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## NORTH WELSH LONG VOWELS FROM THE GOVERNMENT PHONOLOGY VIEWPOINT

**A b s t r a c t.** The aim of this article is to address the issue of vowel length in the northern varieties of the Welsh language. The approach used to perform the formal analysis was the theory of Government Phonology. This model was chosen because of its non-arbitrary assumptions concerning the syllabic structure. The data were collected from various academic works dealing with the pronunciation of Welsh and subsequently categorised so that it could be clearly presented and analysed. Further, the paper summarises previous analyses of Welsh vowel length giving a critical overview of different approaches. Their strong and weak points help formulate new hypotheses. The analysis proposed in this article assumes that Welsh long vowels obtain their structure as a result of lengthening. The structure of such a vowel is composed of two independent nuclei separated with an empty onset, which is induced by stress. The melody of the vowel is a result of spreading to an empty position which has to be licensed.

**Key words:** Government Phonology, Welsh, long vowels, lengthening, licensing.

### 1. INTRODUCTION

This paper sets out to investigate the phonological behaviour and constituent structure of long vowels in the dialects of North Welsh (NW henceforth). NW long vowels normally appear in stressed monosyllables. What is more, there are further restrictions as to what may follow the vowel. If it is followed by a voiced stop or a fricative,<sup>1</sup> it is always long. If, on the other hand, it is followed by a voiceless stop, a consonant cluster or a sonorant, it remains short.

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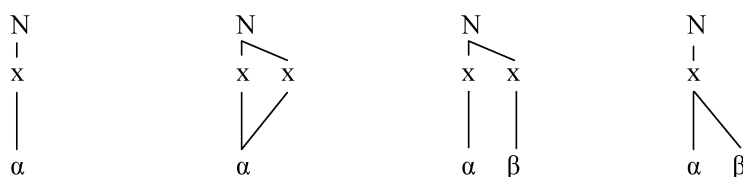
<sup>1</sup> Although most textbooks on Welsh phonology predict length before fricatives in the North, this point raises suspicion among contemporary researchers (Asmus and Anderson 2013). Bearing in mind that Welsh might be inadequately documented, this point requires further field research.

The analysis will be conducted in the Government Phonology framework whose tenets will be provided in section 2. Section 3 will describe phonological milieus of long vowel occurrences and provide relevant examples. Section 4 will summarise previous approaches to this phenomenon from different theoretical points of view. Section 5 will provide a new proposal for the constituent structure of NW long vowels.

## 2. THEORETICAL FRAMEWORK

The length of a segment in Government Phonology (Kaye, Lowenstamm and Vergnaud 1985, 1990; Harris 1994; Cyran 1997, 2010; Bloch-Rozmej 2008) is expressed as the number of skeletal slots the segment is attached to:

- (1) (a) short vowel      (b) long vowel      (c) diphthong      (d) short diphthong



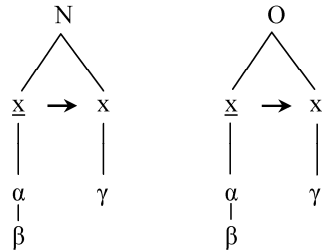
As illustrated above, short vowels and short diphthongs are associated with one skeletal slot each, while long vowels and (regular) diphthongs require two skeletal positions for their melodies to be attached to. What is more, long vowels and diphthongs, although contain two separate skeletons, are dominated by a single syllabic constituent, the nucleus.

The syllabic constituents, be it onsets or nuclei,<sup>2</sup> may branch if the two skeletal positions contract a left-headed governing relation called ‘constituent government’. Two skeletal slots may enter into a governing relation if they are adjacent and the governee is not stronger than the governor.<sup>3</sup> The strength is understood as the number of elements of which a segment is composed – the more elements it contains, the stronger it is:

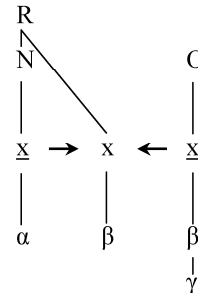
<sup>2</sup> The coda is not acknowledged as a constituent in Government Phonology, however the term will be used as a shortcut name for the ‘non-nuclear rhymal complement’.

<sup>3</sup> For the details of the Complexity Condition see Harris (1990: 273–275).

(2) (a) constituent government



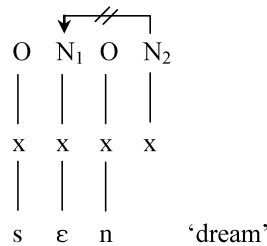
(b) inter-constituent government



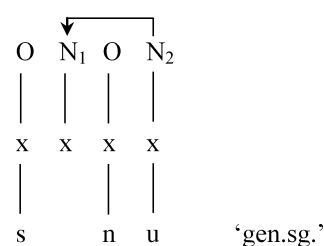
Conventionally, the directionality of government is indicated with an arrow and the head is underlined. (2a) presents constituent governing relations referred to as a branching nucleus and a branching onset. (2b), on the other hand, contains instances of both constituent and inter-constituent government—the nuclear head licences the rhymal complement (constituent government) and the onset governs the preceding ‘coda’ (inter-constituent government).

