Palatalization in Old and Early Middle Welsh plurals

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<u>Abbreviations</u>

LPBr.   Late Proto-British

ModW   Modern Welsh

MW   Middle Welsh

OIr.   Old Irish

OW   Old Welsh

PBr.   Proto-British

PIE   Proto-Indo-European

pl.   plural

PrW   Primitive Welsh

sg.   singular

1. Introduction

Palatalization has long been recognized as a defining characteristic of Irish, but whether it was present at an early stage in the British languages is still unclear. As Graham Isaac put it: "the role of consonant palatalisation in the processes connected with final *i*-affection and apocope in Brittonic is not widely recognized" (2007:112). Isaac suggests that a distinctive palatalization did exist, and that this is shown by the Old Welsh plural *degion* 'nobles' from *dagos 'good'. This and other examples, as well as Isaac's hypothesis, are further explained and investigated in Chapters 3 and 4.

It is prudent to first define a number of terms. British or Brittonic is the language family which includes Welsh, Breton, and Cornish. Proto-British is used to refer to the ancestor of these languages from the time of its deviation from Proto-Celtic until the languages started to diverge around the beginning of the sixth century A.D. Old Welsh starts with the first written records in the middle of the eighth century A.D. and continues into the twelfth century, after which the language is referred to as Middle Welsh (Willis 2009:1). When exactly Old Welsh became Middle Welsh is debated, as there is no clear cut distinction between the two, but for the purpose of this paper the transition is marked by the loss of lenited /ɣ/ (spelled <g> in Old Welsh). When referring to Welsh and Isaac's hypothesis, the term palatalization means secondary palatalization. Exactly what this entails is discussed at length in Chapter 2.

All of the attested forms used in this paper have been taken from Appendix I (Atodiad I) of Silva Nurmio's thesis (2010:124-283). She includes forms from the Old Welsh glosses (Falileyev 2000), which are found in ninth century manuscripts including the *Book of St. Chad*, the *Oxoniensis Prior* manuscript, and the *Juvencus* glosses, as well as others (for more information on these, see Falileyev 2000). There are also forms from the Old Welsh sections of the *Book of Llandaff* (Evans & Rhys 1893), which dates to the early twelfth century, the *Black Book of Carmarthen* (*Llyfr Du Caerfyrddin*) (Jarman 1982) from the mid-thirteenth century, and the *Canu Aneirin* (Williams 1961), which is found in a thirteenth century manuscript but is probably based on older sources, perhaps dating back to the ninth century. The majority of the forms included are found in the *Cyfres Beirdd y Tywysogion* (Gruffydd:1991-6), and are therefore overwhelmingly those found in poetry and not necessarily in prose. These are attested in the *Hendregadredd Manuscript* from the thirteenth and first quarter of the fourteenth century, and in the *Red Book of Hergest*, c. 1400. Most of

these manuscripts were written in the southern part of Wales, but that does not necessarily mean that their language is southern. Northern dialectal influence could have come from the sources of the works, the exemplars copied, scribes from the North, and sections which were written in the North and later included in the manuscripts. In fact, it has been proven that sections of these manuscripts show northern dialectal features (Thomas 1993).
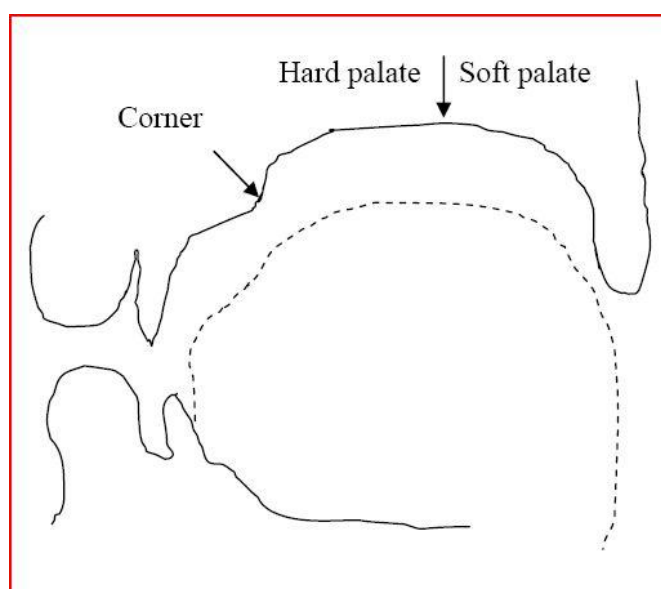
Chapter 2 will deal with palatalization – what kind of processes it encompasses, how it is realized phonologically, and how it works in languages with examples from Slavic. An overview of palatalization in Irish will provide a historical model in the same language family as Welsh. What exactly is to be considered palatalization in the case of Old Welsh will also be addressed. Chapter 3 will handle a variety of topics in the British languages, and specifically in Welsh, in order to provide a background for understanding the phonological, morphological, and philological situation in Old and Middle Welsh. These will include: *i*-affection, the development of *gi̯*, plural formations, and dialectology, specifically attempts at identifying northern and southern dialectal characteristics. In Chapter 4 the research undertaken for this paper, based on forms listed in Silva Nurmio's thesis (2010), will be presented. Forms in support of both hypotheses will be discussed, as well as forms which seem to contradict them. It will be argued that both hypotheses provide an incomplete account of the situation and the best explanation is given by a combination of the two. A discussion of remaining problems will follow.

Based on existing research and the hypotheses posed by Graham Isaac (2007) and David Willis (2005) in favor of palatalization and lexical diffusion respectively, this paper will attempt to answer the following questions: Was distinctive consonant palatalization present in Old Welsh? Does the explanation of palatalization fit with all occurrences of plurals in <i/y>? Does it explain any anomalies not explained by the dialectal distinction? Is it a better explanation than that of retention versus loss of /j/ in northern and southern dialects respectively? Further investigation of attested forms and their etymologies will shed light on some of these questions.

2. Palatalization

2.1 What is palatalization?

Palatalization is a phonological process which involves some sort of movement of the central part of the tongue body toward the palatal region of the vocal tract under influence of a front (high) vocoid. (cf. Bateman 2007, Kochetov 2011). This "palatal region" is defined by Bateman as the "region from the corner behind the alveolar ridge (marked as corner in figure 1.1) to the end of the hard palate of the vocal tract (between hard palate and soft palate). This region includes the alveo-palatal and palatal places of articulation."

"Figure 1.1 Palatal region of the vocal tract. Adapted from Keating (1991:32)."
(Bateman 2007:6)

It is important to note that there are two different ways in which palatalization can affect a consonant, "in one case the consonant shifts its primary place and often its manner of articulation while moving toward the palatal region of the vocal tract, and in the other it is co-articulated with a following palatal offglide." (Bateman 2007:2). The former is henceforth referred to as full palatalization and the latter as secondary palatalization. Bateman gives the following examples (2007:2ff.):

"(1) Full palatalization

k, t → ʧ

/dont ju/ → [donʧju] 'don't you' (English)

(2) Secondary palatalization

t, d → tʲ, dʲ

/yamati/ → [yamatʲi] 'a person' (Watjarri, W. Pama Nyungan; Douglas 1981)"

Full palatalization has been extensively investigated and, according to Bhat, compromises three different processes, namely tongue-fronting (Kochetov's coronal palatalization), tongue-raising (Kochetov's velar softening), and spirantization (Bhat 1978, Kochetov 2011). Bateman does not consider spirantization to be a case of palatalization, because the resulting sound is not palatal or palatalized (2007:2,15). Tongue-fronting is mainly triggered by a (high) front vowel and targets velars, whereas tongue-raising tends to be triggered by a high semivowel and targets alveolars (Bhat 1978, Kochetov 2011). This distinction is worth noting, because secondary palatalization probably occurs in the same environment as tongue-raising, since it is also realized by raising of the central part of the tongue (Bhat 1978:67). Bateman considers secondary palatalization to be the same as tongue-raising (2007:16) The possible palatalization that we are dealing with in Old Welsh does not involve a shift in place or manner of articulation. Therefore this paper is only concerned with secondary palatalization and further elaboration on full palatalization will be omitted.

