became (or in some cases remained) *long* e.g. CC. *kwō* > W. *ci* C. *ky* B. *ki*, CC. **sēnos* > WC. *hēn*. However, where the consonant was *double* (including consonant groups), the vowel became (or remained) *short* e.g. Brit. **pēnnos* > WCB. *pēn(n)*. This was irrespective of the earlier length of the vowel in Late British, which might have been long or short in either case, and does not affect subsequent quantity. It may be added that *all* unstressed syllables became *short*, including proclitics such as the possessive pronoun W. *fy* B. *ma, va* < Brit. **men* and any other syllables in polysyllabic words except the penult.

In the same way, in polysyllables, where the vowel stood before an etymologically *double* consonant in the stressed penultimate syllable (after the accent shift), it also became (or remained) short, e.g. W. *pennau* C. *pennov* B. *pennou*. On the other hand, in polysyllables where a vowel stood before an etymologically *single* syllable in the stressed penultimate

syllable, it became half-long, e.g. WCB. *elin* < Brit. **olīnā*. In reality, half-length is a reduced variety of long, because the tonic accent is not so strong as in a monosyllable, despite being in the stressed penult.²²

All stressed syllables within a word, after the New Quantity System, can therefore be analysed as (C)VV, (C)VVC or (C)VCC, where V (vowel) and C (consonant) are written double to show length. This fact is intimately associated with historical lenition, because single consonants were lenited (except those consonants whose articulation did not allow this, such as the resonants, nasals, sibilants, semi-consonants). This lenition in Brythonic consisted of spirantisation of short voiced consonants and voicing of short unvoiced consonants.²³

Anthony Harvey has shown that consonants which underwent lenition and spirantisation did not retain a phonemic distinction based upon length (since the distinction was now determined by position and quality) but the long resonants /rr/, /ll/ and /nn/ were not affected, as they could not undergo these sound changes.²⁴ Thus /nn/ in *pĕn* is contrasted with /n/ in *hĕn* just as it was in Brittonic; but the vowel in the latter is no longer short, following the new quantity rules.²⁵ Pre-occlusion only affected long /nn/ (and /mm/) in a short stressed syllable, which is itself good grounds to believe that /nn/ in unstressed syllables was became short on at least a realisational level.²⁶ Accordingly, pre-occlusion in

²¹ LHEB § 34, pp. 338-240.

²² HPB § 132, p. 85 (& n. 3). This is a description after the accent shift, which Jackson notes did not occur in V., or at least not fully in all areas, so the penult would in fact have been unstressed at the time that the New Quantity system. He notes the uncertainty about half-length among Breton writers. The subsequent modifications in dialects of W. need not detain us here.

²³ These stages did not all happen together. For a summary of all of the various disputes over lenition and spirantisation, see P. Russell, *An Introduction to the Celtic Languages*, § 7.4, pp. 238-49.

²⁴ A. Harvey, "Aspects of Lenition and Spirantisation", CMCS 8 (Winter 1984), pp.87-100, especially pp. 93-94. There is some new evidence of gemination in neo-Brythonic, but Harvey proposed only that historical phonemic distinctions were lost, see P. Schrijver, "Geminate Spellings in the Old Welsh Glosses to Martianus Capella", *ÉC* 34 (2000), pp. 147-55. The resonants and nasals were already long.

²⁵ *pen* PC 462, *hen* BM 2929. For clarity, marks are added here to show length.

²⁶ George's view that final C. *-en* < Brit. *-ennā* is "intrinsically long" may be questioned, since even if it is phonemically /-enn/ it was probably [-en] when unstressed, *Kernewek Kemmyn*, § 24, p. 154.

Cornish only happened in *pĕn* /nn/ > *pedn* [ᵈn], not in *hĕn* because /n/ evidently did not participate in the sound change.

It is worth comparing Falc'hun's description, cited by Jackson, that the distinction /n/–/nn/ continued to be part of the consonant system, apparently in all positions. Jackson also noted that "... where not immediately after the stress, Pr.B. *nn* may be reduced... [and]... the two tend to become confused as lenis –[n]– ..." Furthermore, "... finally after unstressed vowels the contrast between –*nn* and –*n* is completely neutralised and the two fall together in lenis –[n] ..." ²⁷

This poses the question why pre-occlusion could occur in words containing original /mm/ (C. *vabm* < *mām* "mother" < Brit. **māmmā*) or /mm/ < /mb/ (C. *cabm* < *cām* "bent" < CC. **kāmbo-*), since the distinction between Brittonic /mm/ and /m/ was lost when the latter was spirantised to /μ/.²⁸ Harvey does not argue that long consonants were *phonetically* shortened when the short equivalent was lenited, only that long /mm/ or /dd/ no longer stood in *phonemic* opposition to /m/ and /d/, which were lenited to /μ/ and /ð/. He remarks that "... one might as well use a single as a double letter."²⁹ The evidence of pre-occlusion alone is enough to show that this /m/ < Brit. /mm/ must have retained at least the phonetic value [mm] in Cornish, as Williams argues.³⁰ Jackson noted that the phoneme in B. was "... always a fortis... [which]... always arose from a Brit. geminate. This means that *m* has remained geminate or long intervocally immediately after the stress and tends to be reduced in other situations to a weakened variety, though still... systematically a fortis."³¹

²⁷ HPB § 1126, p. 790, citing F. Falc'hun, *L'Histoire de la langue bretonne d'après la géographie linguistique*, Rennes, 1950-1. Falc'hun ascertained consonant length experimentally. The alleged initial geminates led to a dispute with Greene, *op. cit.*, described by Russell (see note above). Jackson's view tends to conflict with his remarks about *nn* and *n* falling together, but is not relevant to pre-occlusion.

²⁸ *vabm* CW 1203, 1920, *mam* 1341 (3 exx.), *cabm* 1603, *cam* 2037.

²⁹ Harvey, *op. cit.*, p. 91.

³⁰ N.J.A. Williams, *Cornish Today*, § 9.2, p. 72, "Pre-occlusion in Cornish", § 2.4, p. 139-40; George presumably agrees, in the light of his general remarks, *Cornish for the Twenty-First Century*, p. 55.

³¹ HPB § 1116, p. 784.

It may be a matter of opinion whether this /mm/ deserves to be represented as a phoneme or not, since it did not oppose /m/. However, it appears that loanwords such as MIC. *lym* "lime", LC. *reem* "rhyme" and C. *rōme* "room" supplied the missing short [m] and presumably contained the phoneme /m/ after a long vowel.³² This would stand in contrast to [mm], which could then be allowed phonemic status /mm/ once more, as it had in Brittonic. The only minor difficulty is that these loanwords are not at all numerous and the earliest known example dates only from the fifteenth-century *Origo Mundi* (*Ordinalia* I). It is possible that there may have been a hiatus of several centuries after the date of lenition when Cornish possessed no lexical items containing /m/. The asymmetry may instead rely by analogy on the continued existence of the long resonants /nn/, /ll/ and /rr/, particularly in the period before any early loans containing [m] were borrowed from English.

By contrast to original /mm/, Harvey shows that the phoneme /dd/, for example, fell together with voiced /t/ > /d/ in his examples CC. /to:ta:/ "a people" > Brit. /tu:da:/ and CC. /kredd-/ "believe" > Brit. /kred-/.³³ It is important that this could not have happened in the case of /mm/, however, since no corresponding voiceless stop existed. This may go some way to explain how /mm/ alone could have remained phonemically distinct despite the spirantisation of its counterpart /m/ > /μ/ in lenition. It may be noted in passing that the initial mutation of /m/ > /v/ in all three Brythonic languages is unusual not only in failing to correspond to a voiceless series, but the resulting spirant now falls together with the lenition product of /b/ > /v/.³⁴ It may be worth speculating that that this could

³² *lym* OM 2282; *reem* CWBF, p. 31 [NB]; *rome* CW 258. Since the latter is spelt with silent <e>, it is likely to be a re-spelling of a loanword in MIC., but it might equally be a LC. addition to the text.

³³ Harvey, *op. cit.*, p. 96.

³⁴ By contrast, of course, /d/ > /ð/ is lenition and /t/ > /θ/ is the spirant mutation in WCB. Note that lenition of /gw/ > /w/ now contrasts in a few words with the spirant mutation of voiceless /kw/ > /χw/, e.g. W. *cwestiwn* > *ei chwestiwn* "(her) question", B. *kouez* > *e c'houez* "(her) washing", UC. *quylkyn* >

have happened to limit the amount of asymmetry in the system, but the important point here is that /mm/ and /m/ were unusually treated compared to similar pairs of consonants in Brythonic. In short, there is every reason to prefer the label /mm/ for [mm] rather than /m/, especially since the alternative practice would inevitably tend to mislead.³⁵ It seems clear in any case that phonetic [mm] remained after the stress.

2.3. Exceptional Sources of /nn/ and /mm/

There are a few exceptional words showing pre-occlusion which appear not to follow the above rule that the short stressed syllable must contain inherited /nn/ or /mm/ rather than /n/ or /m/. The fact that these words are extremely commonplace might seem to be a serious difficulty, but this fact may well explain why only a few items seem to flout the rule. One of the most significant of these is the numeral *un*, *udn* "one" < CC. **oinos*. This contained a single consonant in Brittonic and was assigned a long vowel in the New Quantity System. It should not have been pre-occluded. Yet the word is found with pre-occlusion in six out of twenty one occurrences in CW and regularly in Late Cornish.³⁶

It was not normally used as an indefinite article in Cornish except for particular emphasis, retaining the semantic meaning "one, a certain".³⁷ Consequently it did not, like the definite article *an* "the" < CC. **sind-*, become an unstressed proclitic. It would hardly be shortened as a result of emphasis, but it was also used in compounds such as *uncorn* "unicorn",

hy whylkyn "(her) frog" (*kūilken* AB 136b). In a few Breton dialects, /m/ > /μ/ did not fall together with /b/ > /β/ as /v/ but became /w/. See HPB § 431 (pp. 314-5), 914 (pp. 640-1).

³⁵ To reverse Harvey's comment above: in this case, one might as well use a double as a single letter.

³⁶ *idn* CW 6, *vdn* 11 (5 exx.), *udn* 2539, *un* 1546, *vn* 10 (14 exx.), *idn* Keigwin, Genesis I.9 line 2; CWBF, p. 19, section 46 [NB], pp. 46-47, line 17 [JB], pp. 52, section 9 [JB], *idden*, pp. 43 [JB]. The possible instance in *Bez mī a trouviaz un Pysg brawze, naw Losia*, Noel Cater, 1698, line 3, is better explained as the definite article. For Keigwin and Cater, see references at § 1.2.3.1.

³⁷ Contrary to the assertion made by H. Lewis, *Llawlyfr Cernyweg Canol*, § 9, p. 11.

un wyth "once" (cf. W. *unman* "any place") where it would be unstressed.³⁸ Williams suggests that the syllable was shortened early and re-interpreted as a fortis.³⁹ It is a unique case, but the absence of any exceptions in Late Cornish tends to support this explanation.

Another important exception is *obma* < *omma* "here" W. *yma* MIW. *ym(m)a*, *yman* < CBr. **in man* "the place".⁴⁰ This appears to contain /mm/ < /nm/ by assimilation. The items *alebma* < *alemma* "hence" and *alena* "thence" are apparently related compounds **a'n lē omma* "from this place" and **a'n lē ena* "from that place".⁴¹ The former appears with pre-occlusion as expected, but the latter contains *ena* "there" (cf. W. *yna* MIW. *ynaeth*) rather than *omma* and is treated differently.⁴² It occurs only three times in BM and CW but is not pre-occluded anywhere, even in Late Cornish.⁴³ This must be because **a'n lē ena* contains only a single medial consonant. Moreover, the word *ena* "there" (W. *yna*) never shows pre-occlusion and must contain /n/.⁴⁴

Similarly, the masculine demonstratives *hebma* < *hemma* "this one" and *hedna* < *henna* "that one" are pre-occluded because they are contractions **hen+omma*, **hen+ena* whose first element is the earlier demonstrative (CC. **sind-*, W *hwn*, *hon*, *hyn*).⁴⁵ This is demonstrated by the forms *henma* and *hen-ma*.⁴⁶ In this case, even *henna* < **hen+ena* contains a double consonant by sandhi. The feminine equivalents **hobma* < *homma* (< **hon+omma*) and *hodna* < *honna* (< **hon+ena*) are not

³⁸ *uncorn* Voc. Corn. (Ælfric *anhyrned deor*); *un wyth* PC 1467.

