

## Notes on the Welsh expression of time

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There are some peculiarities about the expression of time in the Welsh language. First of all, it is constantly ‘analog’ rather than ‘digital’; i.e., the time is described in terms of a clock-face rather than numbers. In Welsh expressions analogous to English ‘two twenty’ (for 2:20) simply do not exist. Instead they regularly use expressions which would be ‘twenty past two’ in English. Secondly, in the expression of time they use the so-called traditional vigesimal counting system. Therefore, 24 minutes would be expressed as ‘four minutes on twenty’. These peculiarities (which in fact seem peculiar only when judged from the standpoint of the equivalent English expressions) are always mentioned in Welsh textbooks or grammar books (e.g. Jones 1977:302; Davies & Davies 1980: 59-60; Jones 1991:74-75; King 2003:118; Brake & Jones 2010:242-244; Jones 2010: 111-113). However, to the best of my knowledge it has not been fully explained to what extent this ‘policy’ of the ‘analog’ and ‘vigesimal’ expression is held in spoken Welsh<sup>1</sup>. The purpose of this study notes is to summarize general features of the Welsh expression of time and give a full timetable of how to say the time (from ‘two o’clock’ to ‘three o’clock’).

### 1. Counting systems in Welsh: the vigesimal system

There are two types of counting system in Welsh, a decimal one and a vigesimal one (‘y system ugeiniol’; Thomas 1996:296)<sup>2</sup>. In both ways the numbers from one to ten are the same.

<sup>1</sup> In most Welsh textbooks or grammar books, they give example expressions for times that are multiples of five, such as, 2:00, 2:10, 2:15, 2:20, 2:25, 2:30, 2:35, 2:40, 2:45, 2:50, but not, for example, 2:24 or 2:36. Jones (2010) gives the example for 2:31 (*Mae’n naw munud ar hugain i dri/It’s twenty-nine minutes to three*) and 6:17 (... *am ddwy funud ar bymtheg wedi chwech/at seventeen minutes after six*).

<sup>2</sup> The vigesimal system is older and more traditional. According to Thomas, the decimal system developed first from the need to refer to a hymn number during the service in a nonconformist chapel, though it had also been used to refer to a psalm number. The major impetus was when various fields of science started to be written about through the medium of Welsh (Thomas 1996: 299).

Table 1. *The Welsh numerals from one to ten*

1. <i>un</i> ['i:n] <sup>3</sup>	2. <i>dau</i> ['dai] (mas.) <sup>4</sup> <i>dwy</i> ['dwi] (fem.)	3. <i>tri</i> ['tri:] (mas.) <i>tair</i> ['tair] (fem.)	4. <i>pedwar</i> ['pedwar] (mas.) <i>pedair</i> ['pedair] (fem.)
5. <i>pump</i> ['pimp]	6. <i>chwech</i> ['χwe:χ]	7. <i>saith</i> ['saiθ]	8. <i>wyth</i> ['oiθ]
9. <i>naw</i> ['nau]	10. <i>deg</i> ['de:g]		

After ten, the decimal system takes *deg* ‘ten’ as a unit, and ‘eleven’ will be *un deg un* (lit. ‘one-ten-one’), ‘twelve’ will be *un deg dau* ‘one-ten-two’, and so on, until we get to *dauddeg*<sup>5</sup> ‘twenty’ (lit. ‘two-ten’).

On the other hand, the vigesimal, or ‘traditional’ counting system has various non-decimal units such as *pymtheg* ['pəmθeg] ‘fifteen’ (lit. ‘five-ten’), *ugain* ['ɪgain] ‘twenty’, and *deunaw* ['dəinau] ‘eighteen’ (literally ‘two-nine’ (nine times two)). Another peculiarity is that it has compound numerals which make use of the preposition *ar* [ar] ‘on’ to show a number added on ten, fifteen, twenty, etc.; for example, ‘eleven’ is expressed as ‘one on ten’ (*un ar ddeg*<sup>6</sup>); ‘sixteen’ is ‘one on fifteen’ (*un ar bymtheg*); ‘twenty-one’ will be ‘one on twenty’ (*un ar hugain*<sup>7</sup>). Here is the list of numerals from eleven to thirty within the vigesimal system.