2.2 Secondary palatalization

Phonetically, secondary palatalization is an assimilatory process realized by raising the central part of the tongue toward the palatal region to create a simultaneous secondary articulation. The primary place of articulation remains the same. This means that all consonants that are not already palatal in their primary articulation can be affected by secondary palatalization. (Bhat 1978:67, Bateman 2007:6, Kochetov 2011:1668). Bhat states that: "the palatal articulation may form an on-glide to the consonant under consideration, or a simultaneous secondary articulation, or an off-glide -- it could fall anywhere between these three, or form combinations of two or all the three of them." (1978:68). Bateman, however, claims that secondary palatalization is realized with an off-glide (2007:2). Bhat was not focused on secondary palatalization, but stated that it generally affects all of a language's consonants, resulting in a twofold distinction between palatalized and non-palatalized (or velarized) consonants (1978:68). This distinction is often phonemic, as in Russian and Irish, but can also be allophonic, as in Polish. (cf. Kochetov 2011, Rubach 2011). After analyzing a sample of 32 languages with secondary palatalization, Bateman was able to make the following generalizations about the effect it has on consonants:

- "Coronal and dorsal consonants can palatalize independently, or both may palatalize in the same language
- Coronal consonants may palatalize independently in both morpho-phonological and phonological contexts
- Dorsal consonants can palatalize independently only in phonological contexts
- Morpho-phonological dorsal secondary palatalization is dependent on coronal palatalization (full or secondary)
- Labial secondary palatalization always co-occurs with either coronal or dorsal secondary palatalization, or both (implicational universal)" (2007:51ff.)

For further discussion of secondary palatalization in relation to articulatory phonology and optimality theory, refer to Bateman 2007:235ff.

2.3 Palatalization in Slavic

Secondary palatalization is widely attested in Slavic languages, where it is referred to as surface palatalization. These languages provide a good example of how the process works. The triggers for palatalization are front vowels and glides (Rubach 2011:2909). In Polish and Russian, all preceding consonants are affected, while in some other Slavic languages, such as Slovak and Eastern Polish, multiple types of palatalization occur together, making the outcomes more complex (cf. Rubach 2011). Where surface palatalization is phonemic, for example in Russian, "velarized and palatalized consonants are paired, that is, they constitute minimal or near-minimal pairs that contrast in terms of [±back]." (Rubach 2011:2911). This results in a system of soft and hard consonants. Surface palatalization is defined as "a secondary articulation process, because it merely makes the consonant [-back] without producing changes in the manner or place of articulation." (Rubach 2011:2914). The process is regressive in Slavic, with the [-back] property spreading from a following vowel to a preceding consonant.

2.4 Palatalization in Irish

In order to understand palatalization in Welsh, it is prudent to first look at how the process worked in Irish. At an early stage in the history of Irish, that is to say, around the fifth century A.D. (this is difficult to date exactly, cf. McCone 1996:105ff.), before apocope and syncope, consonants were palatalized before $\breve{\imath}$ and $\breve{e}$. When these vowels were lost, the consonant remained palatalized. In fact, Thurneysen noted that the consonant was more

strongly palatalized if the vowel was lost because the two sounds merged into one (1946:97). As an exception to this rule, "the labials *b*, *p*, *f*, *m* (together with *mb*) and the gutturals *g*, *c*, *ch* (together with *ng*) are not palatalized in syllabic anlaut when preceded by a stressed *á* or *ŏ̆*, *ŭ* (also *úa*)" (Thurneysen 1946: 102-103). According to Thurneysen, "single (and formerly geminated) consonants at the beginning of an unstressed syllable which ends in a non-palatal consonant are not palatalized before (original) palatal vowels, except when (1) they are preceded by a palatal vowel or *u*, or (2) they were originally followed by *i̯* (or *i* in hiatus)" (1946: 103). Cowgill rephrases this rule, stating that "single [including formerly geminated] consonants which in Late Primitive Irish, immediately after syncope [middle to second half of the sixth century, according to Jackson, Language and history in early Britain 143], were preceded by an accented *ă̆* or *ŏ̆* [including *ō* that later became OIr. *úa*] and followed by an *e* inherited from Early Primitive Irish [as it was around A.D. 400] *ě̆* were depalatalized" (1969:30-31). Cowgill's rule explains more material than Thurneysen's and is simpler because it has fewer constraints. He also notes that before the lowering of **i* to *e* in unaccented syllables before *a* occurred, labials and velars following *a* and preceding *e* were weakly palatalized, whereas other consonants following *ă̆* or *ŏ̆* and preceding *e* were strongly palatalized. Only the strongly palatalized consonants were phonemically contrasting, and when *e* was lost by apocope or syncope, the labials and velars which were only allophonically palatalized lost their palatalization (cf. Cowgill 1969:36).

While many scholars including Thurneysen and Cowgill regarded exceptions to the general rule of palatalization as the result of depalatalization, Greene (1974) thought that these exceptional consonants were never palatalized, and that the history of the Irish language demonstrates the tendency of palatalization to spread. He summarized the three phases of palatalization as follows (step numbers are those in his relative chronology of palatalization and related sound changes; only the step numbers for the stages of palatalization are mentioned):

First palatalization (step 5): Single consonants and the clusters *ng*, *nd*, and *mb* developed palatalized allophones in intervocalic position. The following rules apply, where LG stands for labial and guttural consonants, and -LG stands for other consonants:

> "(a) VCV → VC′V when V- is a front vowel (or a diphthong the second element of which is a front vowel), and -V is also a front vowel.
>
>   **ber'eθ'i*   OIr. *beirid*

(b) VCV → VC′V when V- is /u/, C is -LG, and -V is a front vowel.

   *tur′iμa   OIr. *tuirem*

But VCV → VCV when V- is /u/, C is +LG and -V is a front vowel.

   *tuγiya   OIr. *tugae*

(c) VCV → VC′V when V- is /a/ and -V is /i/ or /i:/.

   *gaβ′iθ′i   OIr. *gaibid*

But VCV → VCV when V- is /a/ and -V is /e/ or /e:/.

   *kaleθah   OIr. *calad*

(d) VCV → VC′V when V- is /a:/, /o/, /o:/ or /u:/, C is -LG and -V is /i/ or /i:/.

   *tōθ′iyah   OIr. *túaithe*

But VCV → VCV when V- is /a:/, /o/, /o:/ or /u:/, C is +LG and -V is /i/ or /i:/.

   *gāβiθuh   OIr. *gábud*

And VCV → VCV when V- is /a:/, /o/, /o:/ or /u:/, and -V is /e/ or /e:/

   *sonertih   OIr. *sonairt*" (Greene 1974:130-131)

This was followed by *a/o*-affection sometime in the fifth century A.D. (cf. McCone 1996:110ff.) and the palatalization became phonemic.

Second palatalization (step 7):

> "(a) Reduction of /e/ and /i/ in final syllables to a short front vowel which palatalized all preceding consonants;
>
> (b) *u*-infection of the penultimate syllable by /u/ of final syllables" (Greene 1974:132)

Greene claimed that palatalization and u-infection arose from the shift of phonetic elements from a short final vowel to the preceding syllable as the final syllable started to weaken before apocope. Rounding transferred to the vowel resulting in *u*-infection, but front vowels caused palatalization of the consonant because palatalized consonants were already established in the phonological system (1974:132). The second palatalization became phonemic after apocope occurred around the fifth century A.D. (cf. McCone 1996:105ff.).

Third palatalization (step 10): "Short vowels in unstressed non-final syllables are reduced to two, /ə/ and /ĭ/, the latter causing palatalization;

> (a) [a] and [o] become [ə]; [u] becomes [ə] when the following consonant is neutral;
>
> (b) [e] and [i] become [ĭ]; [u] becomes [ĭ] when the following consonant is palatalized" (Greene 1974:134).

Syncope caused this palatalization to become phonemic in the sixth century A.D. (Jackson 1953:143). The finer details of Irish palatalization, especially its chronology, are still debated. For further discussion see Kortlandt 1979, 1997, 2009, McCone 1996, and Isaac 2007.

2.5 Conclusion

Throughout the rest of this paper, the term "palatalization" is used to refer to the addition of a secondary palatal articulation to a consonant, as it occurs in Irish and in surface palatalization in Russian. The idea is thus of a distinct set of palatalized consonants, which contrast with non-palatalized ones. Due to the continuous nature of the articulatory gestures involved, this palatalization can be realized by an on-glide, simultaneous articulation, off-glide, or some combination of the three. This makes it difficult to distinguish between forms of palatalization and the presence of a following yod in attested forms, leaving some uncertainty as to the phonological reality of palatalization in Isaac's hypothesis.