³⁹ N.J.A. Williams, *Cornish Today*, § 9.1, p. 71. Williams uses Jackson's term fortis, here /N/, rather than describing the phoneme as geminate /nn/, preferred by George and myself.

⁴⁰ *obma* CW 2523, *oma* 312, 620, *omma* 4 (68 exx.).

⁴¹ *a lebma* CW 1208 (2 exx.), *a lemma* 145 (9 exx.), *a lema* 1150 (9 exx.), *alema* 1468 (2 exx.), *alemma* 1995; *alena* CW 934, 1823.

⁴² *ena* OM 751.

⁴³ The form *alenna* occurs in a version of the Creed [anon.], ca. 1700, Bodleian Carter MS. 269, f.39ar and also in William Rowe's Matthew IV.21, R.M. Nance, OC 3/1 (1937), pp. 41-44.

⁴⁴ The spelling *alenna* gave rise to a disagreement between Williams, *op cit.*, § 9.3, p. 72 and George, *op cit.*, p. 153. Neither dispute that the phoneme was short (or lenis) /n/, so there is no difficulty here.

⁴⁵ *hebma* CW 2493, 2499, *hemma* 736 (16 exx.), *hedna* 2447 (4 exx.), *henna* 1094 (104 exx.).

found with pre-occlusion in Middle Cornish, but *hodna* is recorded in Late Cornish vocabulary lists.⁴⁷ This scant attestation may be because the feminine forms are reserved strictly for objects or individuals, while the masculine is not distinguished from the old neuter (CC. **sindon*, MIW. *hynn* W. *hyn*) in Cornish and may therefore be used in the abstract. Consequently *hebma* and *hedna* are the common forms that occur.

However, the expected pre-occlusion *nn* > *dn* and *mm* > *bm* in the demonstrative pronouns is far less frequent than a unique change *mm* > *lm* which occurs in the words *hemma* > *helma* and *homma* > *holma*. If this were understood as a highly irregular form of pre-occlusion, as it may superficially seem to be, it would need to be explained why the change /mm/ > /lm/ never occurs in other words. These forms occur only in BM, CW and TH (both JT & SA) and are absent from both earlier Middle Cornish manuscripts and from Late Cornish, so they are at least partly contemporary with pre-occlusion. The lone instance of *helma* that occurs in Tonkin's vocabulary is given with the meaning "here, this place, this hall" and may be the same word as *hel* "hall" in OM, ostensibly taken from a phrase such as **an hel-ma* "this hall".⁴⁸ It is possible, however, that Tonkin misunderstood a Middle Cornish form *helma* (= *hemma*), but this only goes to show that he was unfamiliar with it in Late Cornish.⁴⁹

In BM, there are two examples of *holma* and one of the compounded *holmyv* < **homma* *yw*, but none of *homma* or similar.⁵⁰ The masculine form *helma* is the most common, as expected, occurring 29 times; it is also found with capitalisation as *Helma* once, as *helme* three times and once each as *helmyv*, *Helmyv*.⁵¹ This total of 35 is surprising

⁴⁶ *henma* CW 1856 (4 exx.); *hen-ma* PC 1327. The hyphen in Norris' edition may or may not be editorial, but is apparently confirmed by Hawke's reading (unpublished).

⁴⁷ *homma* OM 754; *hodna* ACB sigs. K1r-Bb4v [see headword]; *honna* CW 20.

⁴⁸ Pryce, ACB, sigs. K1r-Bb4v [see headword]; *hel* OM 1501, 2110.

⁴⁹ Since BM was in Wales and it is unlikely that he saw TH (9 exx.), it was probably the ex. in CW.

⁵⁰ *holma* BM 1072, 4148, *holmyv* 4148.

⁵¹ *helma* BM 2023 (29 exx.), *Helma* 2080, *helme* 27 (3 exx.), *helmyv* 2762, *Helmyv* 1522.

because otherwise *hemma* and its compounds are not found in BM, with or without pre-occlusion: an extraordinary fact to have been previously overlooked. CW has 16 examples of *hemma*, five of *hema* and four of *henma* (cf. *hen-ma* cited above, Ordinalia).⁵² Pre-occluded *hebma* occurs twice and the forms *helma*, *holma* occur once each.⁵³ Either these sound changes were sporadically appearing simultaneously or else CW was later re-edited and did not originally contain some of these forms.

Following Whitley Stokes, Nicholas Williams suggests that the forms *helma* and *hemma* existed side by side and that *helma* is a contraction of **hen y'n lē omma*.⁵⁴ The group /lm/ would evidently not be involved in pre-occlusion. It is significant then that this phrase never occurs in any manuscript of Cornish. If Williams is right, one might expect *helma* to refer to a tangible object, as opposed to *hemma* being presumably available equally in the abstract as for an object. This is never borne out by context, where both are used indiscriminately. In almost every case in TH, for instance, *helma* refers to the abstract rather than the physical. Possibly, such a distinction may already have been lost.⁵⁵

The form *hemma* occurs 57 times in JT (including a marginal note) and seven times in SA. By comparison *helma* occurs eight times and once respectively; the form *homma* does not occur; *holma* occurs twice in JT.⁵⁶ One reason that the form *hemma* occurs could be that Tregear, being a cleric, had access to earlier Cornish manuscripts, especially if he was indeed at Glasney.⁵⁷ But perhaps the two forms were indeed in free variation at that time. The second translator, whose spelling habits are

⁵² *hemma* CW 736 (16 exx.), *hema* 1104 (5 exx.), *henma* 2128 (4 exx.).

⁵³ *hebma* CW 2493, 2499, *helma* 1048, *holma* 1084.

⁵⁴ Stokes' forms **hen-lemma*, **hon-lem-ma* seem incoherent, but presumably inspired Williams' reconstruction, *Studia Celtica* 32 (1998), § 2.10, p. 146. The importance of the following discussion is to disassociate the forms with /lm/ from pre-occlusion, so the argument must be examined here.

⁵⁵ Apart from the virtue that it requires only one type of development rather than two, the alternative theory set out below does not require any semantic development of the kind.

⁵⁶ *hemma* TH 1a.13 [JT], 59.8 [SA], *helma* 1.4 [JT], 60.7 [SA], *holma* 18.1, 34a.3 [JT].

⁵⁷ T.Z. Chaudhri, *A Description of the Middle Cornish Tregear Manuscript*, p. 4.

different in some minor respects, but whose Cornish is otherwise similar to the first, has the same distribution of forms. The change seen in *helma* < *hemma* is not mirrored by a similar effect on *henna*. For example, only *henna* (104 exx.), *hena* (5 exx.) occur in CW, although the pre-occluded form *hedna* occurs four times.⁵⁸ The feminine appears as *honna* (four exx.) and *hona* (twice) without pre-occlusion.

Although the changes [l] > [l̥] and [ŋ] > [ŋ̥] in Manx (see § 2.4 below) are perhaps supplementary evidence to show that the regular changes [nn] > [n̥n] and [mm] > [m̥m] are not necessarily the only possible results of pre-occlusion, it seems unlikely that [mm] > [lm] is an alternative or earlier reflex. The phone [l] is a lateral liquid sound, normally alveolar rather than dental and quite unlike the labial [b]. As compared to [mm], the group [lm] would not represent an early velar closure like [m̥], but in fact rather a late one. Increased tenseness of the double consonant would tend to increase the labial closure and hinder any development [mm] > [lm]. Moreover, the phone [l] is impossible under the conditions of a labial closure, so it does not seem that [lm] can be a sound that would be produced by pre-occlusion.

A plausible alternative explanation to that given by Williams is that several sound changes occurred sporadically at first, but pre-occlusion came to predominate by the time of Late Cornish.⁵⁹ Originally, forms such as *hen-ma* < **hen+omma* were probably most frequently subject to assimilation to *hemma*, but this was not complete by the time that the MIC. portion of CW was composed. An alternative to this was the dissimilation of *hen(-)ma* > *helma*, but this change was not universal, except in BM. The fact that *helma* should be universal in a single text

⁵⁸ *henna* CW 2002, *hena* 625, *hedna* 2447.

⁵⁹ I owe this very plausible suggestion to my supervisor, Patrick Sims-Williams. Neither theory is conclusive. In any event, the idea that /lm/ in these words is unrelated to pre-occlusion seems secure.

tends to strengthen the idea that it is a sound change, not in origin a semantic alternative. Such forms are absent from the Ordinalia. In any case, these forms probably developed around or before the time of BM and the MIC. corpus of CW, perhaps in the early fifteenth century.

The form *hemma* apparently remained most common; as a result, medial /mm/ in this word was pre-occluded regularly. Evidently, this could not happen to forms with /lm/, but since these do not occur in Late Cornish, they seem to have been short-lived.⁶⁰ As will be discussed below, the instances of pre-occlusion in BM and CW seem to be the result of later editing. Due perhaps to his age, the cleric Tregear (or perhaps his scribe) may have used conservative forms in TH, when pre-occlusion was probably still quite new. Consequently he does not give *hebma* but the earlier dissimilation (or contraction, according to Williams) *hen(-)ma* > *helma* does occur in his translation. It is interesting that the scribe of SA does not write pre-occlusion either (see § 2.7).

2.4. Pre-occlusion in Tonic Syllables

Although pre-occlusion is common in monosyllables amongst the extant Middle and Late Cornish examples, it is in fact most common in words of two syllables or more, such as *bedneth* "blessing" < *ben(n)eth* (< L. *benedictio*), *gybmar* "take" < *kymmar* (< CC. **kombere*).⁶¹ The universal restriction upon this is that it only happened where the phoneme /nn/ or /mm/ occurred in the stressed syllable, as described above. Since no word of unusual stress shows pre-occlusion in the known examples, in disyllables and polysyllables it was always therefore a feature of the stressed penult. It is natural then to assume that word stress played a part

⁶⁰ See the explanation above for the reasons that Tonkin's example was taken from Middle Cornish.

⁶¹ *bedneth* BM 224 (3 exx.), *Beneth* 31, *benneth* (6 exx.); *gybmar* CW 692, 2304, *kymmar* 688, 1148.

in its phonetic motivation. It seems to be the case that pre-occlusion could not normally spread to unstressed syllables because the lack of stress meant that, as Jackson described for Breton, the realisation of long consonants was effectively reduced to short.

Penultimate stress developed in neo-Brittonic in the Accent Shift some time after the inception of the New Quantity System and the loss of final syllables in Brittonic.⁶² Pre-occlusion in Cornish occurs in the stressed penult of disyllables and polysyllables and also in monosyllables, which are inevitably stressed syllables. It is particularly interesting that the other Celtic language in which pre-occlusion occurs is Manx, so it is safe to assume that the phenomenon must have come about independently in the two branches of Celtic. The differences between the operation of pre-occlusion in the two languages are therefore revealing from a structural point of view, as well as in the superficial similarities.

In Manx, pre-occlusion is normally confined to monosyllables, but in a few disyllables that have unusual final stress it may also occur, such as *Jeley'n* "Monday" [dʒɛ'li^dn], *Jerdein* "Thursday" [dʒa:'de:^dn], *arran* [a'ra^dn].⁶³ Moreover, it may sometimes occur when a disyllable becomes a monosyllable through the loss of a medial spirant, e.g. *jeeaghyn* "looking" [dʒi^dn].⁶⁴ Stress in late spoken Manx was generally on the first syllable of a word, sometimes on the second.⁶⁵ The reason given by Jackson that pre-occlusion in Manx does not occur in non-final stressed syllables is that the affected consonant must be in absolute final position in the word.⁶⁶ This may be because Manx, unlike Cornish, did not retain the phonemic oppositions /nn/–/n/, /mm/–/m/ by the time of pre-occlusion

⁶² P. Sims-Williams, "Dating the Transition to Neo-Brittonic: Phonology and History, 400-600" in *Britain 400-600: Language and History*, ed. Alfred Bammesberger & Alfred Wollmann.

⁶³ G. Broderick, *A Handbook of Late Spoken Manx*, pp 162-5, esp. p. 163.

⁶⁴ *ibid.*, p. 164.

⁶⁵ K. Jackson, "Contributions to the Study of Manx Phonology", § 1, pp. 19-20; Broderick, *ibid.*, p. 6.

⁶⁶ Jackson, *ibid.*, § 43, p. 113-5, esp. p. 113 & n. 1 (p. 114).

(whether or not this had earlier been the case) and the appearance of the long varieties of /n/ [nn] and /m/ [mm] was determined only by final position in a stressed syllable. This underlines the fact that the retention of /nn/ and /mm/ in Cornish was the direct result of the New Quantity System in neo-Brittonic, in which of course Goidelic took no part.