There is a special kind of governing relation—Proper Government (Charrette 1990: 237; Kaye 1990a: 313 and 1990b: 144). A nuclear position may remain silent (uninterpreted phonetically) if it is properly governed or licensed by parameter.<sup>4</sup> The example of the vowel-zero alternation in the Polish word *sen* ‘dream’ is an example of both possibilities:

(3) (a) licensed by parameter



(b) Proper Government



In the first example the final empty nucleus (FEN)  $N_2$  may remain silent because it is licensed by parameter. In the second example, the empty nucleus  $N_1$  remains silent because it is properly governed by an immediately following phonetically interpreted nucleus  $N_2$ . Importantly, the [ε] in *sen* cannot be properly governed by a vowel which is not phonetically realised itself. In reverse terms, a nucleus that is neither properly governed nor licensed by parameter will acquire some melody.

<sup>4</sup> See Kaye (1990b: 138) for details of the Empty Category Principle.

## 3. NORTH WELSH DATA

The vowel inventory of North Welsh consists of six peripheral vowels that can be either short or long, and of one central vowel schwa that can occupy both stressed and unstressed syllable positions but is never long:<sup>5</sup>

- (4)    i(:)            ɨ(:)            u(:)  
           e(:)                    ə            o(:)  
                                   a(:)

A peculiar characteristic of Welsh phonology in general is that long vowels may appear exclusively in the stressed syllable. What is more, the syllable must meet rather restrictive criteria before the vowel may enjoy its length. Let us consider a collection of examples (Jones 1984: 48, 52; Awbery 1984: 66–80, 2010: 359–363; Griffen 1989: 335–339; Thomas 1992: 323–332; Ball and Williams 2001: 40, 140, 141; Watkins 2002: 397–303):

- (5) (a) long vowels in open autosemantic monosyllables

[tɨ:]	<i>tŷ</i>	‘house’
[tɛ:]	<i>lle</i>	‘place’
[dɑ:]	<i>da</i>	‘good’
[to:]	<i>to</i>	‘roof’
[tɔ:]	<i>llw</i>	‘oath’

- (b) long vowels in closed monosyllables

[bɨ:d]	<i>byd</i>	‘world’
[bɔ:d]	<i>bod</i>	‘being’
[tɔ:g]	<i>llog</i>	‘interest rate’
[tɑ:ð]	<i>lladd</i>	‘kill’

- (c) long vowels in polysyllabic word

[tɨen]	<i>lliain</i>	‘cloth’
[tɨdu]	<i>lludw</i>	‘ashes’
[mɛðul]	<i>meddwl</i>	‘think’
[jɛχɨd]	<i>iechyd</i>	‘health’
[kəm'rɑ:g]	<i>Cymraeg</i>	‘Welsh’
[kə'tɨ:n]	<i>cytŷn</i>	‘agreed’

<sup>5</sup> This study's approach is not to distinguish between tense and lax vowels in NW. For an in-depth analysis of the qualitative factors, one is referred to Ball and Williams (2001: 36–39) and Mayr and Davis (2009).

(d) short vowels before a voiceless stop<sup>6</sup>, [m], [ŋ] and [t]

[het]	<i>het</i>	‘hat’
[ʔok]	<i>lloc</i>	‘sheepfold’
[sup]	<i>swp</i>	‘heap’
[tuʔ]	<i>twll</i>	‘hole’
[trum]	<i>trwm</i>	‘heavy’
[r <sup>h</sup> en]	<i>rheng</i>	‘row’
[muŋ]	<i>mwng</i>	‘mane’

## (e) short vowels before clusters

[gwerθ]	<i>gwerth</i>	‘value’
[kant]	<i>cant</i>	‘hundred’
[golχ]	<i>golch</i>	‘wash’
[serχ]	<i>serch</i>	‘love’
[urð]	<i>urdd</i>	‘order’
[ʃaft]	<i>siafft</i>	‘shaft’
[kreft]	<i>crefft</i>	‘trade’
[draχt]	<i>dracht</i>	‘draught’

## (f) long vowels before sibilant + stop clusters

[tri:st]	<i>trist</i>	‘sad’
[ku:sk]	<i>cwsg</i>	‘sleep’
[ko:st]	<i>cost</i>	‘cost’
[pa:sk]	<i>Pasg</i>	‘Easter’
[su:t]	<i>swllt</i>	‘shilling’
[gwa:t]	<i>gwallt</i>	‘hair’
[ha:t]	<i>hallt</i>	‘salty’