3. British

3.1 Isaac's hypothesis of Old Welsh palatalization

As previously mentioned, Isaac believes that palatalization is demonstrated by the Old Welsh plural *degion* 'nobles'. If the plural suffix *-ion* was added to the Old Welsh plural **deg* (< **dagī*), then the Middle Welsh plural should have been ***deion* after loss of *-g-* (/ɣ/). Isaac's alternate explanation is that "**dagī* > early OW **deg* = /deɣ′/ = [deiɣ′] + *-on* (secondary plural marker) > OW *degion* = /deɣ′on/ = [deiɣ′jon] (with palatal on and off-glides surrounding the palatal consonant) > MW *deon*, with Middle Welsh loss of [ɣ′] in this form" (2007: 113). In forms with consonants that were not lost, the glides became new phonological segments and distinctive palatalization was lost, for example OW **mepion* > MW *meibyon* 'boys, sons'. Thus the Middle and Modern Welsh difference between northern dialects with /j/ and southern dialects without is a case of the development of /j/ from the off-glide as opposed to lack of this development (Isaac 2007:113).

In order to understand Isaac's argumentation, *i*-affection, special developments involving **g*, and pluralization in Welsh must be covered. Willis' idea of lexical diffusion requires a further overview of work in Welsh dialectology and the distribution of forms with /j/, so these topics will also be dealt with here.

3.2 British *i*-affection

In the British languages, palatalization is not treated on its own, but rather as a part of the process of *i*-affection. Two types of *i*-affection are present in British (this excludes secondary affection in Breton, which is not relevant because it occurred independently in Breton at a later stage). In Late Proto-British, *ī* or *i̯* in a final syllable caused final affection, and in Primitive Welsh, Cornish, and Breton, *ī*, *i*, and *i̯* caused affection internally (Jackson 1953:579). The following table shows the results of final and internal affection in Welsh (*C* is a consonant or consonants, although Jackson uses *B* in his table) (Jackson 1953: 581-582):

Final Affection		Internal Affection	
British	MW	PrW	MW
-aCī(-)	*-ęiC or -yC*	*-aCī-*	*-ęC-*
-aCi̯-	*-ęiC*	*-aCĭ-*	*-ęC-*
-oCī(-)	*-yC*	*-aCi̯-*	*-ęiC-*
-oCi̯-	*-ęiC or -yC*	*-oCī-*	*-ęC-*
-uCī(-)	*-yC*	*-oCĭ-*	*-ęC-*
-uCi̯-	*-yC*	*-oCi̯-*	*-ęiC-*
-eCī(-)	*-yC*	*-eCī-*	*-ęC-*
-eCi̯-	*-yC*	*-eCĭ-*	*-ęC-*
		-eCi̯-	*-ęiC-*

Jackson states that *i*-affection was also present in Primitive Irish. As is the case with Irish *ā*-affection, this was the result of metaphony, meaning that raising and narrowing occurred in anticipation of *i, ī,* or *i̯*. In the process an intervening consonant was palatalized. A further on-glide could arise before the palatalized consonant as is the case where *o* became *u*: *oCĭ > uc'ĭ̯ > uiC'ĭ̯* (1953: 583). There appear to be two affects of *i*-affection, one being umlaut and metaphony and the second being epenthesis, "by which a *i̯* is inserted between the vowel and the palatalized consonant as a glide, making a diphthong with the preceding vowel, and the *i̯* which followed the consonant is absorbed into it and lost, with eventual depalatalisation". Epenthesis was only caused by *i̯*, while umlaut and metaphony were also cause by *ī* and *ĭ* (Jackson 1953:583). Cornish and Breton also have *i*-affection, but palatalization seems to have been weaker, because we rarely, if ever, find epenthesis (Jackson 1953, 1967). As to the date of final *i*-affection, Jackson says that the "first stages of advancing, raising, and palatalisation were beginning towards the end of the fifth century, and that the development was fully launched by the middle of the sixth, though the final stages were not necessarily reached by then" (1953: 603). Internal *i*-affection happened somewhat later, probably in the seventh or eighth century (Jackson 1953:616).

3.3. Development of *gi̯

There seems to have been a special development of *i̯ following *g (Schrijver 1995:302 ff.). Although at first glance there appear to be four different developments of *gi̯ in British, *i̯ and zero, with or without *i*-affection, Schrijver (1995) concludes that *gi̯ became *i̯ between *a*-affection and *i*-affection in the history of Proto-British, and discounts other forms for various reasons, including analogical restoration and alternate etymologies. He gives the development of the most reliable examples as follows (cf. Schrijver 1995: 312):

PBr.	*a*-affection	*gi̯> *i̯	*i*-affection	LPBr.	ModW
*u̯egi̯ā	*u̯egea	(*u̯ega)	(*u̯ega)	*Weɣ	gwe 'web'
*kagi̯os	(*kagi̯os)	*kai̯os	(*kai̯oh)	*Kai	cae 'field'
*lagi̯ūs	(*lagi̯ūs)	*lai̯īs	*lę̄i̯ih	*Lęi	llai 'less'

Schrijver (1995) also mentions the form OW *degion*, MW *deon* 'noblemen', but since there is a morpheme boundary between the stem and the plural suffix, either could have been restored, so he does not believe that this form is reliable evidence for the development of *gi̯.

3.4 Welsh plural formations

The sound changes discussed thus far often occur when a plural suffix is added, so it is necessary to explain how Welsh plurals are formed, as it is somewhat complicated. They can be marked by vowel alternations caused by *i*-affection, the source of which is the plural of British *o*-stems in *-ī*[1] and by the addition of suffixes which include: *-ed, -(y)eint, -(y)eit, -et, -(y)eu, -i, -oed, -(y)on, -ot*, and *-yd* (Willis 2009, Morris-Jones 1913). These suffixes can also cause *i*-affection. According to Willis, "the variation between endings with *-y-* /j/ and those without is partially lexical and partially dialectally determined, the forms with /j/ being more characteristic of northern texts for some items (Russell 1990, Thomas 1992, 1993, Willis 2005). This variation extends also to other derivational suffixes and even to some non-suffixed items" (1990: 17). He also states that /j/ in the suffix *-(y)on* was historically primary, as proved by the presence of *i*-affection and the Breton plural suffix *-(i)on/-(i)en*, which usually occurs with /j/. The tendency with this suffix was for the variant without /j/ to spread in the south (cf. Willis 2005).

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[1] *-ī < -oi*, borrowed from the pronominal endings or *< -ūs* (McCone 1996:62). This *ī* is the plural ending of *o*-stems, and according to Isaac caused palatalization, which is why only the plurals of *o*-stems are relevant to Isaac's hypothesis.

There are also nouns which form the singular by addition of a suffix *-yn* or *-en*. Furthermore, Willis states that "the distribution of endings does not reflect the inherited system (...) the distribution of the suffixes is essentially arbitrary, and some nouns shift from one suffix to another or are variable" (2009: 17). Further study of pluralization in Welsh has been undertaken by Silva Nurmio (2010).

3.5 Dialectal differences in Welsh

Because the distribution of plural suffixes with yod plays such a large role in Isaac's hypothesis about palatalization and Willis' claim about lexical diffusion, and these variants appear to be partially dialectally distributed, it is important to understand some of the recent work done in Welsh dialectology, especially the distribution and characteristics of Middle Welsh dialects. The first major attempt to classify Middle Welsh texts by region using dialect features was made by P.W. Thomas. He used three variables (1993:25):

- Does /j/ appear as part of the stem? (-j-)
- Do the 3sg. and 3pl. forms of *gan* 'with, by'and *rwng* 'between' contain /θ/? (-th-)
- Does the 3sg. preterite form end in *-awd* rather than *-ws*? (-awd)

By analyzing the presence of these variants in a large collection of Middle Welsh texts, he was able to identify four major groups (Thomas 1993: 35):

%			
(-j-)	(-th-)	(-awd)	Interpretation
0	0	0	South-east
0	0	100	South-west
100	100	100	Later north
100	100	0	Earlier north

He also pointed out a number of difficulties facing scholars when it comes to Middle Welsh dialectology. It is difficult to link a particular text to a region because scribes are usually anonymous, there is often influence from the language of the exemplar, and standardization and copying conventions often obscure dialectal features. It can therefore be problematic to identify which characteristics of a text are due to the dialect of the exemplar and which are due to the dialect of the scribe himself.

Another study which attempted to classify texts based on dialect features was that of Willis (2005). He looked at the distribution of post-tonic /j/ in three northern and three southern law texts. The pattern he found for a number of lexical items "is reminiscent of lexical diffusion, the idea that sound changes (and, at times, other linguistic innovations) affect different lexical items at different rates" (Willis 2005: 117). The key point made by Willis (2005) is that variation occurs per word and per suffix, so there is a lexical as well as a dialectal distinction. Some suffixes historically had /j/ and some did not, and loss of /j/ spread from south to north on a word-by-word basis.