The same restriction evidently did not apply to Cornish, where conversely pre-occlusion *did* appear in the stressed penult or in a monosyllable but never in the ultima, which was always unstressed. If the phonemic status of the phonemes /nn/ and /mm/ was the crucial element in pre-occlusion in Cornish, one would expect that the phenomenon would be limited to a narrower range of environments than if, as seems to have happened in Manx, it had been determined by position. Although the environments in which pre-occlusion occurred in the two languages are not identical, it is at least common to both that the consonant in question had to occur within a stressed syllable in order to undergo the sound change. It seems reasonable to postulate that a consonant following a stressed vowel is inherently likely to receive a more tense articulation than the same consonant following an unstressed vowel.

2.5. Consonant Quality and Vocalic Length in Manx

The comparison with Manx is therefore a useful one, not merely because it happens to be the only other Celtic language that shows pre-occlusion, but also because the environments in which it occurs only partly overlap with those in Cornish. The most obviously similar example given by Broderick is Manx *cam* [k'e^bm, k'a^bm < k'am] "crooked" < CC. **kāmbō-*, almost identical to the word in Cornish.⁶⁷ The same thing happens to Jackson's *eem* "butter" (CC. **emben-*, OIr. *imb*), given as

either [i:^bm] or [i^bm].⁶⁸ In both cases the consonant is originally long /mm/ < /mb/ and the vowel is originally short, but like Scots Gaelic *ìm*, the form *eem* has a lengthened vowel. It is not clear whether this lengthening of the vowel is associated with pre-occlusion in this word or, if not, which change came first. Pre-occlusion of original /nn/ after a short vowel may be seen in Rhÿs' example *kione* [k'oun, k'o:^dn] < MIr. *cend* (or *c(h)iunn* if the Manx form comes from the dative).⁶⁹

However, it becomes clear from *ben* [be^dn < ben] "woman" < CC. **běnā*, containing original /n/, that the sound change in Manx could affect a *historically short consonant* after a short stressed vowel. Original short /n/ is also affected in *shenn* "old" (OIr. *sĕn* < CC. **sĕnos*), given as [ʃa:^dn] or [ʃa:n] with a long vowel on the north side and [ʃen] or [ʃe^dn] in the south with a short vowel.⁷⁰ This is cognate with C. *hĕn* given above, which is never pre-occluded. Again, vowel lengthening in some areas may or may not be linked with pre-occlusion. (It would not be possible, incidentally, for short /m/ to have been pre-occluded in Manx since, just as in Brittonic, it would be lenited to /μ/, e.g. Manx *laue* "hand" OIr. *lám*, OW. *lau* OC. *lof*.⁷¹)

At least on the south side of the island, the change occurred similarly before /l/ [l] > [l^d] and /ŋ/ [ŋ] > [ŋ^g]; there is apparently no evidence from the north side. Two examples given by Broderick are *shooyll* "walking" [ʃu:^dl < ʃu:l] (Ir. *siúl*, Sc.G. *siubhal*) and *lhong* "ship" [lɔ^gŋ < lɔŋ] (Ir., Sc.G. *long*). The former shows pre-occlusion after a long vowel (in this case brought about by the loss of the medial spirant), a fundamental divergence from Cornish; there is no apparent effect upon the vowel length. Similarly, *bane* "white" [be^dn, bø^dn, bɛ:^dn, bɛ:n] < OIr.

⁶⁷ Broderick, *op cit.*, p. 163.

⁶⁸ Jackson, *op cit.*, § 43, p. 115.

⁶⁹ J. Rhÿs, "Outlines of Manx Phonology", p. 142.

⁷⁰ Broderick, *op cit.*, p. 162.

⁷¹ The alternative form OC. *lau* (Voc. Corn. 75) is either Welsh or is influenced by it.

bān < CC. **bānos* demonstrates that pre-occlusion could happen after an original long vowel, even in a word with original short /n/; furthermore, it shows shortening of the expected long vowel.⁷² The same is seen in *lane* "full" [le^dn] < OIr. *lān* < CC. **plānos*.⁷³ I can find no examples of the reflex of original /nn/ or /mm/ after an original long vowel.

Jackson pointed out that "Original long vowels may be shortened before these sounds..." and Rhÿs described how "the reinforcement of the consonantal element took place... at the expense of the vowel".⁷⁴ This accounts at least for words that contained an original long vowel before a short consonant, even if the compensatory shortening did not always happen. Rhÿs went on to remark that "... the less distinctly one hears the parasitic consonant the less is the quality of the vowel tampered with."⁷⁵ The examples nearly always have at least one variation in which long vowels may have been shortened as a result of pre-occlusion.⁷⁶

In the case of words containing an original short vowel, it seems most likely that any lengthening of the vowel occurred earlier than pre-occlusion. Jackson remarked that this is a feature common to all three Goidelic languages.⁷⁷ In some cases these vowels may have been shortened again as a result of pre-occlusion. Unfortunately the evidence is not consistent enough to track such changes, especially without any means to date the relatively small sample derived from speakers from various different areas. If pre-occlusion indeed shortened previously long vowels, it seems inherently unlikely that short ones would be lengthened in the same process. (Alternatively it might have occurred after they were shortened in a separate process, although this seems to be generally

⁷² *ibid.*, p. 161.

⁷³ Jackson, *op cit.*, § 3, p. 25.

⁷⁴ Rhÿs, *op cit.*, pp. 142-144.

⁷⁵ *ibid.*, p. 143.

⁷⁶ Jackson, *op cit.*, § 43, pp. 114-5.

⁷⁷ *ibid.*, § 1, pp. 19-20.

unlikely in the light of Jackson's remarks.) The examples that show an original short vowel as long may simply not have subsequently participated in any sporadic shortening that may have been caused by pre-occlusion, if Jackson and Rhÿs are correct.

In any case, pre-occlusion in Manx happened in words containing an original short vowel irrespective of whether the consonant was originally single or double. It happened equally in words containing an original long vowel. Whether or not a long vowel was *originally* long or short, it seems that there may possibly have been a tendency to shorten long vowels to compensate for the increasing tenseness of the following consonant, as Jackson suggested. Rhÿs considered that pre-occlusion occurred first after short vowels and later spread to syllables containing long ones; this appears to fit with his and Jackson's hypothesis well, as well as more generally with the evidence of pre-occlusion in short stressed syllables in Cornish. That is not to say, however, that any change in vowel length in Manx associated with pre-occlusion is evidence that the same necessarily occurred in the Cornish phenomenon.

The logical consequence of these observations is that pre-occlusion in Manx had no phonemic motivation but was instead determined only by word final position in a stressed syllable. This seems to be a good explanation for its comparatively wider operation, although it does not entirely explain why the additional changes /l/ [l] > [d̪l] and /ŋ/ [ŋ] > [ɛŋ] occurred only in Manx. It may have served to emphasise the long nature of a syllable where the inherited vowels tended to be shortened, although the evidence is equivocal. Pre-occlusion was not determined simply by position in Cornish, where the phonemes /nn/ and /mm/ were still an inherent part of the quantity system and must have participated in the sound change where they occurred in short stressed syllables.

2.6. The Prosodic System in Middle Cornish

It is not unreasonable to posit that pre-occlusion in Cornish may have occurred within or as a result of the inherited prosodic system, even if the associated changes observed in the lengths of vowels in Manx represent a systematic prosodic shift of some kind. The crucial difference is that Cornish must have retained the long phonemes /nn/ and /mm/ at least until the time of pre-occlusion. It did not therefore rely upon a process of gemination based on position. The parallel of Manx and Cornish pre-occlusion is by no means a direct one.

However, we have not so far addressed the phonetic motivation of the phenomenon in Cornish. It has only been explained diachronically in detail by Dr. Nicholas Williams, whose theory of a Prosodic Shift *before* the Middle Cornish period appears to undermine the inherited quantity system upon which the distribution of pre-occlusion in Cornish was based.⁷⁸ Since my contention is that the phonemes responsible for this survived precisely because this quantity system persisted until the time of observed pre-occlusion, the evidence for his theory must be discussed here. In essence, an early Prosodic Shift would mean that half-long vowels in his examples *dad(d)er* "goodness" < CC. **dago-* + suffix *-ter* and *tas(s)ow* "fathers" < Brit. **tatowes* fell together with short ones while long vowels in *dā* "good" and *tās* "father" < Brit. **tatos* were correspondingly shortened, leaving a twofold rather than threefold opposition.⁷⁹ The examples under dispute need to be discussed here.

Williams suggested that the doubling of consonants in the orthography of Middle Cornish shows the falling together of half-long vowels with short vowels in polysyllables. With respect to half-length

⁷⁸ Williams, *Cornish Today*, § 2.4-7, p. 17-20, "Pre-occlusion in Cornish", § 1.0, p. 129-36.

becoming short, he wrote that “The only way of showing this in writing was by doubling the consonant: *an chymma* /an'tʃɪma/.” His principle example, *dadder* < *dader* “goodness” has been questioned by George on a statistical basis as not being representative of the wider corpus of words showing an unhistorical doubled consonant.⁸⁰ Considering that George’s statistics for MIC. make use of the entire extant corpus, they seem to be reliable in this matter. In fact, *da(d)der* is a rare word except in the group of texts including BM, TH (JT & SA), so cannot be analysed statistically for other texts. George’s analysis has the fault that it does not distinguish between JT and SA, although the former dates from 1555-8 and the latter from perhaps ca. 1570-1600, probably after 1583.⁸¹ However, this was not known at the time that *Kernewek Kemmyn* was published. It is clear that the word is so common in the homilies because the content includes continual moral exhortations throughout. It is true that TH favours *dadder* (16) over *dader* (2) forms, but BM does so less markedly (14:9). The only other group of texts to have more than one form is the Ordinalia (3:2).

When George’s statistics are used for other words with a doubled consonant, the balance is quite different.⁸² Spellings with doubled consonants are negligible, limited to occasional variant graphs at the rate of around one or two per text at the maximum, until CW. These make up between 0.2–0.7% of the total. Even in CW, they make only 2.2%. By contrast, the statistics for the 17th century are 59%, for Edward Lhuyd 35% and for the 18th century 37%. However, Lhuyd’s orthography is by and large his own philological invention, and his Cornish is full of faulty assumptions based on Welsh. It is clear that the fragmentary texts after

⁷⁹ *dadder* BM 485, *dader* 49; *tasow* TH 59a.18; *tassow* OM 1409; *da* PC 546; *tas* RD 309. He gives a short list of further words, *Cornish Today* § 2.5, p. 19.

⁸⁰ George, *Kernewek Kemmyn*, pp. 23-5.

⁸¹ See § 1.2.2 above.

⁸² He may have chosen the word *lader* deliberately because it has no <dd> forms, so I ignore that table. However, the table on p. 25 claims to be an exhaustive survey, which there is no reason to doubt.

ca. 1600 completely abandon the earlier orthography, although there are signs of this in BK, SA and CW⁸³. George argued that his totals are statistically significant, but the comparison would seem to be invalid because the materials compared are so unlike. Moreover, even the figure for the 17th century represents barely over half of the spellings, while the other two groups, even if allowed to stand as evidence, show a minority of doubled graphs for historically singular consonants.

Using George's data, I submit that he is quite correct in his rejection of Williams' evidence for the Prosodic Shift at a date before the Middle Cornish period, since all half-long vowels would be short and, by this theory, doubled graphs would demonstrate this. The evidence given by Williams is partial and selective. On the other hand, neither is George correct to use the spellings as evidence for a shift ca. 1600. The counter evidence that he provides of half-long vowels being lengthened in LC. is a mere list, so it is impossible to analyse statistically. It consists of spellings such as *deeber* "saddle", *gweetha* "to keep", *gweethes* "kept", *wheelaz* "to seek", *meero* "look" (2pl. imperative), *peeber* "piper", *seera(h)*, *zeera(h)* "father, sire", *skreefa* "to write", *teera* "to land" and *treega* "to live", which he analyses with /i/. To these he adds three examples of place-names, *Praze-an-Beeble* "Pipe Meadow", *Park-an-Skeeber* "Barn Park/Field" and *Gweale Skeeber* "Barn Field".⁸⁴ Since half-length is merely a reduced variety of long, these examples serve to show that it was in fact preserved, but George omits to note this.

Since George also postulates a Prosodic Shift, ca. 1600 instead of ca. 1250, but he denies that it involves a shortening of half-long vowels to short.⁸⁵ It is difficult, then, to see what it would in fact entail, if not a

⁸³ Notably the increasing lowering of vowels and use of final silent -e.

⁸⁴ George, *Kernewek Kemmyn*, p. 26.