## (g) unpredictable vowel length before [n], [l] and [r]

[pen]	<i>pen</i>	‘head’
[ken]	<i>cen</i>	‘dandruff’
[he:n]	<i>hen</i>	‘old’
[ta:n]	<i>tân</i>	‘fire’
[tor]	<i>tor</i>	‘interruption’
[bɪr]	<i>byr</i>	‘short’
[du:r]	<i>dŵr</i>	‘water’
[se:r]	<i>sêr</i>	‘stars’
[pul]	<i>pwl</i>	‘attack’
[dul]	<i>dwl</i>	‘dull’
[pe:l]	<i>pêl</i>	‘ball’
[gwa:l]	<i>gwâl</i>	‘lair’

<sup>6</sup> However, a voiceless stop can be found to follow a long vowel in a handful of borrowings from English.

This more or less exhaustive list of contexts illustrates environments in which a vowel may or may not be long. However, this list requires some comments and clarifications. Examples of the type presented in (5a) are numerous. The syllable is stressed and no consonants follow. If a fricative or a voiced stop follows the stressed vowel, the vowel is long (5b). The situation in (5c) requires more attention. Not only must the vowel be stressed but also it has to be in the final syllable. No matter what follows (be it a voiced stop, a nasal or another vowel), if the stressed vowel is not in the final syllable, it may never be long in NW.

Interestingly, some single consonants preclude long vowels from the preceding position (5d). Voiceless stops, the labial nasal<sup>7</sup> and the lateral-fricative never follow a long vowel and therefore are similar in behaviour to clusters (5e)—both clusters of rising sonority (TR) and those of falling (RT) never appear after a long vowel. Nonetheless, there is a group of clusters that seem to evade this requirement (5f). They consist of a sibilant fricative [s] or [ʃ] followed by a voiceless stop. The lateral-fricative is considered a sibilant in this case for its phonetic (Ball and Williams 2001: 110) and phonological (Czerniak 2012: 89–91) behaviour. Finally, there are items like in (5g) where it is impossible to determine whether the vowel should be long or short based on the following consonant alone. The contrast might constitute an argument in favour of the claim that vowel length in NW is phonological rather than purely phonetic.

#### 4. ANALYSES AND APPROACHES

##### 4.1. WOOD (1988)

Section 3 summarised endeavours made by Sweet (1884: 412–414), Evans (1910: 6–8) and Morris-Jones (1913: 65–74, 1921: 23–29) to capture the regularities that marshal the distribution of vowel length in NW. Wood (1988), on the other hand, attempts to take a step further and give a Generative Phonological (Chomsky and Halle 1968) explanation.

The fact that long and short vowels occur in largely complementary distribution indicates the existence of some systematic relation between the vowel quantity and the environment in which it occurs. What determines the

<sup>7</sup> Except for a handful of grammatical words like [bim] *bûm* ‘I was’ or English loanwords like [ge:m] *gêm* ‘game’.

vowel length, he claims, is the remnants of consonant phenomena that occurred in the pre-Old Welsh period. He claims a vowel is lengthened under stress unless it is followed by a consonant cluster. In many cases what appears to be a (phonetically) single consonant is in fact (phonologically) a cluster. This explains why certain single consonants block lengthening and certain others do not (Wood 1988: 234–235).

(6)	historical consonant change		shortening effect	
	[p, t, k]	>>>	[b, d, g]	NO
	[pp, tt, kk]	>>>	[f, θ, χ]	NO
	[m, b, d, g]	>>>	[v, ð, γ]	NO
	[mb, nd, ŋg]	>>>	[m:, n:, ŋ:]	YES
	[ʔ, ʔʰ:]	>>>	[t, tʰ]	YES

Wood (1988: 233) proposes a Generative rule that determines the syllable length:

$$(7) \quad [+SYLL] \longrightarrow [+LNG] / \text{---}_{[+STR]} C$$

The above rule says that a syllable is long when it is stressed and followed by up to one consonant. It has already been specified that at no point in the history could this consonant be a geminate.

However logical this might seem, phonology has no direct access to history. All diachronic processes had their synchronic stages and could be analysed as such but the present state of a language's phonology cannot be accounted for by reference to the phenomena that occurred two thousand years ago (cf. Cyran 2012: 68–71). The only way to embrace Wood's assumptions summarised in (7) is to allow for some deal of abstraction—segments that preserve historical information which is detectible only through behaviour.

#### 4.2. GRIFFEN (1989)

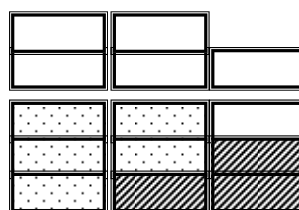
With those same assumptions concerning *semi-single* consonants (i.e. those, that derive from historical clusters or geminates) as Wood (1988), Griffen (1989) simplifies his explanation to the well-established observation that 'a stressed vowel is long when followed by no more than a single consonant'.