3.6 Conclusion

The exact phonological details involved in the process of *i*-affection, especially in the sequence **gi̯*, leave ample space for further discussion of the role played by palatalization, and whether it could have indeed been distinctive. At this point it is possible to identify some variables which mark northern versus southern texts, but there is still a degree of uncertainty when it comes to manuscripts that exhibit a mix of northern and southern characteristics.

4. Research

In an attempt to confirm or deny the hypotheses put forth by Isaac and Willis, this chapter will look at *i*-affection, what happens when [γ] is lost, and the distribution of forms with and without <i/y> in the sample of plural forms[2] from Silva Nurmio's thesis (2010).

4.1 Isaac's hypothesis

The first hypothesis being investigated is that based on Isaac's suggestion (2007:112-113), namely that palatalization was distinctive in Old Welsh. The *o*-stem plural ending in *-ī* (see note in section 3.4) caused a preceding consonant to become palatalized and this palatalized consonant was indicated in the orthography by a following <i/y>. An on-glide accompanying the palatalization resulted in *i*-affection. Secondary plural markers including *-on*, *-eu*, and *-oet* were then added to the *i*-affected form. At some point in Middle Welsh, this palatalization was reinterpreted as an off-glide that became a separate /j/ in northern dialects. When a consonant was lost, the palatalization disappeared, as did the spelling with <i/y>. In the southern dialects, palatalization was lost in all cases without the retention of the off-glide

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[2] This sample consists of: Old Welsh glosses (Falileyev 2000), the Book of Llandaff (Evans & Rhys 1893), the Black Book of Carmarthen (Jarman 1982), Canu Aneirin (Williams 1961), and Cyfres Beirdd y Tywysogion (Gruffydd:1991-6).

as a separate /j/. This can be represented as follows (V^i represents V with *i*-affection; *-on* stands for any secondary plural marker, also *-eu*, *-oet*, etc.):

1. palatalization, *i*-affection, and apocope: CVC-ī → CV^{j}C^j <CV^{i}Ci/y>
2. addition of secondary plural marker: → CV^{i}C^{j}on <CV^{i}Ci/yon>
3. northern development: → CV^{i}Cjon <CV^{i}Ci/yon>

    if C lost → CV^{i}on <CV^{i}on>
4. southern development: → CV^{i}Con <CV^{i}Con>

    if C lost → CV^{i}on <CV^{i}on>

If Isaac's hypothesis is correct, the following points must be taken into consideration:

- In all cases where a consonant is lost, [j] should be lost as well. These must be *o*-stems in order to establish that palatalization (from -ī) was present.
- Plurals with <i> in the suffix should exhibit *i*-affection.
- If they were *o*-stems, forms where /γ/ is lost should have *i*-affection.
- All words which have a plural with <i/y> in Old/Early Middle Welsh and do not lose a consonant should retain a Modern Welsh variant with /j/.

The most convincing evidence in support of Isaac's hypothesis is a number of forms which historically contained a consonant that was lenited and subsequently lost in the Old Welsh period. There are some early attestations of forms which still contain the consonant and have an ending with <i/y> (*degion* 'noblemen', *bregion* 'hills'). Other forms are not attested with the consonant, but do have modern plural forms without /j/. Among the modern plural forms which have endings without /j/, those that can be traced as *o*-stems support Isaac's hypothesis, because these would have had a palatalized consonant deriving from the earlier plural ending in -ī, and palatalization would have been lost along with the consonant. These are:

Old pl. (hypothetically before loss of consonant)	Attested pl. (after loss of consonant)	Modern sg.	Etymology
degion (attested) 'noblemen'	*deon*	**da*	*da* < PBr. **dagos* (Schrijver 1995:311) 'good'
**llugioed*	*lluoed*	*llu*	*llu* < PBr. **slǭgos* < PIE **slougos* (Schrijver 1995:352) 'host, throng'
**teulugioet*	*teuluoet*	*teulu*	*teulu* < **teγluγ* < **tego-slougos* (Schrijver 1995:69, alternate

			etymology for *tego- 71) 'family'
**trogieu*	*troeu*	*tro*	*tro < *trogos* (Schrijver 1995:133) 'turn; time'
**llegieu*	*lleeu*	*llw*	*llw < *lugos* (Jackson 1953:452) For an alternate etymology see Schrijver 1995:310ff.) 'oath'

Further support for Isaac's hypothesis is offered by the presence of *i*-affection in forms with an ending containing [j]. The majority of plurals with [j] do exhibit *i*-affection. Some examples are:

Old pl.	Old sg.	Modern pl.	Modern sg.
amdrychyoet	*amdroch, amdrwch*	*amdrychion, -iaid, -ioedd*	*amdrwch* 'wounded'
angylion	*agel, angel*	*angylion, angel(i)on*	*angel* 'angel'
gweinieit	*guan, gwan*	*gweiniaid, -ion, -aint*	*gwan* 'weak'
medylyeu	*med(d)wl*	*meddyliau, -(i)on*	*meddwl* 'mind, thought'
meibion	*mab, map*	*meib(i)on, mabion, meib*	*mab* 'son, boy'
mythyon	*mwth*	*myth, -(i)on*	*mwth* 'swift'
seinhyeu	*sant*	*saint, seint(i)au, sein(i)au*	*sant* 'saint'

Forms which lost a consonant and no longer contain [j] but do exhibit *i*-affection also support the hypothesis. In this sample, only the forms *deon* < OW *degion* and *lleeu* show definite *i*-affection. The forms mentioned above ending in *u* cannot undergo *i*-affection (*lluoed*, *teuluoet*). *Troeu* seems to lack *i*-affection, but in this sample plurals with *o* never show *i*-affection. As this is the case, forms with *o* will be omitted as evidence for the presence or absence of *i*-affection in the remainder of the discussion.

In the case of forms where a consonant is not lost, Isaac's hypothesis offers no explanation for the presence of *i*-affection in forms with endings without /j/. The following forms show this phenomenon:

Old pl.	Old sg.	Modern pl.	Modern sg.
beirdon	*bard*	*beirdd, -ion, -iaid*	*bard* 'poet, bard'
bylcheu	*bwlch*	*bylch(au)*	*bwlch* 'breach, gap'
byrteu	*bwrd*	*byrdd(au), -oedd*	*bwrdd* 'table, board'
byrtoet	*bwrd*	*byrdd(au), -oedd*	*bwrdd* 'table, board'
keidron	*kadir*	*ceidrion*	*cadr* 'handsome'
cemmein	*cam*	*camau, cemmein*	*cam* 'step, stride'
cynfreinon	*cynfran*	*cynfrain*	*cynfran* 'leader'
kyngreinon	*kyngran*	*cyngrain, cyngrein(i)on*	*cyngran* 'prince, leader, warrior'

kynreinon	*kynran*	*cynrain, cynreinion*	*cynran* 'prince, leader'
drygoet	*drwc*	*dryg(i)au, -ion, -oedd*	*drwg* 'bad, rotten'
drysseu	*drws*	*drws(i)au*	*drws* 'door, entrance'
esgereint	*esgar*	*esgarant, esgeraint (y…)*	*esgar* 'enemy, stranger'
frydeu	*ffrwt*	*ffryd, -(i)au, -oedd,*	*ffrwd* 'swift stream, torrent'
gleisson	*glas*	*gleision*	*glas* 'blue, grey'
golygon	*golwc*	*golygon, -oedd, -edd*	*golwg* 'appearance, sight'
gorulycheu	*gorflwch*	*gorflychau*	*gorflwch* 'cup, goblet'
gweinon	*gwan*	*gweiniaid, -ion, -aint*	*gwan* 'weak'
gweisson	*gwas*	*gweis, -(i)on*	*gwas* 'servant, boy'
lliwydoet	*lliwed*	*lliwedawr*	*lliwed* 'host, throng'
lichou	*llwch*	*llychau*	*llwch* 'lake, pool'
meibon	*mab*	*meib(i)on, mabion, meib*	*mab* 'son, boy'
mawrdrygeu	*mawrdrwc*	*mawr ddrygau*	*mawrddrwg* 'great evil'
pillou	*pull*	*pyllau (pwllau), pyllod, pyll*	*pwll* 'hole; pool'
seineu	*sant*	*saint, seint(i)au, sein(i)au*	*sant* 'saint'
tlysseu	*tlus*	*tlysau (tlwsau), tlysod*	*tlws* 'jewel, precious stone'
trychon	*trwch*	*trych(i)on*	*trwch* 'unfortunate, sad; wounded'
tyllon	*twll*	*tyllau (twllau), tyll, -(i)on*	*twll* 'hole'
tyrau	*twr*	*tyr(i)au, -(i)oedd, tyrod*	*twˆr* 'tower, keep'

Plurals formed with a suffix containing <i/y> that do not exhibit *i*-affection are evidence against Isaac's hypothesis, as one would then expect *i*-affection to have taken place along with palatalization of the consonant. This is the case with all endings, not just *-ion*. In this sample, the forms without *i*-affection are:

Old pl.	Old sg.	Modern pl.	Modern sg.
hemyeint	*hemm*	*hemiaint, -au*	*hem* 'rivet'
madyoet	*mad*	*madioedd*	*mad* 'fortunate, lucky'
runcniau	*rwgc*	-	*rhwnc* 'snort, snore'

If the off-glide associated with a palatalized consonant developed into a separate /j/ in northern dialects as Isaac claims, then it would be expected that all forms which are attested in Old or Middle Welsh with an ending containing <i/y> would also have a Modern Welsh variant with /j/. There is one form that disobeys this rule. Of course, the southern variant without /j/ could have been generalized and the northern form lost, but this is odd considering that all other words in this sample which are attested with /j/ have maintained a form with yod in northern dialects.