Table 2. *The Welsh numerals in the vigesimal system from eleven to thirty*

11. <i>un ar ddeg</i>	12. <i>deuddeg</i>	13. <i>tri ar ddeg</i>
14. <i>pedwar ar ddeg</i>	15. <i>pymtheg</i>	16. <i>un ar bymtheg</i>
17. <i>dau ar bymtheg</i>	18. <i>deunaw</i>	19. <i>pedwar ar bymtheg</i>

<sup>3</sup> I indicate pronunciation for most Welsh words that appear in this paper only when they appear for the first time. I follow Ball & Williams (2001) for a system of phonetic symbols for vowels and consonants. The exception is that I use the symbol [ɨ] rather than [ɔ] for the high back lax vowel.

<sup>4</sup> The numerals for 2, 3, 4 have both masculine (mas.) and feminine (fem.) forms. In this note I give temporal expressions that are most frequently introduced in Welsh textbooks and grammars, which are based on North Welsh, in which the word for ‘minute’ (*munud*) is a masculine noun. Therefore the masculine form of the numerals will suffice (e.g. *dau funud* for ‘two minutes’). However, it is to be noted that in South Welsh they use *munud* as a feminine noun and therefore the feminine numerals will be employed (e.g. *dwy funud* for ‘two minutes’).

<sup>5</sup> In Welsh the numeral *dau* ‘two’ causes soft mutation to the following word. Thus *dau + deg* will be *dauddeg* ['daiðeg], softening *d* [d] to *dd* [ð]. See the Appendix.

<sup>6</sup> The preposition *ar* causes soft mutation to the initial consonant of the following word. See the Appendix.

<sup>7</sup> The numeral for ‘twenty’, *ugain*, becomes *hugain* after the preposition *ar*.

20. <i>ugain</i>	21. <i>un ar hugain</i>	22. <i>dau ar hugain</i>
23. <i>tri ar hugain</i>	24. <i>pedwar ar hugain</i>	25. <i>pump ar hugain</i>
26. <i>chwech ar hugain</i>	27. <i>saith ar hugain</i>	28. <i>wyth ar hugain</i>
29. <i>naw ar hugain</i>		

It is the vigesimal numerals that are used in the expression of time, both for minutes and hours. It is understandably complicated and clumsy, and in many fields Welsh speakers prefer the decimal to the vigesimal system. In the expression of time, however, the vigesimal system is maintained, probably because, as we will see below, we only need to know the numerals from one to twenty-nine here (Thomas 1996: 299).

## 2. Singular nouns after the numerals

There is a further peculiarity with Welsh numerals. Welsh nouns have both singular and plural forms. When a noun follows a numeral, however, the noun will be in the singular form. For example, the noun for 'minute' is *munud* ['minid], and 'three minutes' will be *tri munud*, and not \**tri munudau* (*munudau* is the plural form of *munud*). In the case of a compound numeral in the vigesimal system, a noun follows the first element of that numeral. For example, 'thirteen minutes' will be *tri munud ar ddeg*. Here is a list of the combinations of the numeral (vigesimal) and the noun *munud*. There are certain conditions for mutation and for change of the numeral forms, which are mentioned in the footnotes.

Table 3. *The list of the expressions (numeral + *munud* 'minute') from one to thirty .*

1. <i>un munud</i>	2. <i>dau funud</i> <sup>8</sup>	3. <i>tri munud</i>
4. <i>pedwar munud</i>	5. <i>pum munud</i> <sup>9</sup>	6. <i>chwe munud</i> <sup>10</sup>
7. <i>saith munud</i>	8. <i>wyth munud</i>	9. <i>naw munud</i>
10. <i>deng munud</i> <sup>11</sup>	11. <i>un munud ar ddeg</i>	12. <i>deuddeng munud</i>
13. <i>tri munud ar ddeg</i>	14. <i>pedwar munud ar ddeg</i>	15. <i>pymtheng munud</i>

<sup>8</sup> The numeral *dau* causes soft mutation on the initial consonant of the following noun (see also the expressions for '17 minutes' and '22 minutes' (which contain *dau*). See the Appendix.