The Dynamic Phonology approach (e.g. Griffen 1985) treats a vowel as the basis of the syllable and a consonant as a constraint upon it. Vowels and consonants are not segments that a syllable is made of but sets of features

that are coarticulated within one syllable. Thus, the more consonantal (constraint) material we have at the end of a syllable, the less vocalic (basis) material we can maintain as illustrated below:

(8) dynamic syllable length

- (a) unstressed syllable
- (b) stressed syllable length
- (c) open syllable
- (d) closed with one C
- (e) closed with a cluster



The three horizontal blocks represent a maximal syllable length. The dotted blocks represent vowels, while the blocks filled with slanted lines represent consonants. In (c) and (d), the vowel occupies two blocks, while there is only one block in (e).

This simple illustration of Griffen's analysis explains why vowels must be short before clusters. However, this explanation is only correct if we assume that anything that follows a vowel belongs to the same syllable. Therefore, a VCC sequence must constitute one syllable in Dynamic Phonology irrespective of the character of the consonants making up the cluster.

Similarly to Wood (1988), Griffen (1989: 343–344) assumes that vowel length was established centuries ago when consonant clusters and geminates were simplified and the final portion of the syllable was deleted.

(9) preservation of short vowels in stressed syllables



This analysis constitutes a peculiar contradiction in terms. Although it satisfactorily deals with the vowel shortness before any type of cluster, it fails to account for the synchronic absence of long vowels before single consonants. The theory is oriented on the phonetic values of the syllable as a whole, stating that stressed syllables enjoy greater overall length. The whole argumentation falls apart when it comes to historical degemination—the syllable is shortened (degeminated) with no phonetic repercussion (i.e. the vowel does not undergo compensatory lengthening to repair the *three-block* structure). The principle that stressed syllable must be long should protect either the geminate or the long vowel. This approach, similarly to the one presented by Wood (1988), cannot deal with the problem of short vowels before single

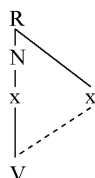


consonants without reference to diachronic processes. Hence, Dynamic Phonological analysis might be summarised as follows “a stressed syllable must always be heavy except when it does not have to”. It appears that both Wood (1988) and Griffen (1989) describe and explain the vowel length of the pre-Old Welsh phonological system rather than the one of Modern Welsh.

4.3. BUCZEK (1998)

Buczek (1998) did away with the branching nucleus in Welsh. Welsh was assumed to accommodate vocalic material in the so-called ‘Johnsen vowel’:<sup>8</sup>

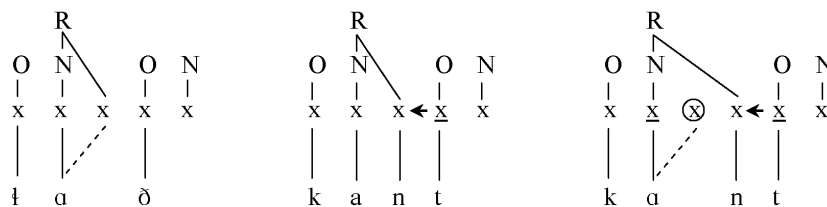
(10) Johnsen vowel



Harris (1997: 150) proposes that whether branching nuclei are allowed or not be a language-specific parameter. In this case, Welsh has the parameter set in “OFF”. This approach immediately deals with two phenomena: (i) why coda-onset clusters block vowel lengthening and (ii) why consonants in stressed syllables are longer if the vowel is short.

Why does coda-onset cluster block vowel lengthening? In Government Phonology, a segment, in order to exist, must be prosodically licensed—the rhymal complement (‘codas’) must be licensed by the following onset and preceding nucleus (Kaye 1990a; Harris 1994 and 1997). There can be no segment attached to a skeletal slot that is not dominated by a syllabic constituent. Let us consider the following structures:

(11) (a) long vowel (b) short vowel (c) impossible lengthening



<sup>8</sup> For Johnsen vowel see Kaye (1996: 158).

The vowel is long in (11a) and short in (11b) because the rhymal complement position to which the vocalic melody could spread is available in the former and occupied by a ‘coda’ consonant in the latter example. (11c) illustrates an impossible Welsh word \*[kɑ:nt]. As can be seen, the circled skeletal slot has no constituent to attach to, therefore it acquires no prosodic licence and cannot make a landing site for the vocalic material.

If we put the problem of short vowels before single consonants aside for a little while, we are presented with a structure that explains why a vowel can be long before a single consonant and short before a cluster. The answer boils down to the availability of the rhymal complement position.