Old pl.	Old sg.	Modern pl.	Modern sg.
eririon	*eryr*	*eryrod, eryron*	*eryr* 'eagle'

In the discussion of Isaac's hypothesis, it remains a problem that in Middle Welsh orthography, it is impossible to tell the difference between palatalization and /j/ as a separate segment. We can only make this distinction when a consonant is lost.

4.2 Willis' hypothesis

According to the hypothesis based on Willis' idea of lexical diffusion (2005), there was no distinctive palatalization in Old Welsh. The spelling <i/y> represents /j/. This /j/ was historically primary in the ending *-ion*. It was lost by sound change in southern dialects following a pattern of lexical diffusion (that is to say, the sound change spread in southern dialects, but did not reach all words). For other plural suffixes, the variant with /j/ was not historically primary, but spread in northern dialects by analogy with the ending *-ion*. The distribution of plural endings is arbitrary and unlike Isaac's claim about *o*-stems, does not continue the earlier system.

The following statements can be made in order to evaluate this hypothesis:

- Plurals ending in -(*i*)*on* should overwhelmingly show the variant with /j/.
- Other plural endings should overwhelmingly show the variant without /j/.
- All plurals ending in *-(i)on* should exhibit *i*-affection.
- Plurals with other endings should not have *i*-affection.
- W here a consonant is lost, /j/ should be retained unless it is a southern dialectal form.

In support of Willis' claim, plural forms ending in *-ion* (166 out of 256, 65%) surpass those in *-on* (90 forms)[3]. (For these statistics and those of the following endings, unclear or uncertain forms have been omitted.) The opposite is generally true of the other endings, where the variant without <i/y> is more common. This is certainly the case for *-(i)eu*, where only 54 out of 323 forms (17%) have <i/y>. It is also the case for *-(i)oet* (8 out of 59, 14%), *-(i)ein(t)* (2 out of 15, 13%) and *-(i)awr* (3 out of 36, 8%). In the case of *-(i)eit* (8 out of 11, 73%) and *-(i)awn* (2 out of 3, 67%), it appears that the variants with <i/y> are more common, but these endings occur so infrequently in the sample that it is difficult to make any generalizations about which variant was actually more prevalent.

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[3] Each word is only counted once, ignoring orthographical variations. See Appendix for all forms attested with <i/y>. All forms are borrowed from Appendix I (Atodiad I) of Silva Nurmio's thesis (2010:124-283).

As expected according to Willis' hypothesis, most plurals that end in *-ion* show *i*-affection, suggesting that the yod in the ending is original. Some examples of this are: *gwas* : *gweision* 'weak', *trwch* : *trychion* 'unfortunate, sad; wounded', and *angel* : *angylion* 'angel'. His claim is further supported by the absence of *i*-affection in some forms with other endings, where he suggests that yod later spread analogically from *-ion*. The relevant forms in this sample are:

Old pl.	Old sg.	Modern pl.	Modern sg.
hemyeint	*hemm*	*hemiaint, -au*	*hem* 'rivet'
madyoet	*mad*	*madioedd*	*mad* 'fortunate, lucky'
runcniau	*rwgc*	-	*rhwnc* 'snort, snore'

As stated above, note that forms with *o* do not ever seem to show *i*-affection and are omitted.

Further support is offered by plurals in *-on* without /j/ that exhibit *i*-affection, suggesting that these are southern forms where /j/ was lost but the original *i*-affection from *-ion* remained.

Old pl.	Old sg.	Modern pl.	Modern sg.
beirdon	*bard*	*beirdd, -ion, -iaid*	*bard* 'poet, bard'
keidron	*kadir*	*ceidrion*	*cadr* 'handsome'
cynfreinon	*cynfran*	*cynfrain*	*cynfran* 'leader'
kyngreinon	*kyngran*	*cyngrain, cyngrein(i)on*	*cyngran* 'prince, leader, warrior'
kynreinon	*kynran*	*cynrain, cynreinion*	*cynran* 'prince, leader'
gleisson	*glas*	*gleision*	*glas* 'blue, grey'
golygon	*golwc*	*golygon, -oedd, -edd*	*golwg* 'appearance, sight'
gweinon	*gwan*	*gweiniaid, -ion, -aint*	*gwan* 'weak'
gweisson	*gwas*	*gweis, -(i)on*	*gwas* 'servant, boy'
meibon	*mab*	*meib(i)on, mabion, meib*	*mab* 'son, boy'
trychon	*trwch*	*trych(i)on*	*trwch* 'unfortunate, sad; wounded'
tyllon	*twll*	*tyllau (twllau), tyll, -(i)on*	*twll* 'hole'

Out of the forms where a /j/ was lost along with a lenited consonant, those that originally ended in *-ion* but only have modern variants in *-on* seem to cast some doubt on Willis' claim. These are *bregion > breon* 'hills' and *degion > deon* 'noblemen'. The forms *duon* (*du < duβ* 'black') and *greon* (*gre < greγ* 'herd') might also have originally ended in *-ion*. If *-ion* was historically primary then we would expect to find a northern variant with /j/. However, it is possible to interpret these forms as lexical items which were reached early on by the loss of /j/ which spread from south to north. This would then be in agreement with Willis' idea of lexical diffusion.

The most convincing evidence against Willis' hypothesis would be the occurrence of plural forms ending in *-ion* that do not exhibit *i*-affection. Assuming *-ion* was historically primary, it would have caused *i*-affection. However, the only examples of such forms in this sample are those with *o* in the root, and as has been seen above, *o* never shows *i*-affection in plural forms. Forms with other endings showing the variant with /j/ that do cause *i*-affection cast doubt on his claim, although they are less convincing because *i*-affection could have been analogically applied to these forms along with the /j/ of the ending, or the /j/ variant could have spread before *i*-affection. Some examples have already been given above, including *gwan* : *gweinieit* 'weak', *sant* : *seinhyeu* 'saint', and *amdrwch* : *amdrychoet* 'wounded'.

If variants with /j/ spread to other suffixes analogically from *-ion* in northern dialects, we would certainly not expect to find forms of these other plural formations without /j/ that show *i*-affection. However, there are a number of forms which do indeed show this:

Old pl.	Old sg.	Modern pl.	Modern sg.
bylcheu	*bwlch*	*bylch(au)*	*bwlch* 'breach, gap'
byrteu	*bwrd*	*byrdd(au), -oedd*	*bwrdd* 'table, board'
byrtoet	*bwrd*	*byrdd(au), -oedd*	*bwrdd* 'table, board'
cemmein	*cam*	*camau, cemmein*	*cam* 'step, stride'
drygoet	*drwc*	*dryg(i)au, -ion, -oedd*	*drwg* 'bad, rotten'
drysseu	*drws*	*drws(i)au*	*drws* 'door, entrance'
esgereint	*esgar*	*esgarant, esgeraint (y…)*	*esgar* 'enemy, stranger'
frydeu	*ffrwt*	*ffryd, -(i)au, -oedd,*	*ffrwd* 'swift stream, torrent'
gorulycheu	*gorflwch*	*gorflychau*	*gorflwch* 'cup, goblet'
lliwydoet	*lliwed*	*lliwedawr*	*lliwed* 'host, throng'
lleeu	*llw*	*llyfon, llwon, -aint, -au, llyain, -au, -on, llyfau, -oedd, llwfon, lleiau, llau, llywaint*	*llw* 'oath'
lichou	*llwch*	*llychau*	*llwch* 'lake, pool'
mawrdrygeu	*mawrdrwc*	*mawr ddrygau*	*mawrddrwg* 'great evil'
pillou	*pull*	*pyllau (pwllau), pyllod, pyll*	*pwll* 'hole; pool'
seineu	*sant*	*saint, seint(i)au, sein(i)au*	*sant* 'saint'
tlysseu	*tlus*	*tlysau (tlwsau), tlysod*	*tlws* 'jewel, precious stone'
tyrau	*twr*	*tyr(i)au, -(i)oedd, tyrod*	*tŵr* 'tower, keep'

Confirmation of Willis' hypothesis is largely dependent on the geographical origin of the manuscripts in which the relevant forms are found. Most of the sources used in Nurmio's sample are southern, but further analysis should be done on a form-by-form basis. This is beyond the scope of this paper, but may be able to further confirm or deny the theory of lexical diffusion.