⁸⁵ *ibid.*, pp. 21-2 & 27. The table on p. 22 and preceding comments clearly indicate this, but on p. 27 he merely refutes Williams' analysis and makes no attempt to analyse his own LC. examples.

significant change in the lengths of some vowels relative to others. In the same work, he later gives the date ca. 1625 for the loss of half-length, without evidence, as well as for the fusion of /ɪ:/ and /e:/.⁸⁶ However, apart from the questionable comparison with the Late Cornish groups of texts above, I can find nothing in the sections of the work there referred to that substantiates these suggestions.⁸⁷ Since his PHC relies on the same statistical analysis and the same comparisons of unlike orthographical practices (a fact that is immediately visually obvious when comparing Late and Middle Cornish), it seems that there is no such evidence. It appears that very little more than the lowering of various vowels characterises the changes that George calls a Prosodic Shift, although such variations and lowering are seen throughout Middle Cornish.

If vocalic lengths were indeed altered from the situation that was inherited from the New Quantity System in Brythonic, it might be expected that some confusion would arise about whether any given short vowel was followed by a double or single consonant.⁸⁸ Since speakers would not be aware of whether or not a vowel had previously been short, both original /nn/ and /n/ could be realised in this position as either [nn] or [n]. In fact, Williams concludes that "... {The long fortis} /N/ and {the short lenis} /n/ would have fallen together as a short fortis {/n/}." In order to maintain the distinction, "... the historic fortis lost length but was now preceded by a furtive unexploded stop... to distinguish it from the newly reinforced /n/." ⁸⁹ This may be seen as an attempt to compromise between Harvey's choice of gemination versus Jackson and Greene's choice of

⁸⁶ *ibid.*, pp. 171-2.

⁸⁷ *ibid.*, pp. 20-27, 36-42.

⁸⁸ The NQS probably came about in a number of stages, see P. Sims-Williams, "Dating the Transition to Neo-Brittonic: Phonology and History, 400-600" in *Britain 400-600: Language and History*.

⁸⁹ N.J.A. Williams, "Pre-occlusion in Cornish", *Studia Celtica* 32 (1998), § 2.0, p. 137. The phrases inserted for clarity are derived from his own descriptions in the same paragraph and are presumably acceptable. Williams' considers both tenseness and length to be a factor here, which may well be true despite his confusing use of terms.

tenseness to mark the difference between the phonemes.⁹⁰ It is difficult to see how "short fortis" in Williams' usage differs qualitatively from the conventional meaning of "lenis".

Nonetheless, in my terms, Williams argues that the effects of the Prosodic Shift meant that /nn/ and /n/ (his /N/ and /n/) would have fallen together as /n/ [n] and that correspondingly /mm/ and /m/ (his allophones of /m/ [mm] and [m]) would have fallen together as /m/ [m].⁹¹ However, in order to maintain enough distinctions in the system (and so that pre-occlusion could still occur), the new distinctions /^dn/–/n/ and /^bm/–/m/ arose to avoid precisely this eventuality. Although Williams presumably believes that the shortening of /nn/ and /mm/ (his /N/ and /m/ [M]) was to reduce the contrast with half-long syllables, the "furtive unexploded stop" would appear to be something of a compromise between the need to preserve phonemic distinctions and to simplify the prosodic system.

From the point of view of pre-occlusion, this may seem to be a long-winded way of observing that the well known changes /nn/ > /^dn/ and /mm/ > /^bm/ in fact occurred, but it differs in an important respect. Williams' purpose is to link pre-occlusion to his Prosodic Shift and thus to argue that all of the remaining double consonants that had been left over from lenition were eliminated when half-long vowels were shortened. For example, while *penⁿov* "heads" would have retained a short vowel and would have undergone the change /nn/ > /^dn/, the mid-length vowel in *han^ow* "name" would have been shortened to give **hǎnow* with /n/.⁹² However, the long phonemes /ll/ and /rr/ would simply have been reduced to /l/ and /r/ without pre-occlusion in *gwella* "better,

⁹⁰ The use of capitalisation to mark tenseness was preferred by Greene, but Harvey chose gemination to mark length and stated that it was "... not an important disagreement...", "Aspects of Lenition and Spirantisation", p. 93. Jackson's capitals in LHEB also marked non-lenition, which is not at issue here.

⁹¹ As noted at § 2.2, Williams believes that lenition of /m/ > /μ/ had removed the opposition /M/–/m/ and that /m/ [M–m] was allophonic at this stage. It would in any case have been restored if [M] became [ᵇm], giving /^bm/–/m/. This is again a minor disagreement and does not invalidate the argument here.

⁹² *penⁿov* BM 1045, *han^ow* 10.

best" and *terry* "to break".⁹³ It is difficult to see why a change /l/ > /d^l/ similar to that found in Manx would not have given ***gwedla*, since it would be entirely in symmetry with the other changes.⁹⁴ Williams also adds that /^dn/ and /^bm/ never developed in the eastern "dialect" of Cornish, thus side-stepping the usual analysis that the language was already out of use in eastern Cornwall before the change.⁹⁵ This tends to undermine his statement that "... the opposition lenis – fortis was crucial to maintaining an adequate number of distinctions in the system."⁹⁶

It would therefore be useful to analyse exactly what would have happened if there had been dialects in which /nn/ fell together with /n/ and in which /mm/ fell together with /m/. In so doing, all of the potential results are discussed here, not only those suggested by Williams. For the sake of clarity, the following argument is limited to the reflex of /nn/ and /n/, but equally applies to /mm/ and /m/ in relevant examples below.

If these phonemes had fallen together, two contrasting hypotheses could be proposed as logical results. In the opposite scenario to that countenanced by Williams, a tendency might arise to generalise a double consonant by analogy from original short syllables to those that were originally half-long but had been shortened in the Prosodic Shift. The phoneme /n/ might be realised allophonically as [nn] in short syllables and [n] in long ones. When pre-occlusion occurred, earlier half-long syllables would participate as short vowels. The hypothetical results of this might include ***cadnow* < *canow* "songs" and ***robmes* < *romes* "rooms, divisions in a boat", while the singular *cān* "song" and *rōme* "room" might remain unchanged because they had long vowels.⁹⁷ The

⁹³ *gwella* BK 11c; *terry* RD 317.

⁹⁴ The reason why /rɾ/ is unaffected even in Manx may be linked to its phonetic realisation, see below, but George, *Kernewek Kemmyn*, p. 66, suggests that the graph <lh> may be related to pre-occlusion. It may be noted that it is frequent in BK, which has no pre-occlusion, a fact that he did not know in 1997.

⁹⁵ Williams, *op cit.*, § 2.3, p. 10.

⁹⁶ Williams, *op cit.*, § 2.0, p. 8.

⁹⁷ *canow* CW 2482; *romes* OM 952, *can* 2640; *rome* CW 258.

pre-occluded plurals might perhaps later have infected the singular. In the scenario imagined by Williams for eastern Cornwall, new /n/ < /nn/ might have become simply [n] internally everywhere, so pre-occlusion would not have happened at all. If it *had* then occurred, this would probably be limited to absolute final in monosyllables, as in Manx, where perhaps /n/ might still have been realised as [nn]. However, there would be nothing to stop corresponding pre-occlusion in final /l/ and /r/ as well as /n/ and /m/ in either the first or third scenarios if length was replaced by tenseness.

Even before a supposed Prosodic Shift, it must be presumed that speakers no longer understood vowel length as dependent upon the length of original consonants, since lenition and spirantisation had removed these in all cases except /ll/, /rr/, /nn/ and /mm/. By extension, the reverse perception, that the length of consonants was dependent on vowel length, seems inherently unlikely as well: so if the Prosodic Shift did happen, this might explain why the first scenario could not occur. The second scenario can be avoided by suggesting that a new distinction arose to replace the loss of the opposition /nn/–/n/, as does Williams (at least for western Cornwall), but this appears to be exactly the same as the simple statement that the phonemic distinction between /nn/ and /n/ *was not* replaced, merely that the reflex of the former changed.

The simplest way to explain this would be to posit that there had been no Prosodic Shift when pre-occlusion occurred in Cornish. This removes a convenient explanation for the sound change, but it may be in better keeping with the evidence. Although Williams' alternative theory has the advantage that it fits the evidence of attested words, it seems to be historically impossible on chronological grounds as well.⁹⁸ There are a number of problems with his analysis. The most difficult consequence is that pre-occlusion would need to have occurred before the Middle

Cornish period, since Williams' theory asserts that the Prosodic Shift was complete by then.⁹⁹ The evidence that he uses to demonstrate the effects of the Shift on other grounds is largely drawn from the Middle Cornish sources.¹⁰⁰ He dates the *Charter Fragment* to between the middle and late fourteenth century, *Pascon Agan Arluth* to the early fifteenth century and the *Ordinalia* to the mid fifteenth century.¹⁰¹ No evidence of pre-occlusion is found in these Middle Cornish manuscripts.

Indeed, pre-occlusion could not have happened after the proposed early Prosodic Shift, at some time between the eleventh-century *Vocabularium Cornicum* and the *Charter Fragment* in the fourteenth century. Either the single and double consonants (his lenis and fortis) would have fallen together or else the new phonemes /^dn/ and /^bm/ would already exist. Jackson believed that *Vocabularium Cornicum*, although basically a document of Old Cornish, corresponded "... in certain respects... rather to Early Middle Welsh in its stage of development."¹⁰² Since *Beunans Meriasek* is dated 1504, Williams' dating leaves a period of up to four hundred years in which pre-occlusion was not once represented in writing, purely due to scribal conservatism.¹⁰³ By contrast, George believes that the Prosodic Shift occurred circa 1600; but this would be at least fifty years too late to explain the earliest examples, as will be shown below. In fact, George has abandoned his initial attempts to explain the phenomenon in this way.¹⁰⁴

⁹⁸ As noted by George, *Cornish for the Twenty-First Century*, p. 59.

⁹⁹ Williams, *op cit.*, § 4.0, p. 152-3, argues that pre-occlusion "... was the direct result of the Prosodic Shift but did not appear in writing until syllables began to lengthen again probably in the sixteenth century." This seems to flatly contradict his idea that /^dn/ and /^bm/ were direct results of the Shift.

¹⁰⁰ N.J.A. Williams, *Cornish Today*, § 12.1-7.

¹⁰¹ Williams, *ibid.*, § 14.2, pp. 125-6.

¹⁰² LHEB, p. 6.

¹⁰³ This ignores the fact that the first 270 lines of BM were re-copied at a later date, which George dates plausibly as ca. 1540, *Cornish for the Twenty-First Century*, p. 63.

¹⁰⁴ He originally assigned pre-occlusion to ca. 1575, PHC, § 17.3.2, pp. 412, but assigns it to between ca. 1510 and ca. 1575 in *Cornish for the Twenty-First Century*, p. 63.

Williams' assertion that "... the opposition lenis – fortis was crucial to maintaining an adequate number of distinctions in the system" is not necessarily true.¹⁰⁵ The criticism levelled above that his proposed eastern dialect is exempt from this consideration can perhaps be overlooked since there is no evidential basis upon which to discuss dialect.¹⁰⁶ More importantly, it is quite possible that a few pairs of disyllabic words would have otherwise fallen together, one with an original half-long stressed penult and the other short; but most languages have homophones and Cornish was already no exception. In all the extant examples I have not been able to find a case in which this would happen.

The only way that these conclusions can be drawn together into a model that represents observed pre-occlusion is to abandon the connection between the proposed Prosodic Shift and pre-occlusion. In particular, such a connection is quite impossible if Williams' early date for the Shift is to be believed. Consequently the long phonemes /nn/ and /mm/ must have remained in Cornish until the time of pre-occlusion, when they became realised as [ˈn] and [ˈm]. Since it was not especially important whether /nn/ and /mm/ remained in the system from the point of view of symmetry (since otherwise only /ll/ and /rr/ remained), there is no particular reason to disallow the phonemic notations /ˈn/ and /ˈm/. In fact, there is no easy answer to the question why /ll/ (and even /rr/) was not affected even sporadically, whatever the phonetic motivation.¹⁰⁷

Supposing that the Prosodic Shift had indeed occurred at the same time as pre-occlusion and was the principal cause of the sound change, it seems likely that there would have been a certain amount of confusion as

¹⁰⁵ N.J.A. Williams, "Pre-occlusion in Cornish", *Studia Celtica* 32 (1998), § 2.0, p. 137.

¹⁰⁶ *ibid.*, § 2.5, pp. 11-12. I suggest that his maps (esp. Map II, Pre-occlusion) show the geographical decline of Cornish over time: no good evidence for an eastern dialect has ever been demonstrated.