However, the Johnsen vowel does not answer all the questions that have been asked so far: (i) why are vowels short before some single consonants? (ii) why are vowels short before branching onsets? (iii) why do unstressed vowels have to be short? (iv) how is it possible to have long vowels before FT clusters in NW? (v) why do open monosyllabic words have to end with a long vowel?

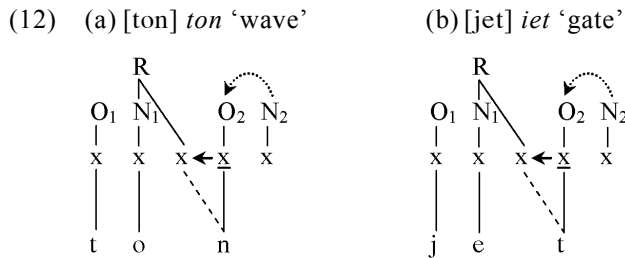
#### 4.5. BEDNARSKA (2011)

Bednarska (2011: 42) uses exactly the same device as Buczek (1998) to represent long vowels. Namely, the melody of the stressed vowel spreads to the rhymal complement position if it is available as in (11a). Moreover, she attempts a neat theoretical explanation why certain seemingly single consonants prevent vowel lengthening.

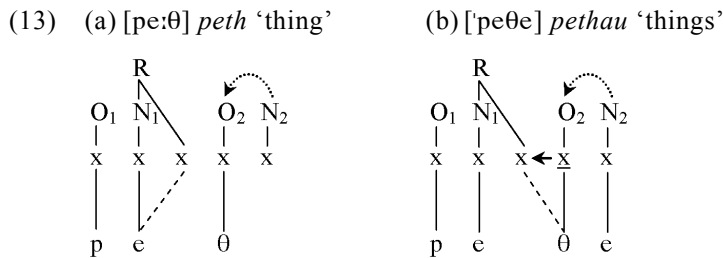
In order to account for the absence of long vowels before debatable consonants, Bednarska (2011: 42) utilises the notion of ‘virtual geminates’ developed by Ségéral and Scheer (2001)—a consonant can have the phonological structure of a geminate (and behave like one) despite being phonetically single.

In her analysis certain consonants (voiceless stops, [s] and [ʃ] and sonorants) incline towards gemination, hence they compete with the vocalic melody for the rhymal complement position. This competition is controlled by the licensing potential they are given. An onset is given its prosodic license from the following nucleus (Kaye 1990a: 311). However, not all nuclei are equally good licensors. Cyran (2010: 106) observes that empty nuclei are worse licensors than reduced vowels, while full vowels are strongest of all.

Thus, the words as *ton* ‘wave’ and *iet* ‘gate’ are represented as follows:



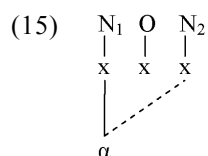
The vowel is short in both cases because the final empty nucleus has enough licensing potential to license a (virtual) geminate [n] or [t] which leaves no skeletal position for the vowel to lodge in. Therefore, a vowel is short before RT cluster or before a virtual geminate (both a coda-onset contact). Additionally, consonants obligatorily geminate when licensed by a full vowel which explains why there are no long vowels in a non-final syllable in NW:



In (13a) the final onset is licensed by an empty nucleus which is a poor licenser. In (13b), conversely, the onset is licensed by a full vowel which enables it to geminate leaving the vocalic material no skeletal position to spread to.

There is, however, a shortening environment that cannot be accounted for in the exact same way, namely TR clusters. Clusters of rising sonority are normally parsed as branching onsets. There is nothing in the structure of a branching onset that would disallow the preceding rhyme to branch. Indeed, such structures are not uncommon in Welsh (Awbery 1984: 86):



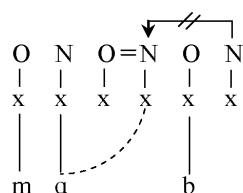
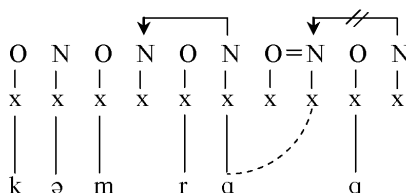
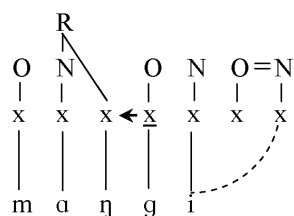


It should be borne in mind that there is no governing relation between  $N_1$  and  $N_2$  and vowel length is seen as spreading. In his analysis of stress-related phenomena in Italian, Larsen (1988) proposes that an additional CV slot be inserted to the word structure by stress. In GP terms employed in this study, a stressed nucleus is followed by the smallest licensing domain, which is an onset followed by a nucleus (both empty) which for convenience will be marked  $O=N$ , that is introduced by stress.