4.3 Conclusion

As can be seen, the evidence does not overwhelmingly support either claim. Confirmatory and contradictory evidence can be found for both. Some evidence is ambiguous and can be interpreted in favor of either hypothesis, and problems with both still remain. However, the two hypotheses can be combined into the following theory:

Palatalization was distinctive in Old Welsh, and as long as a consonant was retained, palatalization developed into a following /j/ in Middle Welsh. The secondary plural marker added to palatalized forms was *-on*, so that /j/ was historically primary in the ending *-ion*. It was lost by lexical diffusion in southern dialects. For other plural suffixes, the variant with /j/ was not historically primary, but spread in northern dialects by analogy with the ending *-ion*.

5. Conclusion

After analysis of the attested plural forms, it can be seen that neither Isaac's nor Willis' hypothesis is satisfactory on its own. Isaac's hypothesis accounts for the loss of <i/y> in forms where a consonant is lost, but does not offer an explanation for *i*-affection in suffixes that do not (and never have) contained a yod. The idea put forth by Willis accounts for the prevalence of forms with yod ending in *-(i)on*, and of forms without yod ending in other suffixes. It also explains why we sometimes find *i*-affection in plurals ending in *-on*. Apparent exceptions, such as the loss of /j/ in *deon < degion* 'noblemen' in all modern dialects, have to be explained as analogy or dialectal variants.

In the end, Willis' hypothesis seems to explain more of the evidence and provides better reasons for exceptions. That said, a combination of the two hypotheses gives a more complete explanation overall. That is to say that palatalization did exist in Old Welsh, and that this palatalization developed into a following yod in Middle Welsh, after the loss of lenited /ɣ/. The ending *-on*, which had been added to palatalized forms as a secondary plural marker, then became *-ion*. Following a pattern of lexical diffusion, yod spread to other plural endings in northern dialects and was lost in southern dialects.

5.1 Problems and further investigation

As has been stated, one of the pitfalls of Isaac's palatalization hypothesis is that we will probably never be able to tell what the phonetic realization of a consonant followed by

<i/y> was in Old Welsh, based on Old Welsh orthography alone. The best evidence that can be put forth is what happens when that consonant is lost, as in the case of /γ/. However, it may be possible to find evidence for Old Welsh palatalization in Irish loan words. If Old Welsh words loaned into Irish show palatalization, especially if this palatalization differs from the expected reflex in Irish, it would indicate that those words were palatalized in Old Welsh. Furthermore, if words that were loaned into Welsh from Irish show spelling with <i/y> where Irish has palatalization, this would be an indication that <i/y> could represent palatalization in Old Welsh orthography.

A more extended corpus of poetry and prose, and identification of forms as southern or northern would provide a more complete picture of lexical diffusion and whether exceptions can really be explained as expected dialectal variations. A word-by-word survey of *o*-stems and other etymological information could reveal more information about the origins of palatalization and therefore also its existence. Further investigation of palatalization in Welsh and Irish loanwords might also provide support for the existence of palatalization in Old Welsh.

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Appendix 1. Plurals with <i/y>

Old pl.	Old sg.	Modern pl.	Modern sg.
aeruleityeid	*aeruleit*	*aerfleiddiaid, -iau*	*aerflaidd*
aergunyeit	*aergun*	*aerguniaid*	*aergun*
alltudion	*alltud*	*alltudion, -iaid*	*alltud*
amdrychyoet	*amdroch, amdrwch*	*amdrychion, -iaid, -ioedd*	*amdrwch*
amdrychyon	*amdroch, amdrwch*	*amdrychion, -iaid, -ioedd*	*amdrwch*
(arch)e(n)gylyon	*a(n)gel*	*angylion, angel(i)on*	*angel*
angertolyon	*angertawl*	*angerddolion*	*angerddol*
anghofiau	*anghof*	*anghofiau, -ion*	*angof = cof*
anoethyon	*anoethh*	*anoethau, -ion*	*anoeth*
eirchion	*arch*	*eirch(i)on, archau, eirch, eirchiau*	*arch*
arfogion	*aruawc*	*arfogion*	*arfog*
argosbion		*argosbion*	*argosb*
arwytyon	*arwyt*	*arwydd(i)on*	*arwydd*
oryeu	*awr*	*oriau*	*awr*
beirdyon	*bard*	*beirdd, -ion, -iaid*	*bardd*
berion	*beryf*	*beryon, -yfon, -ïon*	*bery(f)*
bleityawr	*bleit*	*blaidd(i)au, -iaid, -(i)awr*	*blaidd*
bleityeu	*bleit*	*blaidd(i)au, -iaid, -(i)awr*	*blaidd*
bradogion	*bradawc/g, -ouc*	*bradogion*	*bradog*
breinhyeu	*br(y)ein(t)*	*brein(t)iau*	*braint*
brodorion	*brawd*	*brodyr, -er, -orion*	*brawd*
brodyeu	*brawd*	*brodyr, -er, -orion*	*brawd*
breuolyon	*breuawl*	*breuolion*	*breuol*
brithion	*br(e)ith*	*brithion, -iaid*	*brith*
bronreinion (darll.)	*bronrein*		*bronrhain*
brydyon	*brot, brwt*	*brydion*	*brwd*
brwysgyon	*brwysc*	*brwysg(i)on*	*brwysg*
brychuoelion		*brychfoelion*	*brychfoel*
brydyeu	*brid*	*bryd(i)au, -oedd*	*bryd*
bwystgunyon		*bwystgunion*	*bwystgun*
keidryon	*k/cadir, -yr*	*ceidrion*	*cadr*
kein(n)yon	*k/cein*	*ceinion*	*cain*
keigyeu	*k/cei(n)g*	*cangau, ceinciau, -g(i)au, -(i)on*	*cainc (/g)*
camuedylyon *		*camfeddyliau, -ion*	*camfeddwl*