¹⁰⁷ The verb *medra*, *madra* "to study, behold" (W. *medru*) given by Pryce and Borlase is not the same as *myres* RD 1536 (B. *mirout*), which has /r/, W. Borlase, *Antiquities, Historical and Monumental, of the County of Cornwall*; Pryce, ACB, sigs. K1r-Bb4v.

to which words contained the double and single versions of the consonants. If pre-occlusion were new, the older generation would be likely to continue without it for perhaps up to two or more decades, probably resulting in a gradual introduction that would not have been uniform. It seems likely that a certain amount of confusion would have developed over which words contained the single and double sounds, as analogical forces began either to eliminate double consonants or else to generalise them where they should not have been expected. Although they would not have been critical in determining whether a vowel was short or half-long, conversely the vowel quantity would have made it obvious whether double or single consonant occurred. If the distinction between short and half-long was lost, the double length of /nn/, /mm/, /ll/ and /rr/ would lose vowel length as an additional marker. It would be especially meaningless because the other long vowels had been lost centuries earlier at the time of lenition, so symmetry was not a factor.

Since pre-occlusion is an entirely predictable sound change in the sense that exceptional cases never occur in words with etymological short /n/ or /m/ (except those regular exceptions already discussed), the best explanation seems to be that the changes /nn/ > /^dn/ and /mm/ > /^bm/ were already complete long before any proposed Prosodic Shift. The observed failure of /ll/ and /rr/ to take part in pre-occlusion would presumably leave them open to reduction to /l/ and /r/ in such a shift. Conversely, the phonemes /^dn/ and /^bm/ would have avoided reduction since they contained two phonetically distinct segments in place of one extended consonant. Where /nn/ and /mm/ remained in unstressed syllables, or else where pre-occlusion had not occurred universally, reduction would again be expected. However, it is beyond the purposes of this chapter to provide a detailed analysis of any systematic prosodic changes that occurred after pre-occlusion, if it can be shown that they were not its cause.

Rejecting the Prosodic Shift as the motivation for pre-occlusion certainly removes a potentially convenient diachronic explanation for why the sound change occurred in /nn/ and /mm/ in stressed syllables, and not in /ll/ and /rr/. I do not agree that pre-occlusion was necessary to maintain the number of distinctions in the system since (1) most double consonants had already been eliminated without any significant ill effects; and (2) the very fact that nothing happened to /ll/ and /rr/, which should have been equally important, shows that these distinctions were simply a residue of an archaic syllable structure. They were compatible with the prosodic system nonetheless, since they had formed part of the structure upon which it was originally framed, so there was every reason to retain them at least until the date of pre-occlusion, if not longer.

The nasals [n] and [m] possess close oral counterparts [d] and [b], whereas the articulation of the lateral [l] is relatively further removed from that of [d] than is true of [n]. The exact phonetic realisation of /r/ and /rr/ in Middle Cornish may have been flapped [r], trilled or tapped [R] or retroflex [ɺ]. However, all of these sounds would be articulated even less closely to a plosive counterpart such as [d]. This may explain why /nn/ and /mm/ were inherently more likely to be pre-ploded as [ᵈn] and [ᵇm] than /ll/ and /rr/. It is likely that the further type of pre-occlusion [ll] > [ᵈl] occurred in Manx, but not in Cornish, because the phonetic motivation for these changes was sufficiently greater that the articulatory distance between [l] and [d] could be overcome. Taking all of the possible realisations of /r/ or /rr/ given above as a group [r-R-ɺ] for the sake of convenient hypothesis, the articulatory distance between [r-R-ɺ] and [d] is evidently too great for pre-occlusion to be as likely a development.

Although I have disagreed with Dr. Williams over his use of fortis or lenis rather than gemination or non-gemination, the question of

tenseness is probably the factor that motivated pre-occlusion. However, I do not believe that tenseness was an inherent feature of the phonemes that later underwent pre-occlusion. It is reasonable to suppose on a general basis that phonemes are articulated with additional tenseness in a stressed syllable and moreover that they may receive heavier articulation when the vocalic element of the syllable is relatively short and the consonantal element is relatively long. This is a good description of the environment in which pre-occlusion is in fact observed.

It is evident that short stressed syllables came to be articulated with rather more force than had previously been the case. As I have argued, it does not seem that a Prosodic Shift could be the reason. Nor was there any particular need to increase the distinction between the two pairs of phonemes /nn/–/n/ and /mm/–/m/, which were essentially an archaic remnant of an earlier prosodic system. If any shortening of vowels had been the cause, it would surely be in half-long syllables that any articulatory changes would have occurred, where pre-occlusion does not occur, rather than in short syllables, whose articulation would have remained unchanged. Whatever the reason for the increased intensity of the articulation of consonants in stressed syllables, the only phonemes that could be affected were /nn/ and /mm/, since all other long consonants except /ll/ and /rr/ had been eliminated and, for the reasons discussed, these two were less liable to develop a pre-occluded element.

The phonetic consequence of the increased tenseness in the articulation of /nn/ and /mm/ appears to have been a premature velar closure, leading to dental plosion that differentiated the first portion of the long consonant /nn/ [ʰn] and labial plosion that did likewise to the first portion of /mm/ [ʰm], effectively turning long consonants into segmented consonant clusters. This produced examples such as *tabm* /tamm/ [taʰm] < *tam* "piece", *hebma* /hemma/ [heʰma] < *hemma* "this one", *pedn* /penn/

[pe^dn] < *pen* "head" and *bedneth* /benneθ/ [be^dneθ] < *benneth* "blessing".¹⁰⁸ This is the traditional model of pre-occlusion that has been accepted by Nance, George and others – but it is important that the sound change would have been impossible if the inherited prosodic system had been abandoned, and almost certainly far less regular if it had been a consequence of a simultaneous Prosodic Shift.

2.7. The dating of pre-occlusion in Cornish

The earliest examples of pre-occlusion known in the Middle Cornish texts are three isolated occurrences of the word *bedneth* in the saint's life *Beunans Meriasek*, dated 1504.¹⁰⁹ It is quite possible that this play was assembled from pre-existing parts which were composed at a slightly earlier date, but the references are securely dateable to the late fifteenth century at the earliest.¹¹⁰ In particular, the play's thinly veiled critique of the Tudor dynasty, through the portrayal of the malevolent pagan character Teudar, might appear to be inspired by the period of unrest in Cornwall in the 1490s.¹¹¹ It is significant, however, that the first ten pages were re-copied at a later date, apparently due to damp. The same word also appears without pre-occlusion in these first 271 lines, variously spelt as *Beneth*, *benneth*, *bennath* and *Banneth*; the plural occurs once each as *bennethow* and *bannothow*.¹¹² In the remainder of the play, the singular *Banneth*, *banneth* and the plural *bannothov* occur.¹¹³ Despite twice as many examples in the singular, the earlier spelling

¹⁰⁸ *tabm* CW 775, *tam* 626 (4 exx.), *hebma* 2493, 2499, *hemma* 736 (16 exx.), *pedn* 2318 (4 exx.), *pen* 354; *bedneth* BM 225 (3 exx.), *benneth* 202 (6 exx.)

¹⁰⁹ See previous note. [Nance incorrectly gives 198 as *benneth*, unlike Stokes and Hawke.]

¹¹⁰ M. Combellack-Harris, *A Critical Edition of Beunans Meriasek*, vol. i, pp. 15-19.

¹¹¹ Combellack-Harris also suggests a link with Rhys ap Tudur, *ibid.*, p. 59. Nonetheless, Teudar seems to have been a traditional character whose name conveniently coincided with that of the Tudor dynasty.

¹¹² *Beneth* BM 31, *benneth* 53 (4 exx.), *bennath* 63, *Banneth* 201, *bennethow* 50, *bannothow* 46.

¹¹³ *Banneth* BM 535 (4 exx.), *banneth* 506 (14 exx.), *bannothov* 496.

showing pre-occlusion does not reoccur outside these first ten pages. It is worth pointing out that the vowel of the stressed penult is written <e> in all cases except two in these re-copied pages but is exclusively written <a> in the rest of the manuscript. The copyist apparently "corrected" the spelling in all but these two cases. It would seem that these pages must have been altered by a second scribe – and therefore that the three cases of the word *bedneth* must date from a later period than the original.

It seems clear that the manuscript of *Beunans Meriasek* did not contain a single example of pre-occlusion when it was composed in its final form in 1504. If this had been so, many other common words would have been affected. It is not possible to say whether or not it was deliberately suppressed as a vulgar form of speech at this time, but it might be reasonable to presume a certain minimum level of scribal conservatism. It should be concluded nonetheless that pre-occlusion is unlikely to have occurred before the end of the fifteenth century.

The earliest place-name evidence for pre-occlusion that Williams quotes from Oliver Padel's *Cornish Place-name Elements* is *Pednapill* in Feock from 1597.¹¹⁴ It is likewise possible that a certain degree of conservatism delayed the name from being realised in this way, but more than half a century would perhaps be an over-estimate. Without reference to Oliver Padel's unpublished collection of place-name material, it is necessary to fall back on the view that place-names were not normally written with pre-occlusion before the end of the sixteenth century.¹¹⁵

The only example of pre-occlusion known to me that is securely dated in the first half of the sixteenth century is apparently unknown to Nicholas Williams. Andrew Boorde went on a tour of Cornwall in 1542,

¹¹⁴ CPNE, pp. 177-8, 185-6, 290, quoted in Williams, *Cornish Today*, § 9.4, p. 72.

¹¹⁵ The hundreds where Cornish was spoken the longest may provide especially good evidence, since there can be no doubt that these would have been monoglot communities at the time of pre-occlusion, ca. 1530-40. See P.A.S. Pool, *Place-names of West Penwith*.

clearly unable to speak Cornish but enthusiastic about recording some spoken sentences in a tavern where it seems that he ordered food and stayed the night. These were published in his "Fyrst Boke of the Introduction of Knowledge" in 1547.¹¹⁶ Only one of these sentences contains pre-occlusion (my underlining): -

Syrra, me euyden gewel ages commaundement why

It should be noted, incidentally, that the word *gewel* "to do" probably shows /y:/ before it became /i:/, which is a feature of earlier Middle Cornish.¹¹⁷ The verb in the third person singular corresponds to the pre-occluded form *vydn* in CW.¹¹⁸

Although it is highly unlikely that Boorde heard the phenomenon at its inception, it could not have been old. The *Tregear Homilies* of 1555-8 and the added catena SA of ca. 1570-1600 do not contain any examples of pre-occlusion, despite the orthography being substantially less conservative than the earlier plays. Williams asserts that pre-occlusion occurs in the word *mamb* in SA.¹¹⁹ The complete sentence, however, seems to suggest otherwise: -

lowarth mamb [a omitted] wore e flehis the benenas erall the vaga...

The omission of the relative particle is not common in the *Tregear Homilies*, neither in Tregear's own translation nor that of the second scribe. Moreover, it is rare in Middle Cornish as a whole. Considering that there is not a single other example in SA, though it is longer than the

¹¹⁶ Sentences edited by W. Stokes, "Cornish Phrases", RC 4/5 (1878-1880), pp. 262-264.

¹¹⁷ Alternatively, it may show metathesis for **gweel*.

¹¹⁸ *vydn* CW 1710 (4 exx.) Noted by George, *Cornish for the Twenty-First Century*, p. 63.

¹¹⁹ TH 59.24 [SA]. See § 1.2.2 above, and D.H. Frost, *Cornish Studies* 11 (2003), series 2, pp. 291-307.

preceding twelve homilies, this irregular instance of $m > mb$ may perhaps be associated with an unusual contraction. The oral quality of the omitted vowel of the particle could have been transferred to the preceding consonant, resulting in a partial de-nasalisation $/mm/ > /mb/$. A possible alternative is that it may have been an epenthetic effect between the consonants [m] and [w] from * *lowarth mam(m) wore...*¹²⁰ Although isolated in Cornish, a comparable effect occurs commonly in Breton, e.g. B. *lammāt > lampāt* “to jump”, V. *memb* < Fr. *mêmes*.¹²¹

Whilst this is a highly interesting, isolated phenomenon that affects original $/mm/$, it is almost certainly not related to pre-occlusion. The representation *mb* rather than *bm* does not seem like an obvious scribal error, but a rendering of an isolated speech error in writing. Pre-occlusion is the accretion of a brief homorganic stop before a nasal consonant as a result of an early restriction of the airflow. The change $[mm] > [mb]$ is precisely the opposite. Just as pre-occlusion does not account for the group $/lm/$ found in *helma* and *holma* above (by either theory), neither is it responsible for the variation $[mm] > [mb]$. Subsequent metathesis after pre-occlusion of the consonant is inherently unlikely because no other occurrence of such a change is found, nor any example of pre-occlusion in the homilies themselves. Unlike CW, there is no evidence that the hand-written homilies were ever re-edited.