<sup>9</sup> The numeral *pump* 'five' becomes *pum* before a noun (see also the expression for '25 minutes').

<sup>10</sup> The numeral *chwech* 'six' becomes *chwe* before a noun (see also the expression for '26 minutes').

<sup>11</sup> The final consonant of the numeral *deg* 'ten', as well as *deuddeg* 'twelve' and *pymtheg* 'fifteen', nasalizes to *deng* ['den] before a noun beginning with a nasal consonant. However, in spoken Welsh, many people simply say *deg munud* without nasalization as well.

16. <i>un munud ar bymtheg</i>	17. <i>dau funud ar bymtheg</i>	18. <i>deunaw munud</i>
19. <i>pedwar munud ar bymtheg</i>	20. <i>ugain munud</i>	21. <i>un munud ar hugain</i>
22. <i>dau funud ar hugain</i>	23. <i>tri munud ar hugain</i>	24. <i>pedwar munud ar hugain</i>
25. <i>pum munud ar hugain</i>	26. <i>chwe munud ar hugain</i>	27. <i>saith munud ar hugain</i>
28. <i>wyth munud ar hugain</i>	29. <i>naw munud ar hugain</i>	30. <i>deng munud ar hugain</i>

### 3. *cloch* ‘clock’

In the expression of ‘hour’, Welsh uses the word *cloch* ([ˈklox]), a feminine noun originally meaning ‘a bell’. The word came to be used when a bell within a clock-tower in a town would announce the time in Europe in the middle ages (the custom started in the thirteenth century). According to *Geiriadur Prifysgol Cymru* (henceforth *GPC*), the oldest attestation of the word for the purpose of telling the hour of time goes back to the 16<sup>th</sup> century. The word *cloch* is preceded by the definite article ‘y’ [ə]. In Welsh, when a feminine singular noun follows a definite article, the initial consonant undergoes soft mutation in which [k] is softened to [g], which will render *y gloch* (see the Appendix). Then this noun phrase follows the preposition *o* (meaning ‘of’ or ‘from’) and the whole expression will be *o’r gloch*<sup>12</sup>. The phrase *o’r gloch* follows a numeral in the vigesimal system from one to twelve as follows.

Table 4. List of the expressions for hours of time from 1 o’clock to 12 o’clock

1:00	<i>un o’r gloch</i> <sup>13</sup>	7:00	<i>saith o’r gloch</i>
2:00	<i>dau o’r gloch</i>	8:00	<i>wyth o’r gloch</i>
3:00	<i>tri o’r gloch</i>	9:00	<i>naw o’r gloch</i>
4:00	<i>pedwar o’r goch</i>	10:00	<i>deg o’r gloch</i>
5:00	<i>pump o’r gloch</i> <sup>14</sup>	11:00	<i>un ar ddeg o’r gloch</i> <sup>15</sup>

<sup>12</sup> In Welsh the definite article *y* becomes enclitic ‘r [r] to a preceding word when it ends in a vowel. Therefore, the preposition *o* + *y gloch* will be *o’r gloch*.

<sup>13</sup> According to *GPC*, in the expression of time, they used to use the preposition *ar* ‘on’ rather than *o*. So 1:00 would be *un ar y gloch*, literally ‘one on the clock’, which, in my opinion, makes more sense if we consider the origin of the expression. However, the use shifted to the use of the preposition *o* ‘of, from’ under the influence of the English *o’clock* (< *of the clock*).

<sup>14</sup> The rule that *pump* becomes *pum* before a noun does not apply here, because *o’r* of *o’r gloch* is not a noun.