camlyeu		*camlyau, -lwon*	*camlw*
can(h)oligyon	*kan(h)olic*		*canolig, cenolig*
karcharoryon	*k/carcharawr*	*carcharorion*	*carcharor*
cassogyon		*casogion*	*casog*
keluytyeid	*k/celuit*	*celfydd(i)on, -(i)aid*	*celfydd*
keluytodyon	*keluydawt, -yt*	*celfyddydau, -(i)on, -oedd*	*celfyddyd*
kerdoryon	*kerdawr*	*cerddorion*	*cerddor*
kicytyon	*kygyd*	*cigyddion*	*cigydd*
cleuion	*claf*	*cleif(i)on, clafon*	*claf*
clauorion	*clafwr*		*clafwr, clafor*
clodyeu	*clawd*	*cloddiau, -ion*	*clawdd*
cloriou	*claur*	*cloriau, -ion*	*clawr*
cletyfrutyon	*cledyfrud*	*cleddyfruddion*	*cledyfrudd*
cleuytyeu	*cleuyt*	*clefyd(i)au, -(i)on, -oedd*	*clefyd*
cochyon	*coch*	*cochion*	*coch*
coelyon	*coel*	*coeliau, -ion*	*coel*
coiliou	*coel*	*coeliau, -ion*	*coel*
cofiain	*cof*	*cof(i)on, -(i)au, co(e)au, -(i)ain, -awr*	*cof*
cofion	*cof*	*cof(i)on, -(i)au, co(e)au, -(i)ain, -awr*	*cof*
cofyeu	*cof*	*cof(i)on, -(i)au, co(e)au, -(i)ain, -awr*	*cof*
coffeion	*coffa*	*coffeion, -aon, -âu*	*coffa*
corforion	*k/corf*	*cyrff, -au, corffoedd, -au*	*corff*
creirieu	*creir, kereir*	*creiriau, -iaid*	*crair*
creaduryeu	*creadur*	*creaduriaid, -(i)au*	*creadur*
creaduryeu	*creaudir, creawdyr*	*creawdwyr*	*creawd(w)r, -ur*
cristonogion	*cristaun*	*Cristnogion*	*Crist(i)on*
cutinniou		*cudyn(i)au*	*cudyn*
kebydyon	*kebyd*	*cybyddion*	*cybydd*
cyfeillion	*kyfeillt*	*cyfeill(i)on, -iaid*	*cyfaill(t)*
kyuaruogyon	*kyuaruawc*	*cyfarfogion*	*cyfarfog*
ciphillion	*kiffil*	*cyffyllion, -au*	*cyffyll*
kyfliwyon	*kyfliw*	*cyfliwiau*	*cyfliw*
cyfluddion	*cyfluyt*	*cyfluyddion*	*cyfluydd*
cyfoedion	*kyfoet*	*cyfoed(i)on, -i*	*cyfoed*
kyuoethogyon	*kyuoethawc*	*cyfoethogion*	*cyfoethog, -aethog*
kyureidyeu	*kyfreit*	*cyfreidiau*	*cyfraid*
cyfreithiau	*cyfreith*	*cyfreithiau, -ion*	*cyfraith*
kylwydogyon			*cylwyddog*
kymynogyon	*kymynawc*	*cymynogion*	*cymynog*
cynnebigion	*cynhebic*		*cynhebyg*
kyn(n)reinyon	*kynran*	*cynrain, cynreinion*	*cynran*
kinytion	*kynyt*	*cynyddion*	*cynydd*
donyeu	*dawn*	*doniau*	*dawn*

donyon	dawn	doniau	dawn
dedwytyon	detwyd	dedwyddion	dedwydd
defnydyeu	defnyd	defnyddiau, -ion	defnydd
deccolion		degolion	degol
dewinion	dewin	dewiniaid, -oedd, -ion	dewin
dialuoryon		dialforion	dialfawr
diuogyon	difyawc		dif(i)og
diuerogyon		diferiogion	diferiog
digassogyon	digassawc	digasogion	digasog
disgynnyeit		disgynyddion	disgynydd
doethion	doeth	doeth(i)on, -iaid	doeth
dreigiau	dreic	dreig(i)au, -ioedd	draig
dreigioedd	dreic	dreig(i)au, -ioedd	draig
drudyon	drud	drudion	drud
dydyeu	dyd	dyddiau, dieu, -oedd	dydd
dyledogyon	dyledawc	dyledogion	dyl(y)edog
dinion	din	dyn(i)on, -ionau, -(i)addon, -eddon, -eddach	dyn
etiuyon	edif		edif
eneidyeu	eneid	eneidiau	enaid
egyrtholyon			engyrthol
eirchyon	erch	eirch(ion)	erch
eririon	eryr	eryrod, eryron	eryr
esborthyon (ys…)		ersborthion, ysborthion	esborth, ysborth
estronyon	estrawn	estroniaid, -ion	estron
aurdorchogion (eur…)	eurdorchawc	eurdorchogion (aur…)	eurdorchog (aur…)
fonogion		ffonogion	ffonnog
frydyeu	frut	ffryd(i)au, -oedd, ffryd	ffrwd
funiou		ffun(i)au, -oedd	ffun
guorennieu		goreniau	g(w)oren
geiryeu	geir	geir(i)au	gair
garhirion			gar(h)ir
geleurutyeid	geleurud	geleuruddiaid	geleurudd
gelinion	gelin	gelynion, -iaid, -au	gelyn
gleiniou	glein	gleiniau, -ion	glain
gleissyon	glas	gleision	glas
glin(n)yeu	glin	gliniau	glin
gofutyeu	gofit, gofut	gofidiau, -(i)on	gofid, gofud
gorchordyon		gorchordd(i)on, gorchyrddon	gorchordd
grephiou		greiff(t)iau	graiff(t)
g(a)ranwinion	grannwenn, granwyn(n)	granwynion	granwyn
groecyon	groec	Groegion	Groeg
grudyeu	grud	gruddiau, -ion	grudd
gweillyon	gwaell	gweill(ion)	gwaell
gweinieit	guan, gwan	gweiniaid, -ion, -aint	gwan
gweinion	guan, gwan	gweiniaid, -ion, -aint	gwan

gweision	*gwas*	*gweis, -(i)on*	*gwas*
gweilwyon	*gwelw*	*gwelwon, gweilw, -(i)on*	*gwelw*
gwirion	*gwir*	*gwirion*	*gwir*
gwledolyon			*gwleddol*
gwychyrolyon		*gwychrolion*	*gwychrol*
gwydyeu	*gwid*	*gwyd(i)au, -ion, -oedd*	*gwŷd*
gwylyon	*gwyl*	*gwyl(i)au, -ion*	*gŵyl*
gwyllion	*gwyll(t)*	*gwyll(i)on, -tion, -toedd, -ioedd, -esoedd*	*gwyll(t)*
gwyllyoet	*gwyll(t)*	*gwyll(i)on, -tion, -toedd, -ioedd, -esoedd*	*gwyll(t)*
gwin(n)ion	*gwyn(n), gwen(n)*	*gw(y)nion*	*gwyn*
gwynnyeu	*gwyn*	*gwyniau, gwniau*	*gwŷn*
gwyrthyeu	*gwyrth*	*gw(y)rthiau*	*gwyrth*
haelion	*hael*	*hael(i)on*	*hael*
heirtyon	*hard*	*heirdd(ion)*	*hardd*
holion	*hawl*	*hawl(i)au, -ion, holion*	*hawl*
hemyeint	*hemm*	*hemiaint, -au*	*hem*
hestoriou	*hestawr*	*hestor(i)au*	*hestor*
hirion	*hir*	*hirion*	*hir*
hirddiau	*hirddyd*	*hirddyddiau*	*hirddydd*
hirguynion	*hirwyn*	*hirwynion*	*hirwyn*
hoedyluyrryon	*hoydylfyrr*	*hoedlfyrion*	*hoedlfyr*
hwyluoryon	*hwyluawr*	*hwylforion*	*hwylfawr*
lleygyon	*lleyc*	*ll(e)yg(i)on, -iaid*	*ll(e)yg*
llaurotyon		*Llafroddion*	*Llafrodd*
llauuryeu	*llafur, llauur*	*llafur(i)au, -ion*	*llafur*
lleithyryon	*llath(y)r*	*llathr(i)on, lleithr(i)on*	*llathr*
llawuorynyon	*lawuorwyn*	*llawforynion*	*llawforwyn*
lledrudyon			*lledrudd*
llefesigion		*llefesigion*	*llefesig*
llidruddion			*llidrudd*
llithyon		*llithoedd, -(i)au, -ion*	*llith*
llofrutyeid	*llofrut*	*llofruddiaid, -ion, -iau*	*llofrudd*
llurugogyon	*llurugawc*	*llurigogion, llurugogion*	*llurigog, llurugog*
lluyddion	*lluyd*	*lluyddau, -(i)on*	*lluydd*
llwydyon	*llwyt*	*llwyd(i)on*	*llwyd*
llychlynnigyon		*Llychlynigion*	*Llychlynnig*
linniou	*lynn*	*llynoedd, -(i)au, -ydd, linnouein*	*llyn*
mebion	*mab, map*	*meib(i)on, mabion, meib*	*mab*
meibion	*mab, map*	*meib(i)on, mabion, meib*	*mab*
madyoet	*mad*	*madioedd*	*mad*
meirieu	*maer*	*meiri, -iau, -ion, -ydd, -iaid*	*maer*
merion	*maer*	*meiri, -iau, -ion, -ydd, -iaid*	*maer*
marchogion	*marchawc*	*marchogion, merchyg*	*marchog*