The largest number of examples of pre-occlusion in a Middle Cornish text is found in the *Creacon of the World* by William Jordan, dated 1611. Despite this date, it is clearly not a document of Late Cornish, but an adaptation of an earlier exemplar. It contains a section which is lifted almost directly from *Origo Mundi*, the first play of the Cornish *Ordinalia* trilogy. Indeed, pre-occlusion may be the best

¹²⁰ PHC, § 17.3.2, p. 411. George’s analogy Eng. *lamb* [lam^b] > [lam] is the reverse, however.

demonstration that it cannot be a Late Cornish document in essence. Although 78 examples occur (compared to only three identical examples in BM) it has not been widely noted that these are the tiny minority of words where pre-occlusion might be expected to occur. Ignoring variations in the orthography, only 32 different words are affected, of which the following are a selection of the most common: -

<i>hebma</i> (2)	<i>hemma</i> (16), <i>hema</i> (5), <i>henma</i> (4)
<i>hedna</i> (4)	<i>henna</i> (104), <i>hena</i> (4)
<i>lebmyrn</i> (5)	<i>lemyn</i> (30)
<i>a lebma</i> (2)	<i>a lemma</i> (9), <i>a lema</i> (9), <i>alema</i> (2), <i>alemma</i> (1)
<i>thybma</i> (2)	<i>thema</i> (2), <i>zymmo</i> (3), <i>thymo</i> (19), <i>thyma</i> (17), <i>thymmo</i> (5), <i>thymma</i> (7)
<i>thybm</i> (1)	<i>them</i> (3), <i>zym</i> (6), <i>thym</i> (54)
<i>obma</i> (1)	<i>oma</i> (2), <i>omma</i> (68)
<i>idn</i> (1), <i>vdn</i> (5), <i>udn</i> (1)	<i>un</i> (1), <i>vn</i> (14)
<i>vidnaf</i> (1), <i>vidna</i> (1), <i>vydnaf</i> (1)	<i>manaf</i> (3), <i>mannaf</i> (3), <i>mannaff</i> (1), <i>vannaf</i> (10), <i>vanaf</i> (2)
<i>vidn</i> (4), <i>vydn</i> (4), <i>yfydn</i> (1)	<i>vyn</i> (48), <i>fyn</i> (1)
<i>in badn</i> (1)	<i>in ban</i> (6), <i>yn ban</i> (3)

Ignoring items that appear only once, the only word that occurs with pre-occlusion in CW more often than it does without is *lodn* "beast"

¹²¹ HPB § 1118- 9, pp. 785-7. The opposite change is given in Breton, so these changes may be seen as part of a sporadic tendency in both directions. Compare *henma* > *helma*, *hemma*, at § 2.3 above.

(three times) for *lon* (once), hardly a common word.¹²² Some words do not show as severely disproportionate a distribution as the rest, but these occur only five or six times each at most. If, in addition, one were to compute all the words that *could* have been pre-occluded, then these 78 examples would be statistically insignificant. On reading the text, it becomes obvious just how infrequent they are.

This leads to the inescapable conclusion that CW is a document of earlier Middle Cornish but has been heavily edited during the Late Cornish period, presumably by Jordan himself, of whom nothing else is known.¹²³ Indeed, it is most likely that the bulk of the work was assembled at much the same time as *Beunans Meriasek*, if not earlier. At that time, it seems unlikely that it could have contained examples that showed pre-occlusion. The later editor, perhaps Jordan, appears to have made an effort to modernise the play, but did not do so consistently.

The problems for dating the beginning of pre-occlusion are several. Firstly, the bulk of the Middle Cornish evidence is not securely dated, because both BM and CW seem to contain pre-occlusion only as a result of later re-editing. It is certain only that CW was re-edited and given stage directions between perhaps 1600 and 1611. The effects of this upon the manuscript can only be surmised. The absence of pre-occlusion in TH, and especially the later catena SA, does not mean that it had not arisen in speech, only that it was not accepted in the formal register at that time. After all, TH was an ecclesiastical document and its scribe may well have been a member of the older generation. Boorde's sentence quite clearly shows that by 1542 pre-occlusion *was* already present in speech. It is likely that the younger generation at least spoke with pre-occlusion in this period, although the phenomenon was probably young.

¹²² *lodn* CW 1571 (3 exx.), *lon* 1569. The word occurs because of the Lamech story.

I suggest that, since Middle Cornish orthography was broadly systematic rather than uniform, comparable perhaps to the fluidity of Shakespearean English spelling conventions, it may have been relatively receptive to the representation of phonological innovations. All the same, the level of orthographical conservatism is difficult to establish for certain. The absence of written pre-occlusion in the original corpus of BM suggests that, if it had developed in speech, spelling habits had not yet been affected. All things considered, it seems likely that pre-occlusion could not have developed more than a generation before Boorde's time.

There is no reason to doubt the date of BM, although Combellack-Harris suggests that it was partly assembled from elements of pre-existing plays.¹²⁴ This might have been expected to result in inconsistent revision, as seen in CW, which is not discernible in BM. In any case, the fact that pre-occlusion was not introduced sporadically at this time limits the usefulness of that argument here. BM also contains original writing in a colloquial and somewhat proletarian style. I cannot believe that the author would have deliberately and consistently excised pre-occlusion from his work, had it been a fully developed feature of Cornish in 1504. It is highly probable that the sound change developed over several decades, so perhaps the best tentative dating that can be given for pre-occlusion would be the 1540s and 1550s. It seems that this articulation of /nn/ and /mm/ as [ᵈn] and [ᵇm] was not generally represented in writing for at least a generation, which fits with what might be expected in terms of orthographical conservatism, as well as quite possibly the conservative speech of older speakers, perhaps avoiding a perceived speech defect. In summary, pre-occlusion dates from roughly the mid sixteenth century.

¹²³ W. Stokes, "Gwreans an Bys: the Creation of the World", *Transactions of the Philological Society* (1864), part iv., preface, p. 4.

¹²⁴ M. Combellack-Harris, *A Critical Edition of Beunans Meriasek*, vol. i, 36ff, especially pp. 36-8, 43, 45-8 & Appendix F, pp. 120-30. The Life of Silvester, in particular, is integrated into the play.

2.8. Pre-occlusion in Late Cornish

Pre-occlusion is represented widely in the various, fragmentary records of Late Cornish, both by native speakers and by antiquarians who had learnt the language. These writers wrote Cornish very differently to the way it had been spelled in the Middle Cornish period. This fact seems to have had a bearing upon the spellings used to represent pre-occlusion.

From the beginning of the sixteenth century, the orthographical representation of Cornish changed markedly, showing that knowledge of the orthographic traditions of Middle Cornish was lost. However, the *ad hoc* spellings used by Boorde, in the English play *The Image of Idleness*, and by the clerks in the court cases in Star Chamber and the Exeter Consistory Court, do not differ markedly from those found in Late Cornish.¹²⁵ These date from 1542 to 1572, a period that encompassed the re-writing of the first 270 lines of BM and the original composition of TH in 1555. For instance, *deese meese te lader* from the case in Star Chamber in 1547 could have been written in a story such as *John of Chyanhor* by Nicholas Boson in 1667.¹²⁶ The spellings in CW that date from its re-composition in 1611 also resemble these various orthographies, unlike the layer that is clearly Middle Cornish. The use of final <e> to mark a long vowel is marked in the catena added to TH (SA), which tends to suggest the increasing influence of English practices. Although JT dates from 1555-8, SA dates from after 1570, perhaps 1583-1600.¹²⁷ If the earlier orthographical traditions were gradually abandoned between the end of the sixteenth and beginning of the seventeenth century, one would expect any remaining reluctance to write pre-occlusion to evaporate. One

¹²⁵ A. Boorde, *The Fyrst Boke of the Introduction of Knowledge*; H. Jenner, "Some Miscellaneous Scraps of Cornish", RRCPS 96 (1929), pp. 241-4; *Star Chamber Proceedings*, Henry VIII, 8 (1547), pp. 171-5; J.T. Hoblyn, "In English & Not in Cornowok", OC 2/11 (1936), p. 11.

¹²⁶ CWBF, pp. 14-23.

¹²⁷ See the reference at § 1.2.2 above.

would expect some writers to be conservative, whilst others would innovate. This is exactly what in fact seems to have happened.

The exception to this expected state of affairs must have come about because of a fundamental difference between two kinds of Late Cornish writers. Most antiquarians were not native speakers and the quality of their Cornish reflects this. Lhuyd is the extreme case, who not only adopted his own unique attempt at a phonemic spelling system but also tended to fill gaps in his knowledge with Welsh. But more importantly from the perspective of Late Cornish sound changes, the antiquarians either had direct access to Middle Cornish manuscripts or else were indirectly influenced by such material through their mutual correspondence.¹²⁸ Consequently, a sound change such as pre-occlusion might not always be written by these writers. They had little knowledge of the phonology of the language, of course, so they had to rely on the colloquial sources and manuscripts from which they had learnt it. Sadly, only a small proportion of Late Cornish is the work of native speakers.

Although the dividing line between Middle and Late Cornish is somewhat arbitrary, it is mostly these orthographical differences that separate the two periods.¹²⁹ Some of the late Middle Cornish sources cited above could therefore reasonably be considered Late Cornish, although it would logically follow that the two periods could even overlap. It may consequently be unwise to consider that long consonants that showed pre-occlusion at the beginning of the Late Cornish period were essentially any different from how they had been in late Middle Cornish.

¹²⁸ Lhuyd in particular compiled a great deal of his vocabulary from *Voc. Corn.* as well.

¹²⁹ For this reason, it seems doubtful to me that George's methodology of directly comparing Middle and Late Cornish spellings can be reliable in determining whether or not there was a Prosodic Shift, especially since the majority of the material was written by native speakers of English, not Cornish.

Carew recorded three words in his "Survey of Cornwall" of 1602, only one of which, *ednack* "eleven", does not occur in CW.¹³⁰ He also gives the phrase *meea navidna cowzasawznek* "I can (*leg.* will) speak no Saxonage", showing the first person singular **vidna* < **minnaf* "want" of the same verb that appears as *euyden* [= **e vyden*] < **myn* in Boorde's sentence of sixty years earlier.¹³¹ An English play of 1632, "A Northern Lass" by Richard Brome, includes a sentence of Cornish, presumably recorded likewise from natural speech: -

Peden bras, vidne whee bis cregas?

Fat head, will you be hanged?

This shows the second person plural of the same auxiliary verb, as well as the further change /penn/ [pe^dn] > /pedən/ that seems to be a common feature of stressed monosyllables in Late Cornish. The schwa vowel /ə/ appears to have been inserted by epenthesis, causing /^dn/ < /nn/ to become /dən/ and the unexploded stop to be realised as a full plosive. The phoneme /^dn/ would then disappear, replaced here by the separate phonemes /d/ and /n/, with which it would consequently fall together. In the process, the monosyllable would become a disyllable.

On the other hand, Boorde's *euyden* [= **e vyden*] is perhaps the earliest recorded instance of the sound change (since those in BM probably arise from re-editing), but this also shows the inserted vowel. It is likely that early spellings represent /^dn/ but that the difficult cluster produced by pre-occlusion was later simplified by epenthesis. It is difficult to say exactly when this might have become phonemic and thus

¹³⁰ R. Carew, *Survey of Cornwall*, p. 126-7, *tedna* (< *tenna*) "to pull", *ednack* (< *unnek*) "eleven", *pedn* (< *pen*) "head".

¹³¹ See § 2.7 above.

to determine which spellings mean /^dn/ and which mean /dən/.¹³² There could presumably be no intermediate stage, since [dn] is presumably impossible to articulate without either failure to explode the first element [^dn] or else the insertion of an epenthetic vowel to aid articulation of the consonants [dən]. The fact that LC. *vydn* occurs in CW, dated 1611, may show that epenthesis had not arisen before this date.¹³³ However, it is also possible that the spelling simply failed to represent epenthesis, even though the late Cornish portion of the play is not at all orthographically conservative: if the word had become disyllabic by this date, there is a general likelihood that it would have been so written. In fact, there are no examples in CW in which an epenthetic vowel is so written.