Let us consider how concatenative morphology influences stress placement and, consequently, vowel length (Griffen 1989: 335–339; Thomas 1992: 323–332):

- |          |                 |                       |               |
|----------|-----------------|-----------------------|---------------|
| (16) (a) | [mɑ:b]          | <i>mab</i>            | ‘boy, son’    |
|          | [maboɪd]        | <i>maboed</i>         | ‘childhood’   |
|          | [mɑˈbɔlaɪθ]     | <i>mabolaeth</i>      | ‘boyhood’     |
| (b)      | [kəˈmuɪnas]     | <i>cymwynas</i>       | ‘favour’      |
|          | [kəmuɪˈnaskɑr]  | <i>cymwynasgar</i>    | ‘helpful’     |
|          | [kəmuɪnasˈkɑrɯ] | <i>cymwynasgarwch</i> | ‘helpfulness’ |
| (c)      | [mɑm]           | <i>mam</i>            | ‘mother’      |
|          | [mɑŋˈgi:]       | <i>mam-gu</i>         | ‘grandmother’ |
| (d)      | [ˈkəmri]        | <i>Cymru</i>          | ‘Wales’       |
|          | [kəmˈrɑ:g]      | <i>Cymraeg</i>        | ‘Welsh’       |

Examples in (16a) and (16b) represent the prevailing pattern of penultimate stress. Compounding causes stress shift such that it always falls on the penultima. In (16c) and (16d) the second member attracts stress to the final syllable. Although, this situation is far less common in all varieties of Welsh, it is crucial for the existence of vowel length in NW. It should be recalled that long vowels in NW appear only in stressed ultima. Therefore, in line with the new representation of long vowels, words *mab*, *Cymraeg*, and *mam-gu* will be represented as follows:

(17) (a) *mab* ‘boy, son’(b) *Cymraeg* ‘Welsh’(c) *mam-gu* ‘grandmother’

Stress inserts a new O=N domain to the structure of the word creating a possible skeleton for the vocalic material to attach to. Spreading of the vocalic melody is represented with a dashed curve. This explains why long vowels are possible only in the stressed syllable –this is the only place with an extra skeletal position due to O=N insertion.

Interestingly, there are no open monosyllables that would terminate in a short vowel in Welsh. There are a handful of syntactically dependent items like *dy* [də] ‘your.sg’ or *fy* [və] ‘my’ which may in fact end in a short vowel. This will be attributed to the lack of the O=N domain. These grammatical words never receive primary stress, therefore there is no need for the O=N domain to arise and no skeletal position is available to the vowel. Consequently, these unstressed items are invariably short.

## 5.2. INSERTING STRUCTURE VS. STRUCTURE PRESERVATION PRINCIPLE

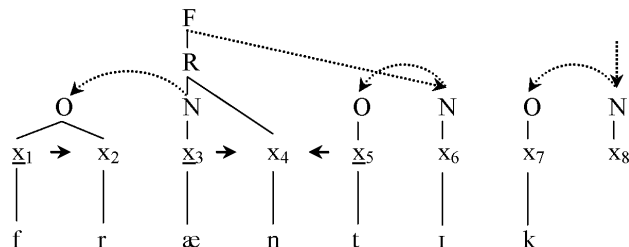
Structure Preservation Principle (Harris 1994: 187–193) and Projection Principle (Kaye 1990b: 138–139 and KLV 1990: 221–222) are restrictions on swapping governing relations. What is a governor cannot suddenly become a governee in the derived structure. For instance, consonant clusters cannot be coda-onset contacts at one times and branching onsets at others. What is more, branching nuclei involve a governing relation between the left-head member and its complement. This would suggest that suffixation and subsequent stress shift deprives the nucleus the ability to branch and the governed skeleton vanishes.

Since branching nuclei have been already discarded as constituents for NW long vowels, they will not be investigated any further. However, inserting an O=N domain does not create any governing changes and mismatches. Note that the two nuclei dominating the melodic material of the long vowel are not involved in a governing relation. The empty nucleus of the O=N domain is simply an ungoverned position which is phonetically realised through spreading.

### 5.3. LICENSING THE O=N DOMAIN

Licensing Principle (Kaye 1990a: 306; Harris 1994: 154–155 and 1997: 335) secures that there be no position in the structure without prosodic licensing. The only position which is not licensed by any other is the head of the domain—the vowel enjoying the primary stress. Any other position has to receive prosodic license from others on the relevant level of projection which is exemplified with the English word *frantic* below. Licensing is represented with dotted arrows:

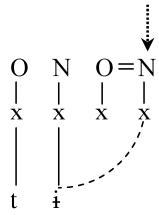
(18) licensing distribution



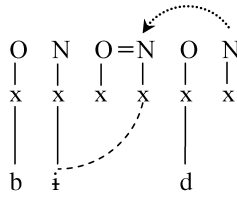
All skeletal positions except  $x_3$ , which is the head, has to and does receive prosodic licensing from their licensors. In line with Onset Licensing Principle, onset head  $x_1$  is licensed by the nucleus immediately to its right. The position  $x_1$  licenses its complement  $x_2$  through the governing relation. The skeletal position  $x_6$  is licensed by the head of the foot which is the head of the whole domain— $x_3$ . It licenses the preceding onset position  $x_5$  which in turn licensed the ‘coda’ position  $x_4$  through inter-constituent government. The ‘coda’ position is always doubly licensed—first by the onset ( $x_5$  in this case) and second by the rhymal head ( $x_3$  in this case). A peculiar case in point is presented by the position  $x_8$ . This is the Final Empty Nucleus which receives its prosodic license from the parameter. This is represented by the downward dotted arrow. And finally, having acquired its prosodic license from the parameter, FEN is able to license the preceding onset.

Similar structures should be available in any natural. Thus, the nucleus of the O=N domain should receive the prosodic license. Let us investigate a selection of examples:

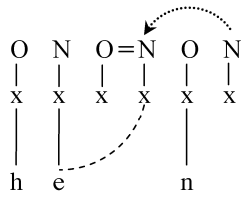
(19) (a) *tɨ* ‘house’



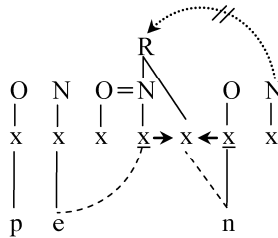
(b) *byd* ‘world’



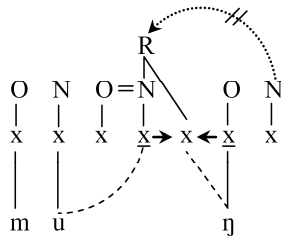
(c) *hen* ‘old’



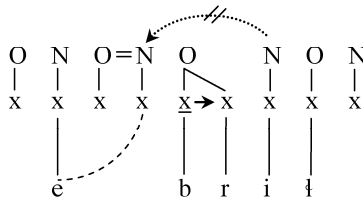
\*(d) *pen* ‘head’



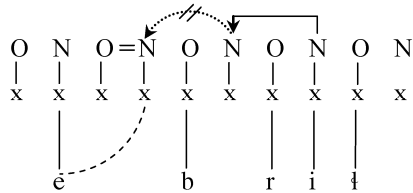
\*(e) *mwng* ‘mane’



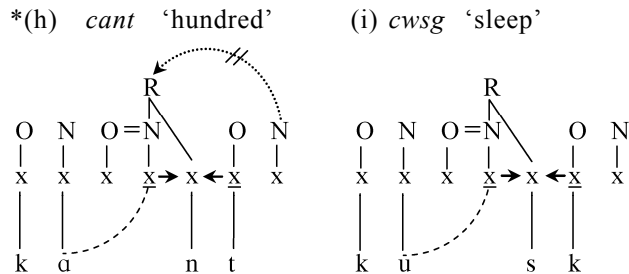
\*(f) *Ebrill* ‘April’



\*(g) *Ebrill* ‘April’







The most straightforward case is represented in (19a)—the empty nucleus of the O=N straight is licensed by parameter as FEN and does not require further licensing. For convenience, licensing paths were represented with dotted arrows for the nuclei in the O=N domains only. Examples (19b) and (19c) are slightly more complicated. First, the nucleus of the inserted domain receives its license from the immediately following nucleus which is licensed by parameter. It will be maintained that NW prosody allows the final nucleus to license the preceding one<sup>9</sup>. Second, there are two consecutive empty nuclei (the one of the inserted domain and FEN) and one is licensing the other. However, the first nucleus undergoes vocalisation and is no longer empty, thus not violating the Empty Category Principle.

The nucleus of the O=N domain cannot receive its license in (19d) and (19e) because of the governing relation that stands in the way. The final nucleus would have to license both the governing relation and the preceding nucleus. One assumption could be that the licenser would have to discharge a great amount of licensing potential and, being an empty nucleus, it cannot afford to do so. Another assumption is that the empty nucleus of the inserted domain would have to license the consonantal rhymal complement. For this reason, the O=N domain cannot be inserted if there is a coda-onset governing relation to its right. This solution can be applied to examples (19d), (19e) and (19h) alike irrespective of whether the governing relation is a legitimate coda-onset contact or a virtual geminate.