<sup>15</sup> The rule that a noun follows the first element of compound numerals (as noted in the

6:00	<i>chwech o'r gloch</i> <sup>16</sup>	12:00	<i>deuddeg o'r gloch</i> <sup>17</sup>
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#### 4. The expressions from 'two o'clock' to 'three o'clock'

As stated at the beginning, Welsh maintains the 'analog' rather than 'digital' expressions for time, i.e., all the expressions for minutes will be made in terms of clock-face. They use the preposition *wedi* [wedi] 'after' for one to thirty minutes, and the preposition *i* [i] 'to' is employed for thirty-one to fifty-nine minutes. All the minutes from one to thirty will be 'after' (*wedi*) the specific hour, and all the minutes from thirty-one to fifty-nine minutes will be 'to' (*i*) the following hour. Therefore, 2:03 will be 'three minutes after three' (*tri munud wedi dau*), and 2:57 will be 'three minutes to three' (*tri munud i dri*); note here that the preposition *i* causes soft mutation to the initial consonant to the following word (*dri* < *tri*).

Table 5 belows shows the full list of the expressions from two o'clock to three o'clock. They are basically a combination of the numerals with *munud* 'minute' (Table 3) and the prepositional phrase of *wedi/i* and the simple (vigesimal) numeral for the hour. Note here that for 15 minutes and 45 minutes the expression *chwarter* ['χwarter] 'quarter' is used instead of the numeral using *pymtheg* 'fifteen'; i.e. 2:15 is 'quarter after two' (*chwarter wedi dau*) and 2:45 is 'quarter to three' (*chwarter i dri*). Also note that for 30 minutes the word *hanner awr* ['haner 'aur] 'half-hour' is used, so 2:30 is 'half-hour after two' (*hanner awr wedi dau*).

Table 5. *The full list of the expressions for minutes from 'two o'clock' to 'three o'clock'*<sup>18</sup>

time	expressions	time	expressions
2:00	<i>dau o'r gloch</i>	2:31	<i>naw munud ar hugain i dri</i>
2:01	<i>un munud wedi dau</i>	2:32	<i>wyth munud ar hugain i dri</i>
2:02	<i>dau funud wedi dau</i>	2:33	<i>saith munud ar hugain i dri</i>

previous section) does not apply here, because *o'r gloch* is not a noun. Therefore, *o'r gloch* follows the compound numeral *un ar ddeg*.

<sup>16</sup> The rule that *chwech* becomes *chwe* before a noun does not apply here, because *o'r* of *o'r gloch* is not a noun.

<sup>17</sup> For 12:00 they also use *hanner dydd* 'half-day' (i.e. 'midday') and *hanner nos* 'half-night' (i.e. 'midnight').

<sup>18</sup> This list of the full expressions of time is made by my first Welsh teacher Dr Gwendraeth Morgan, who used to teach Welsh at Saint David's University College (now University of Wales Trinity Saint David's) at Lampeter, Wales. She sent me this list at my request. I will take this opportunity to thank Dr Morgan for providing this valuable list for me.

2:03	<i>tri munud wedi dau</i>	2:34	<i>chwe munud ar hugain i dri</i>
2:04	<i>pedwar munud wedi dau</i>	2:35	<i>pum munud ar hugain i dri</i>
2:05	<i>pum munud wedi dau</i>	2:36	<i>pedwar munud ar hugain i dri</i>
2:06	<i>chwe munud wedi dau</i>	2:37	<i>tri munud ar hugain i dri</i>
2:07	<i>saith munud wedi dau</i>	2:38	<i>dau funud ar hugain i dri</i>
2:08	<i>wyth munud wedi dau</i>	2:39	<i>un munud ar hugain i dri</i>
2:09	<i>naw munud wedi dau</i>	2:40	<i>ugain munud i dri</i>
2:10	<i>deng munud wedi dau</i>	2:41	<i>pedwar munud ar bymtheg i dri</i>
2:11	<i>un munud ar ddeg wedi dau</i>	2:42	<i>deunaw munud i dri</i>
2:12	<i>deuddeng munud wedi dau</i>	2:43	<i>dau funud ar bymtheg i dri</i>
2:13	<i>tri munud ar ddeg wedi dau</i>	2:44	<i>un munud ar bymtheg i dri</i>
2:14	<i>pedwar munud ar ddeg wedi dau</i>	2:45	<i>chwarter i dri</i>
2:15	<i>chwarter wedi dau</i>	2:46	<i>pedwar munud ar ddeg i dri</i>
2:16	<i>un munud ar bymtheg wedi dau</i>	2:47	<i>tri munud ar ddeg i dri</i>
2:17	<i>dau funud ar bymtheg wedi dau</i>	2:48	<i>deuddeng munud i dri</i>
2:18	<i>deunaw munud wedi dau</i>	2:49	<i>un munud ar ddeg i dri</i>
2:19	<i>pedwar munud ar bymtheg wedi dau</i>	2:50	<i>deng munud i dri</i>
2:20	<i>ugain munud wedi dau</i>	2:51	<i>naw munud i dri</i>
2:21	<i>un munud ar hugain wedi dau</i>	2:52	<i>wyth munud i dri</i>
2:22	<i>dau funud ar hugain wedi dau</i>	2:53	<i>saith munud i dri</i>
2:23	<i>tri munud ar hugain wedi dau</i>	2:54	<i>chwe munud i dri</i>
2:24	<i>pedwar munud ar hugain wedi dau</i>	2:55	<i>pum munud i dri</i>
2:25	<i>pum munud ar hugain wedi dau</i>	2:56	<i>pedwar munud i dri</i>
2:26	<i>chwe munud ar hugain wedi dau</i>	2:57	<i>tri munud i dri</i>
2:27	<i>saith munud ar hugain wedi dau</i>	2:58	<i>dau funud i dri</i>
2:28	<i>wyth munud ar hugain wedi dau</i>	2:59	<i>un munud i dri</i>
2:29	<i>naw munud ar hugain wedi dau</i>	3:00	<i>tri o'r gloch</i>
2:30	<i>hanner awr wedi dau</i>		