This problem is especially difficult to solve because stressed monosyllables continued to be written without an epenthetic vowel throughout the Late Cornish period. This was true of both native speakers and antiquarians.¹³⁴ For instance, James Jenkins writes *vedn* in ca. 1700, while Edward Chirgwin wrote both *veddn* and *veden* in 1698.¹³⁵ These were both native speakers. Nicholas Boson's writings are fairly consistent in writing pre-occlusion in monosyllables, adding an apostrophe in *ved'n* on all three occasions in *John of Chyanhor* to show hiatus between the invasive stop and the nasal.¹³⁶ This may be reliable evidence for epenthesis by ca. 1667, although Nicholas Boson was not a native speaker. Elsewhere he varies between writing the epenthetic vowel in *pedden* (< MIC. *pen* "head"), *idden* (< MIC. *un* "one") and *vedden* (< MIC. *vyn* "wants") and omitting it in *pedn*, *an dadn* (< MIC. *in dan*

¹³² The same would of course have been equally true of /^bm/ > /bəm/.

¹³³ *vydn* CW 1710 (4 exx.).

¹³⁴ It is not always easy to distinguish these for certain, as in some cases the native competency of a writer is unknown. John Keigwin of Mousehole is an example of an antiquarian born in 1641 in what would have been one of the strongholds of Cornish, yet he had access to MIC. manuscripts and avoids writing pre-occlusion. Even pieces by probable native speakers often exist in antiquarian copies.

¹³⁵ R.M. Nance, "The Cornish Rhymes of James Jenkins of Alverton", OC 4 (1948), pp. 268-73, "Edward Chirgwin's Cornish Song", OC 4 (1947), pp. 210-3.

"under") and *vedn*.¹³⁷ Thomas Boson's orthography is similar, although he never writes an epenthetic vowel. He also has a tendency to write an English silent letter <e>, e.g. *war a gen pedne* "against us" and *dadne* "under".¹³⁸ (Oddly, this does not mark a long vowel.) John Boson's orthography resembles Nicholas Boson's, although the fact that he writes *erbyn* "against" (< Brit. *arepennū*) without pre-occlusion shows that he may well have seen a Middle Cornish manuscript, perhaps in the possession of his correspondent William Gwavas.¹³⁹ Elsewhere he writes *vor pidn* "against" and *war gun pidn* "against us", which show the Late Cornish substitution of *war* "on" for archaic *er* "against" in the compound preposition.¹⁴⁰ It is remarkable that the archaic i-affection in the oblique case has not been reshaped by analogy with *pedn* to give **war gun pedn*.

One might equally expect that forms such as *tubm* "hot" (William Gwavas, 1728) might have sometimes occurred with an epenthetic vowel in Late Cornish.¹⁴¹ In fact, this is almost never the case, despite the fact that words with /^bm/ in stressed monosyllables are well attested. There are only two cases that I have been able to identify. The first of these is John Boson's *powtooben* "hot country", corrected by Tonkin in his version to *Pow-Tubm*.¹⁴² Borlase gives *godrabben* and *godrabm* "pain, cramp" in his vocabulary.¹⁴³ While strictly not a monosyllable, this evidently had final stress, possibly as a result of being composed of prefix *go-* + **trabm*, although the etymology is obscure. It is therefore reasonable to treat it as being effectively a monosyllable. The fact that both words show a further dissimilation [m] > [n] in final position seems to guarantee that this is a

¹³⁶ CWBF, pp. 15-16, lines 2, 6, 8 [NB]. Lhuyd's version has no apostrophes.

¹³⁷ CWBF, pp. 25-31, 4.2, 1.2, 2.1, 1.5, 7.10, 3.2 [NB].

¹³⁸ CWBF, pp. 41-2, Lord's Prayer, line 5, Ten Commandments, 2.3 [TB].

¹³⁹ CWBF, pp. 45-6, line 12 [JB]. For etymology, see HPB, § 166, p. 595.

¹⁴⁰ CWBF, pp. 55, Ten Commandments, 9.1, Lord's Prayer, 4 [JB]. From the time of BM, *erbyn* was always replaced by *warbyn*, since *erbyn* in CW probably remains unedited from the earlier material.

¹⁴¹ Pryce, ACB, Ff3v.; Polwhele, "The History of Cornwall", v, p. 36.

¹⁴² CWBF, pp 43-5, line 24 [JB].

¹⁴³ W. Borlase, *Antiquities, Historical and Monumental, of the County of Cornwall* [headwords].

genuine epenthetic vowel.¹⁴⁴ The usual spelling is seen in Lhuyd's *kabm* "crooked", *tabm* "bit, morsel", Borlase's *brabm* "ventris crepitum" (i.e. "fart"), *d(h)ebm* "to me" and *plobm* "lead".¹⁴⁵ However, symmetry would demand anyway that epenthesis could occur even if it was not written, if this was the case in words with final-*d(e)n* in the same documents.

It seems probable that all instances where pre-occlusion fails to occur in Late Cornish where it would be expected can be ascribed to the fact that both antiquarians and native writers had access to Cornish manuscripts. William Rowe records some 26 pre-occluded items, some with an epenthetic vowel and some without. It is clear that he drew on earlier written Cornish, since he has *hema* with no pre-occlusion (also found in CW, for example), but *hedda* (< *hedna*) "that one", *radn* (< *ran*) "part" and *leben* (< *lemyn*) "now".¹⁴⁶

Rowe's form *hedda* "that one" shows a further development in disyllables in which the nasal quality of /^dn/ is entirely assimilated to the invasive unexploded stop. This probably produced /d/ rather than /dd/, since there were no other double voiced stops in the system. The same occurs in the writings of Nicholas Boson, for example *obba* (< *omma* "here"), [*h*]*edda* (< *henna*) "this one" and *lebben* (< *lemmyn* "here"), although he also writes *Kibmiaz* (< *cummyas* "permission"), *hedna* and *lebma* (< *alemma*).¹⁴⁷ In the section of *John of Chyanhor* which still exists in Nicholas Boson's spelling (the later part survives only in Lhuyd's partly phonetic orthography), Lhuyd restores *ybma* (< *omma*) for Boson's *obba*, *hedna* (< *henna*) for *edda* and *Lebmen* (< *lemmyn*) for *lebben*.¹⁴⁸ In

¹⁴⁴ On further dissimilation /m/ > /n/, see § 2.8 below.

¹⁴⁵ *kabm* Lhuyd, AB 9b, *tabm* 13c; W. Borlase, *Antiquities, Historical and Monumental, of the County of Cornwall* [headwords *bram*, *brabm*, *debm*, *dheb*].

¹⁴⁶ R.M. Nance, "The Cornish of William Rowe", OC 2/11 (1936), pp. 32-6; *hema* CW 1104.

¹⁴⁷ CWBF, pp. 14-16, lines 2, 10, pp. 24-31, lines 1.4, pp. 14-16, lines 3, 6, 8 [NB].

¹⁴⁸ CWBF, pp. 16-19, lines 2, 10, 11 [Lhuyd]

the writings of Thomas Boson there is an example of *leben* "now".¹⁴⁹ The same assimilation /^bm/ > /b/ is seen in Pryce's spelling *lebben*.¹⁵⁰

One curious example related to *obba* < *obma* (< *omma*) occurs in a rhyme by William Allen, a slightly different version of which is given by Pryce.¹⁵¹ Here the word occurs uniquely as *uppa*, which rhymes in Allen's version with *drubba*, an apparent nonsense word of uncertain meaning. It is reconstructed by Nance, however, as a contraction of **doroy (e) omma* "bring (it) here", evidently with pre-occlusion. It is difficult to see why *uppa* should be so spelled, but irrespective of the truth of Nance's inspired reconstruction, it must be intended to rhyme with *drubba*. Both words presumably contain medial /b/, in which case *uppa* is a mere variant spelling of *obba*. It is possible that unusually tense articulation associated with pre-occlusion may have played a part in it being mistaken for /p/.

Surprisingly, all Late Cornish sources exempt the word *hem(m)a* from pre-occlusion, suggesting that the antiquarians derived it from Middle Cornish rather than spoken Late Cornish.¹⁵² Most of the instances occur in the writings of the Bosons and William Rowe, who almost certainly had access to various manuscripts. As a result, they may not have been aware that it should have been pre-occluded. Apart from the two instances of *hebma* in CW cited above (which should be considered Late Cornish revisions of a Middle Cornish text) I have not been able to find any other instance of *hebma* or **hebba*, although they presumably must have existed in the spoken language.¹⁵³

There seems to be some evidence of pre-occlusion of a corresponding unvoiced phoneme in a few words. The phrase *etta gon*

¹⁴⁹ CWBF, pp. 38-40, lines 5.4 [TB].

¹⁵⁰ Pryce, ACB, K1r-Bb4v. [see headwords].

¹⁵¹ R.M. Nance, "William Allen's Cornish Rhyme", OC 4/9 (1949), pp. 3256; Pryce, ACB, sig. Ff1r.

¹⁵² CWBF, pp. 25-31, lines 2.6 [NB], pp. 38-40, 5.6 [TB]; pp. 48, line 14 [JB].

¹⁵³ See § 2.3 & § 2.7 above.

colonow "in our hearts" occurs in Rowe's translation of Genesis III.¹⁵⁴ If the word division is amended to **ett agon colonow*, it is apparent that he has followed the Late Cornish practice of cutting off the personal ending of an inflected preposition. Since the root is clearly *yn* "in", this might derive from a form like the third person singular *ynno* "in him", where pre-occlusion gave **edna* > *edda* before the form was apocopated to give *ett* with final de-voicing.¹⁵⁵ However, Nicholas Boson gives *itna*, *ita* and John Boson has *eta* for the same word, which suggests that there may have been pre-occlusion of an unvoiced phoneme in a few words.¹⁵⁶ This might give the sequence MIC. *ynno* > LC. *itna* > *etta*.¹⁵⁷ The most interesting aspect of these forms is that they suggest that /^dn/ > /d/ may have had a de-voiced counterpart /^tn/ > /t/ in such words. John Boson also writes *behatna* "smallest" (< MIC. **byghanna* B. *bihannañ*).¹⁵⁸ Although provection is regular before the superlative ending in W. *teg* + *-af* > *tecaf*, this is less obvious in C. *tek* + *-a* > *tecca* B. *c'hwek* + *-añ* because the simple adjective often has final de-voicing anyway.¹⁵⁹ Consequently it seems that /nn/ had a de-voiced counterpart /n^h/ that could become /^tn/ under pre-occlusion and later /t/. The idea that /n^h/ in *ynno* > *itna* > *etta* was etymologically present is doubtful, but the de-voicing may have spread from superlatives to phonetically similar endings by analogy.

Another word of note given by John Boson is *sterradnou* "stars", which is interesting because it has <a> in the stressed syllable.¹⁶⁰ This is no doubt because MIC. *steren* gave LC. *sterran* with schwa in the

¹⁵⁴ R.M. Nance, "The Cornish of William Rowe", OC 2/11 (1936), pp. 32-6.

¹⁵⁵ *ynno* CW 2132.

¹⁵⁶ CWBF, pp. 25-31, 5.12, 8.5 [NB]; pp. 50-1, line 4 [JB].

¹⁵⁷ In Breton, the adverb *enta* "well (then)" (< PrimCB. **in ta* < **in da* by provection) gave rise to *eta* "then" by the assimilation of /nt/ > /tt/, comparable with /tn/ > /tt/ above. HPB, § 474, p. 345.

¹⁵⁸ CWBF, p. 51-4, line 16, [JB]. The form *bohatna* occurs in W. Borlase's vocabulary, in *Antiquities, Historical and Monumental, of the County of Cornwall*.

¹⁵⁹ CCCG, § 323, pp. 185-6.

¹⁶⁰ CWBF, p. 51-4, line 16, [JB].

unstressed final syllable.¹⁶¹ When the plural ending was added, this appears to have become /a/. It is also interesting because it shows that /nn/ was preserved in the unstressed syllable. When it became stressed in the plural form, /nn/ [nn] became [ˈn] just as it had when the sound change was new in the early sixteenth century. This demonstrates that pre-occlusion had become morphophonemic in Cornish. John Boson was not a native speaker and presumably heard the word in use.¹⁶²

An Act of Parliament of 1605 has *lavidnian* for a technical fishing term in Cornwall, meaning "sand-eels". It seems to be a plural of **lavyn* "blade" (W. *llafn*).¹⁶³ This should contain etymological /n/ rather than /nn/, so has presumably been re-modelled on the basis of the suffix *-yn*, which probably had /nn/. Oddly, Borlase gives *visnans* "lances, small long fishes taken out of the sands", which may be a corrupted form of the same word.¹⁶⁴ The fact that his form is not **vidnans* is of course unconnected with assibilation, which had occurred centuries earlier. A similar case is Nicholas Boson's word *fortidniez* "succeeded", which has pre-occlusion despite having an English root.¹⁶⁵ The phoneme /nn/ must have been assumed by analogy because the vowel is short, allowing the usual change /nn/ > /ˈn/ in the stressed syllable.