The case of TR clusters can be resolved in two ways. First, represented in (19f), we can assume that licensing cannot be done across a governing relation. Similarity to the proposition considering coda-onset clusters, the nucleus cannot discharge enough potential to license both the relation and the preceding nucleus. Second, represented in (19g), we can assume that TR

<sup>9</sup> For the literature on prosody / licensing phenomena the reader is referred to Williams (1989), Bosch (1996) and Iosad (2012)

clusters are rejected as possible branching onsets. It can be proposed that, unlike FEN, a properly governed nucleus that is situated between two independent onsets of a TøR cluster<sup>10</sup> is not able to license another nucleus that precedes it. Importantly, although the vowel preceding a TøR is stressed, it fails to occupy the final syllable, which would not allow it to lengthen. Be that as it may, both North and South Welsh ban long vowels before clusters of rising sonority.

A peculiar situation can be observed in (19i), which is used to represent words of the (5f) type, where the O=N domain is inserted and maintained before a coda-onset cluster. Since the consonants involved in this coda-onset cluster form a special kind of governing relation, it allows licensing the preceding empty nuclei in a less theoretically transparent way, which Kaye (1996) dubbed ‘magic licensing’. These clusters are always made of a sibilant ([s] or [ʃ] in NW) followed by a voiceless stop<sup>11</sup>. Hence, in cases like (19i) it is the special kind of a coda-onset governing relation where the sibilant rhymal complement may be licensed by an empty onset head.

## 6. CONCLUSION

The aim of this paper was to investigate the phonological behaviour of stressed vowels in the Welsh language spoken in the north of the country. Section 2 introduces assumptions of Government Phonology which is later used as a theoretical optic for viewing the issue of vowel quantity. Section 3 provides necessary data for further analysis alongside with prescriptive observations. Section 4 summarises previous attempts to explain the intricacies of NW vowel length conducted within different theoretical frameworks (Generative Phonology, Dependency Phonology and Government Phonology). Section 5 is devoted to a revised Government Phonological attempt to account for the vowel length phenomena. It was proposed that stress creates an additional Onset-Nucleus domain which is inserted immediately to the right of the stress nucleus giving the vocalic material a position to spread to. The vowel is realised unless the nucleus of the inserted domain fails to receive licensing either from the parameter (if it is the final

<sup>10</sup> This representation of Welsh TR clusters is used by Bednarska (2011) with no apparent explanation as to why vowels should be short before an empty nucleus.

<sup>11</sup> A thorough analysis of the ‘magic’ cluster types in Polish can be found in Cyran (2010: 280–285).

nucleus) or from the (ungoverned) nucleus to its right. Licensing from the neighbouring nucleus is hindered when a governing relation stands in the way. However, sibilant-stop clusters seem to allow a long vowel to precede. These clusters were said to form a governing domain that cross-linguistically license the preceding empty nucleus.

Although this paper proposes a uniform explanation for stress-related vowel length, it is not without shortcomings. First, it has to be theoretically clarified what repercussions inserting and deleting structure from within a domain may have. Second, the right-headed inter-nuclear licensing and prosodic mismatches at the right edge of the word in NW should be investigated more thoroughly. Third, the notion of ‘magic licensing’ and its application in NW should be scrutinised and clarified so as to avoid ‘magic’ in phonology and phonological analyses. Fourth, a study of all the aforementioned phenomena in different dialects of the North Welsh variety would give us a clearer view and, probably, more accurate conclusions.

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PÓŁNOCNOWALIJSKIE DŁUGIE SAMOGŁOSKI  
Z PERSPEKTYWY FONOLOGII RZĄDU

Streszczenie

Artykuł podejmuje problematyki związaną z długością samogłosek w północnej odmianie języka walijskiego. Narzędziem formalnym, jakie zostało wykorzystane do przeprowadzenia analizy fonologicznej, był model fonologii rządu. Model ten został wybrany z uwagi na jego niearbitralne ujęcie struktury sylabicznej. Przedstawione dane zostały zebrane z szeregu dostępnych publikacji na temat wymowy języka walijskiego oraz skategoryzowane w sposób umożliwiający klarowną analizę. Następnym krokiem było podsumowanie analiz długich samogłosek w języku walijskim wykonanych w różnych modelach teoretycznych w odniesieniu do ostatniego ćwierćwiecza. Zarówno mocne, jak i słabe punkty tych analiz posłużyły do sformułowania nowych hipotez prezentowanych w proponowanej analizie. Analiza proponowana w tym artykule zakłada, że długie samogłoski nie stanowią takiej struktury sylabicznej przez całą derywację, ale są efektem wydłużenia. Struktura takiej samogłoski składa się z dwóch odrębnych ośrodków sylaby, z czego jeden jest wtrącony przez akcentowanie, oddzielonych od siebie pustym nagłosem. Melodia długiej samogłoski jest efektem rozprzestrzenienia się struktury segmentu na pustą pozycję, która musi być licencjonowana.

*Streścił Tomasz Czerniak*

**Słowa kluczowe:** fonologia rządu, walijski, długie samogłoski, wydłużenie, licencjonowanie.