This list, provided by my Welsh teacher Dr Gwendraeth Morgan at my personal request, shows that the ‘analog’ and ‘vigesimal’ policy for temporal expressions in Welsh is apparently maintained to the fullest extent. However, from the point of view of Welsh-learners, the feeling of wonder still lingers. How do Welsh speakers manage to build up such clumsy expressions in case when the time has to be announced quickly as on a train platform or during a radio or TV broadcasting? Thomas notes on the competition

between the decimal and vigesimal numerals in Welsh and even in expressions of dates, which is another usage-field for the vigesimal numerals, there is a tendency to employ the decimal system through the school education, though he also comments that here confident Welsh speakers would still adhere to the traditional usage (299-300). It would be interesting to investigate to what extent the 'traditional' temporal expression is maintained in 'real' spoken Welsh, i.e., if there is not any situation in which native speakers might use the 'digital' expression, or if all speakers, at all levels, stick to this traditional usage in whatsoever contexts without exception.

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### Appendix

In Welsh, as in all the other Celtic languages, there is a system of mutation of initial consonants. There are three types of mutation, namely soft, nasal, and aspirate mutation. Consonants that undergo alteration differ according to the types of mutation. The mutation occurs when a word is preceded by a certain word or certain classes of word, or when it is in a certain grammatical position. For example, the possessive pronouns *ei* 'his', *fy* 'my', and *ei* 'her' cause soft, nasal, and aspirate mutation respectively to the initial consonant of the following word. Certain numerals and prepositions used in the expression of time cause soft mutation. The following table show the system of soft mutation and show how the initial consonant of certain words are mutated after the possessive *ei* 'his'.

Soft mutation

radical cons.	altered cons.	example words	after <i>ei</i> [i] 'his'
p [p]	b [b]	pen ['pen] 'head'	ben ['ben]
t [t]	d [d]	tŷ ['ti:] 'house'	dŷ ['di:]
c [k]	g [g]	ci ['ki:] 'dog'	gi ['gi:]
b [b]	f [v]	bryn ['brɪn] 'hill'	fryn ['vrɪn]
d [d]	dd [ð]	dydd ['di:ð] 'day'	ddydd ['ði:ð]
g [g]	- [-]	gwely ['gweli] 'bed'	wely ['weli]
m [m]	f [v]	merch ['mɛrɰ] 'girl'	ferch ['vɛrɰ]
rh [ <sup>h</sup> r]	r [r]	rhif [ <sup>h</sup> 'ri:v] 'number'	rif ['ri:v]
ll [ɬ]	l [l]	llaw ['lau] 'hand'	law ['lau]