A further glossary of Late Cornish words was discovered by Andrew Hawke and edited in 2001.¹⁶⁶ This does not add much to the above, only twelve words containing pre-occlusion, mostly names of body parts and ecclesiastical vocabulary. The word *obskommineiis* "excommunicated", however, is interesting because the pre-occlusion does not occur in the expected stressed syllable, but unusual stress can be

¹⁶¹ Lhuyd, AB 49b.

¹⁶² P. Berresford Ellis, *The Cornish Language and its Literature*, p. 96.

¹⁶³ R.M. Nance, *A Glossary of Cornish Sea-Words*, pp. 106-7, NCED 1938, p.96.

¹⁶⁴ This is considered doubtful by R.M. Nance, *A Glossary of Cornish Sea-Words*, p. 170.

¹⁶⁵ CWBF, pp. 25-31, 7.9 [NB].

¹⁶⁶ NLW Bodewryd MS. 5E, ed. A. Hawke, "A rediscovered Cornish-English vocabulary", *Cornish Studies* 9 (2001), series 2, pp. 83-104.

presumed in the case of the prefix *ym-/om-*.¹⁶⁷ Uniquely, the nasal is entirely lost preceding a consonantal cluster. This also seems to occur on the second leaf in the word *pedgleen* "knee".¹⁶⁸ The process may have been hastened, however, to simplify the consonant groups [ʰmsk] and [ʰŋg] that would have arisen respectively in these compounds. In the examples cited above, the assimilation of the nasal was otherwise restricted to intervocalic position in examples such as *obma* > *obba*.

Rowe uses an unusual word *hendrez* which may be for **hunros* "dream" that seems to mirror the case of *mamb* TH (SA) discussed above.¹⁶⁹ Since pre-occlusion is normal in his translations, it might be superficially attractive to see this as a case of pre-occlusion and subsequent metathesis. Richard Carew gives a rhyme in his *Survey of Cornwall* that seems to contain a parallel instance:-

Truro, triueth eu

[owth] ombdina, [nyn] geueth try ru.¹⁷⁰

Truro, it's a shame,
shrinking, it won't have three rows.

In this case, the metathesis may have been an alternative to the process seen in *obskommineiis* above, to replace the awkward [ʰmd] with [mbd] in order to facilitate pronunciation. This is purely a sporadic change on a realisational level. The group [ʰnr] in *hendrez* could be seen as similar in this regard, but WCB. *hun* "sleep" has a long vowel, which would have been reduced to half-long in a compound. It contains /n/

¹⁶⁷ See Nance's comments, NCED 1938, Appendix II, p. 191. Hawke, Bodewryd MS. 5E (1r.a5), p. 7.

¹⁶⁸ Hawke, Bodewryd MS. 5E (2r.b6), p. 8.

¹⁶⁹ R.M. Nance, OC 2/12 (1936), pp. 25-7, line 13. The example *mamb* is discussed at § 2.7.

¹⁷⁰ R. Carew, *Survey of Cornwall*, p. 217. The insertions are my own.

rather than /nn/ and should not therefore undergo pre-occlusion. Instead, this appears to be a straightforward case of epenthesis [nr] > [ndr] and it is therefore coincidental that it resembles instances of pre-occlusion. A similar phenomenon is seen in the Welsh surname *Hendri* < *Henry* and commonly in Breton words such as *lampat* < *lammat* "to jump".¹⁷¹

By way of comparison, a further type of epenthesis is seen in Rowe's translation of Genesis III in the plural *delkyow* < *delyow* "leaves" *W. dail* B. *deil*, *delioù*.¹⁷² This form also occurs *delkiow derow* "oak leaves" in Edward Chirgwin's song.¹⁷³ The effect could perhaps be palatal, brought on by the following yod; however, a more likely explanation seems to be epenthesis [lj] > [lkj]. It appears that various similar changes arose to ease the transition between unusual groups of sounds that were occasionally juxtaposed. If so, it seems that *mamb* "mother" and *hendrez* "dream" are not connected with pre-occlusion.

The final document of vernacular Cornish was a letter written by William Bodinar in 1776 to Daines Barrington. He claimed in it that he had learnt Cornish while fishing at sea, had never seen a book in Cornish and was a fluent speaker, although it was not his first language. Since he had never seen antiquarian Cornish, his vocabulary must all have been derived from the vernacular living language.¹⁷⁴ Similarly, his spellings were entirely based on English, as he had never seen Cornish written. It is therefore instructive that his orthography does not significantly differ from much of the records of Late Cornish. The words in the letter that have pre-occlusion are *eden* "one" (< *udn*) < *un* and *leben* "now" (< *lemmy*), both of which have already been discussed above.¹⁷⁵

¹⁷¹ On this phenomenon, see HPB, § 1122, p. 788-9.

¹⁷² R.M. Nance, "The Cornish of William Rowe", OC 2/11 (1936), pp. 32-6, line 7.

¹⁷³ R.M. Nance, "Edward Chirgwin's Cornish Song", OC 4 (1947), 210-13.

¹⁷⁴ Although his syntax might have been affected by English being his first language, as was suggested by O.J. Padel and P.A.S. Pool, "William Bodinar's Letter", JRIC 7/3 (1975/6) [n.s.], pp. 231-6.

¹⁷⁵ The etymologies of these words are given at § 2.3 and § 2.1 above.

The evidence of Late Cornish is interesting firstly in confirming the systematic distribution of pre-occlusion in almost all expected instances (despite semi-learned hypercorrections and borrowings from earlier periods) and secondly in showing that the sound change was extended to de-voiced long consonants in *etta* and *behatna* cited above. Moreover, it provides many more examples of pre-occlusion than occur in the relatively few cases in BM and CW. Historic monosyllables such as *pen* "head" and *un* "one" probably became disyllables *pedden* and *idden* due to epenthesis /^dn/ > /dən/ and /^bm/ > /bəm/, although it is difficult to arrive at an exact date for orthographical reasons.

At the same time, the unexploded plosive element in /^dn/ and /^bm/ frequently assimilated the original nasal consonant in historic disyllables and polysyllables such as *lebben* < *lebmen* and *hedda* < *hedna*.¹⁷⁶ This also happened in a few other sporadic cases such as *obskommineiis* and *pedgleen* for phonetic reasons before consonants. The fact that so few words with etymological /n/ were affected, which must have come about by analogical re-modelling, points to the fact that pre-occlusion was in general a regular and predictable sound change. Lastly, the instances *sterradnou* and *lavidnian* indicate that it was a morphophonemic feature that occurred in a short syllable that was normally unstressed if the addition of a plural ending moved the stress to that syllable. Since *sterran* and **lavyn* must have had final /nn/ in order for pre-occlusion to occur, the inherited phonemes /nn/ and /mm/ must have remained unshortened in stressed and unstressed syllables.

¹⁷⁶ If the language had survived after 1800, perhaps this would have been generalised to all instances of pre-occlusion in the stressed penult where <dn> and <bm> were written in Late Cornish.

2.9. Occasional Variants in Late Cornish

There are a number of occasional spellings of pre-occlusion in the Late Cornish period that appear to show further sporadic or isolated developments that never affected more than a handful of instances of the sound change before the death of the language. The majority of these represent confusions between the sounds [n] and [m]. These were probably not chronological or regular developments and it is difficult to know whether such confusions became more frequent in the terminal phase of the language, since so few records survive.

The manuscript spelling *yskydmyow* in CW was corrected by Stokes to *yskydnyow*, but the reading with unusual <dm> has been confirmed by Hawke.¹⁷⁷ It may be simply that this scribe made an extra, unnecessary pen-stroke by mistake, but it may equally be a genuine dissimilation [ʰn] > [ʰm] in this position. Later, this scribe (possibly Jordan or an earlier editor) wrote *apydgnyan* "brains" (B. *empenn*), for which Stokes gives the correction *ampydneyan*.¹⁷⁸ Although the expected digraph *mp* is unrelated to pre-occlusion, the nasal in the prefix **ym-/om-* was removed by assimilation may testify to the fact that assimilations of this kind affecting the groups *mp*, *mb* and *bm* were common, irrespective of origin.¹⁷⁹ Secondly, *apydgnyan* shows the graph *gn*, unique in extant pre-occluded items. One possibility is that it represents either [ŋ], [nʝ] or [nʰ] where [n] would have been expected. The former seems implausible after [d], so perhaps the following yod caused an unusual palatalisation to occur here. This might be compared with the spelling convention in Fr. *digne* "dignified" (< L. *dignus*), *seigneur* "lord" (< L. *senior*), where both

¹⁷⁷ *yskydmyow* CW 964.

¹⁷⁸ *apydgnyan* CW 1705.

¹⁷⁹ HPB § 1118- 9, pp. 785-7. See § 2.7 above for related assimilations and dissimilations in Breton.

words have developed palatalisation. On the other hand, since there is no other graph of this kind, a scribal error is perhaps more likely.

Further confusion of the phones [m] and [n] as a result of pre-occlusion is seen in *John of Chyanhor*, where Nicholas Boson writes *kibnias* and *Kibniaz*, corrected by Lhuyd to contain <m> instead.¹⁸⁰ He also writes *lebna* once instead of his usual *lebma*.¹⁸¹ Likewise, John Boson's *powtooben* "hot country" has already been noted above.¹⁸² These are apparently not isolated mistakes, but possible indications of a general tendency towards sporadic dissimilation [ʰm] > [ʰn] in polysyllables and disyllables and [bəm] > [bən] in monosyllables. The single case of *yskydmyow* may show that the opposite dissimilation [ᵈn] > [ᵈm] was also possible, although there are no other examples.

It is worth reiterating that all these dissimilations immediately preceded the unstressed ultima, including those words which had been monosyllables, but became disyllables by epenthesis, such as in *(pow)tooben* < *Tubm* < *tom*. Especially in final position, [m] > [n] in the sequence of consonants /VbVm/ does not seem surprising, since a series of two labial sounds separated by a vowel is inherently awkward. The occasional dissimilation [ʰm] > [ʰn] (and perhaps [ᵈn] > [ᵈm] likewise) in intervocalic position may perhaps have resulted from a reduction in the articulatory vigour of the cluster.

In contrast to the dissimilation seen in *lebna* < *lebma* (< *alemma*), the opposite tendency towards assimilation could also be the consequence of a reduction in articulatory vigour. The original nasal was regularly assimilated in examples such as *lebba* < *lebma* (< *alemma*) and *hedda* < *hedna* (< *henna*), losing entirely the nasal identity of the phoneme. The idea that assimilation and dissimilation may coexist may be shown by the

¹⁸⁰ CWBF, pp. 15-16, lines 12, 13 [NB].

¹⁸¹ CWBF, pp. 25-31, 5.10, 6.7 [NB].

two different treatments *henma* > *hemma* and *henma* > *helma*.¹⁸³ If so, the latter treatment did not persist into Late Cornish. In the same way, it may be that forms such as *lebba* and *obba* would have come to dominate, rather than *lebna* and **obna*, since the medial clusters of the latter are not homorganic, if the language had survived into the nineteenth century.

Such a forceful articulation of the long phonemes /mm/ and /nn/ may originally have served to emphasise the shortness of the vowel while preserving the length of the syllable.¹⁸⁴ The most obvious reason for this would seem to be the shortening of half-long syllables, leading to the lengthening of the long phonemes /mm/ and /nn/ in order to preserve the distinctions of syllable length. Against this push-chain theory is the fact that very few words would have fallen together, and that homophones are not at all unusual in most languages in any event; furthermore, most long consonant groups had long ago been simplified, and no effect can be observed even in the other remaining long groups /ll/ and /rr/.

If the idea is sound, any Prosodic Shift that it implies may have taken some decades to develop, perhaps accounting for the successive stages of pre-occlusion, subsequent epenthesis in monosyllables, then either dissimilation or assimilation in turn. The existence of such a shift in Cornish would have profound effects far beyond pre-occlusion, and is a subject that warrants considerable future study. Nonetheless, the dating so far given for a Prosodic Shift, if any occurred, remains unproven as yet. Unless it can be shown to be an identifiable, systematic and profound set of changes to the prosodic system, which can be closely dated, it may be better not to use the term for a collection of gradual changes to the sound system of Cornish, which may after all be unrelated. Further work is needed on the corpus of Late Cornish for this to become possible.

¹⁸² See § 2.8 above.

¹⁸³ See § 2.3 above. If Williams' explanation is preferred, the example would not stand here.

¹⁸⁴ Compare the pre-aspiration that occurs in Scots Gaelic and Irish dialects.