meirwyon	*marw*	*meirw, -(i)on*	*marw*
morion	*mawr*	*mawr(i)on, morion*	*mawr*
medylyeu	*med(d)wl*	*meddyliau, -(i)on*	*meddwl*
meillyon		*meill(i)on*	*meillionen*
meruynyawn		*Merfynion*	*Merfyn**
merinnyeu	*merin*	*meriniau*	*merin*
milioet	*mil*	*mil(i)oedd*	*mil*
monwyssyon		*Monwys, -(i)on, -iaid*	*Monwysyn*
morynion	*morwyn*	*moryn(i)on, morw(y)nion*	*morwyn*
mythyon	*mwth*	*myth, -(i)on*	*mwth*
myrdyoed	*myrd*	*myrdd(i)oedd, -ion*	*myrdd*
neiuyon		*neifion*	*nef*
pechaduryeit	*pechadur*	*pechaduriaid*	*pechadur*
pellennigion	*pellennic, pellynn(h)ic*	*pellenigion*	*pellennig, pellynnig*
pennadurion	*pennadur*	*penaduriaid, -(i)on*	*penadur*
pendrychyon		*pendrychion*	*pendrwch*
penguchogion		*penguchogion*	*penguchog*
pilion	*pil*	*pilion, -iaid, pilons*	*pil*
pleidyeu	*pleit*	*pleidiau, -ioedd*	*plaid*
plenhigyon		*planhigion*	*planhigyn*
plygeinyeu	*plygeint*	*plygein(i)au*	*plygain(t)*
porthorion	*porthawr*	*porthorion*	*porthor*
powyssyon		*Powysion*	*Powysyn*
preidyawr	*preid*	*preidd(i)au, -(i)awr, -(i)oedd*	*praidd*
preityeu	*preid*	*preidd(i)au, -(i)awr, -(i)oedd*	*praidd*
preityoet	*preid*	*preidd(i)au, -(i)awr, -(i)oedd*	*praidd*
priodorion	*priodawr*	*priodorion*	*priodor*
prydyd(d)yon	*prydyt*	*prydyddion*	*prydydd*
reidyeu	*reid*	*rheiddiau*	*rhaidd*
r(h)eidussyon	*reidus*	*rheidus(i)on, -iaid*	*rheidus, rheudus*
rinnyeu	*rin*	*rhin(i)au, -(i)oedd*	*rhin*
ringuedaulion			*rhinweddol*
rodyon	*rod(d)*	*rhoddion, -(i)au*	*rhodd*
rodolyon		*rhodolion*	*rhodol*
rudyon	*rud*	*rhuddion*	*rhudd*
runcniau	*rwgc*		*rhwnc*
rydyeu	*rit*	*rhyd(i)au, -oedd, -on*	*rhyd*
ryddyon	*ryd*	*rhyddion*	*rhydd*
ryveluodogyon		*rhyfelfodogion*	*rhyfelfodog*
rinion	*rin*		*rhyn*
seinhyeu	*sant*	*saint, seint(i)au, sein(i)au*	*sant*
seiuogion		*seifogion*	*seifog, safog*
seirchyawr		*seirchiawr*	*seirch*
serchogion	*serchawc*	*serchogion*	*serchog*
sulyeu	*sul*	*Sul(i)au*	*Sul*
ssivyon	*syw*	*sywion*	*syw*

sywedytyon	sywedyd	sywedyddion	syw(i)edydd
tar(y)anogyon	taryanawc	tarianogion	tarianog
termisceticion		terfysgedigion	terfysg(i)edig
termudyon	termud	termudion	termud
tirion			tirion (pl.)
toruogyon	toruawc	torfogion	torfog
traedsychyon			traedsych
traethaduryon	traethadur	traethadurion	traethadur
treissyeu	treis	treisiau, -ion	trais
treissyon	treis	treisiau, -ion	trais
trychion	troch, truch, trwch	trych(i)on	trwch
tyryoet	twr	tyr(i)au, -(i)oedd, tyrod	tŵr
tystyon	tyst	tyst(i)on, -iau	tyst
tywyssogion	tywyssawc	tywysogion	tywysog
ucheneidyeu	ucheneid	uchene(i)d(i)au, uch(e)neidion	uchenaid
uncenetticion		ungenedigion	ungenedig
unolion		unolion	unol
wyryon	wyr	wyr(i)on, -iau	ŵyr
ymchwelion	ymchuel, ymchoel	ymchwelion, -au	ymchwel, ymchoel
ysprydyeu	yspryt	ysbryd(i)on, -(i)oedd, -(i)au	ysbryd
ysglyuyon	ysglyf, ysgyuyl	ysglyf(i)on, -iaid	ysglyf
ysgodogyon		ysgodogion	ysgodog(yn)
ysgyryon	ysgwr	ysgyr, -(i)on	ysgwr
cimmaeticion			
degion		deon	
dicnchiriueticion			
dubeneticion			
ellesheticion			
godybrion			
guotricusegeticion			
lleisiawn		Lleision	
madogyon		Madogion	
meneiuyon		meneifion	

Appendix 2. Plurals with irregular *i*-affection

Old pl.	Old sg.	Modern pl.	Modern sg.
degion	*dag**	*deon*	
anghofiau	*anghof*	*anghofiau, -ion*	*angof*
argosbion		*argosbion*	*argosb*
beirdon	*bard*	*beirdd, -ion, -iaid*	*bardd*
berion	*beryf*	*beryon, -yfon, -ïon*	*bery(f)*
bleinon	*blaen*	*blaen(i)au, -ion, -(i)aid, -edd*	*blaen*
bylcheu	*bwlch*	*bylch(au)*	*bwlch*
byrteu	*bwrd*	*byrdd(au), -oedd*	*bwrdd*
byrtoet	*bwrd*	*byrdd(au), -oedd*	*bwrdd*
keidron	*kadir*	*ceidrion*	*cadr*
keithon	*caeth*	*caethion, -iaid, caith*	*caeth*
cemmein	*cam*	*camau, cemmein*	*cam*
cochyon	*coch*	*cochion*	*coch*
cofiain	*cof*	*cof(i)on, -(i)au, co(e)au, -(i)ain, -awr*	*cof*
cofyeu	*cof*	*cof(i)on, -(i)au, co(e)au, -(i)ain, -awr*	*cof*
cofion	*cof*	*cof(i)on, -(i)au, co(e)au, -(i)ain, -awr*	*cof*
corforion	*corf*	*cyrff, -au, corffoedd, -au*	*corff*
cynfreinon	*cynfran*	*cynfrain*	*cynfran*
kyngreinon	*kyngran*	*cyngrain, cyngrein(i)on*	*cyngran*
kynreinon	*kynran*	*cynrain, cynreinion*	*cynran*
drygoet	*drwc*	*dryg(i)au, -ion, -oedd*	*drwg*
drysseu	*drws*	*drws(i)au*	*drws*
esborthyon (y…)		*ersborthion, ysborthion*	*esborth (y…)*
esgereint	*esgar*	*esgarant, esgeraint (y…)*	*esgar*
frydeu	*ffrwt*	*ffryd, -(i)au, -oedd,*	*ffrwd*
gleisson	*glas*	*gleision*	*glas*
golygon	*golwc*	*golygon, -oedd, -edd*	*golwg*
gorchyrdon		*gorchordd(i)on, gorchyrddon*	*gorchordd*
gorulycheu	*gorflwch*	*gorflychau*	*gorflwch*
grephiou		*greiff(t)iau*	*graiff(t)*
gweinon	*gwan*	*gweiniaid, -ion, -aint*	*gwan*
gweisson	*gwas*	*gweis, -(i)on*	*gwas*
gweilwon	*gwelw*	*gwelwon, gweilw, -(i)on*	*gwelw*
hemyeint	*hemm*	*hemiaint, -au*	*hem*
lliwydoet	*lliwed*	*lliwedawr*	*lliwed*
lleeu	*llw*	*llyfon, llwon, -aint, -au, llyain, -au, -on, llyfau, -oedd, llwfon, lleiau, llau, llywaint*	*llw*
lichou	*llwch*	*llychau*	*llwch*
meibon	*mab*	*meib(i)on, mabion, meib*	*mab*

mebion	*mab*	*meib(i)on, mabion, meib*	*mab*
madyoet	*mad*	*madioedd*	*mad*
merion	*maer*	*meiri, -iau, -ion, -ydd, -iaid*	*maer*
mawrdrygeu	*mawrdrwc*	*mawr ddrygau*	*mawrddrwg*
pillou	*pull*	*pyllau (pwllau), pyllod, pyll*	*pwll*
ringuedaulion			*rhinweddol*
rodyon	*rod(d)*	*rhoddion, -(i)au*	*rhodd*
runcniau	*rwgc*		*rhwnc*
seineu	*sant*	*saint, seint(i)au, sein(i)au*	*sant*
tlysseu	*tlus*	*tlysau (tlwsau), tlysod*	*tlws*
trychon	*trwch*	*trych(i)on*	*trwch*
tyllon	*twll*	*tyllau (twllau), tyll, -(i)on*	*twll*
tyrau	*twr*	*tyr(i)au, -(i)oedd, tyrod*	*tŵr*