

Coping with an expanding vocabulary: the lexicographical contribution to Welsh

Abstract

The Welsh language, as a lesser-used language with English as an immediate neighbour, has inevitably borrowed much of its vocabulary from that language (or its precursors) as well as inheriting a considerable vocabulary from Latin via Brythonic. Welsh lexicography dates back to at least the 15th-century bardic glossaries and the first Welsh dictionary was printed in the mid-16th century. Most Welsh dictionaries are bilingual with either Latin or English, and Welsh lexicographers have been surprisingly influential in the development of the lexicon with many of their neologisms being adopted into the modern lexicon. Modern prescriptive lexicography and terminology have tended to promote what some linguists deride as a ‘purist’ approach but which has in fact proved to be a practical solution which has succeeded in expanding the vocabulary in a way acceptable to many speakers. Inevitably, since all are fully bilingual, Welsh speakers in Wales have continued to borrow vocabulary extensively from English.

1. Introduction

Yr ydym wedi bod yn rhy selog o lawer, yn y dyddiau a fu, yn dyfeisio geiriau newydd am bob dim ..., gan dybied mai iaith bur yw iaith a’i geiriau’n perthyn dim i eiriau’r un iaith arall. Ffolineb yw hynny: y mae gan bob iaith allu i fabwysiadu geiriau estronol yn eiriau iddi ei hun. Ac y mae yr iaith Gymraeg wedi mabwysiadu cannoedd o eiriau Lladin a geiriau Saesneg erioed, ac y maent yn eitha-geiriau Cymraeg erbyn hyn. Y prawf o air Cymraeg yw, a arferir ef gan y bobl ai peidio? os y gwneir, y mae yn air Cymraeg; os na wneir, nid yw. Felly y mae cloc yn air Cymraeg, ond nid yw awrlais. Tra’n ceisio puro yr iaith yn y dull plentynnaidd hwn, collasom ein golwg yn llwyr ar ei phriod-ddull. Y priod-ddull sydd yn bwysig; a phriod-ddull yr iaith Gymraeg sydd mewn perygl. (Jones, 1887: 181).

We have been far too eager, in past times, to devise new words for everything..., thinking that a pure language is a language whose words do not belong to any other language. That is foolishness: every language has the ability to adopt foreign words as its own. And the Welsh language has ever adopted hundreds of Latin and English words, and they are passable Welsh words by now. The proof of a Welsh word is, is it used by the people or not? if it is, it is a Welsh word; if it is not used, it is not. Thus cloc is a Welsh word, but awrlais is not. Whilst trying to purify the language in this childish way, we lost sight completely of its idiom. It is the idiom which is important; and it is the idiom of the Welsh language which is in danger.

These are the forthright views of John Morris Jones, an influential Welsh grammarian and later Professor of Welsh at Bangor in North Wales, writing in a popular Welsh journal in 1887 under the title ‘Suggestions for Welsh writers’. It highlights a problem that is common to many lesser-used languages which are obliged to expand their vocabulary to accommodate new inventions and concepts: to what extent can a language draw on its own internal resources in the face of a deluge of borrowings?

This paper seeks to explore the contribution of Welsh lexicographers to the development of the Welsh language over the past 500 years by examining the percentage of first attestations of their evidence in the standard historical dictionary of Welsh, *Geiriadur*

Prifysgol Cymru (GPC). Comparison is made also with some particularly influential works, such as the Bible (1588, 1620) and two major 18th-century authors. The challenges of lexical expansion in lesser-used languages such as Welsh are examined, including the role of lexicography in promoting linguistic ‘purism’, particularly in the 19th century, and continued to some extent by dictionaries such as the *Welsh Academy English-Welsh Dictionary* (GA, 1995). This is contrasted with the descriptive role of GPC. Various methods of creating neologisms are examined: combining existing elements; using prefixes and suffixes; respelling borrowings from English, Latin, Greek, and other languages; and repurposing obsolete words. Welsh terminologists in the 20th and 21st centuries, largely in the field of education, have had a considerably greater influence on the language than is the case with major languages and this is reflected in modern dictionaries.

2. Background

2.1 *The Welsh Language.*

Welsh is one of the last few remnants of a group of Celtic languages once spoken across much of Europe. By the early medieval period, the Celtic languages had been confined to the north-western periphery of Europe. Latin had a considerable influence on Brythonic with around a thousand Latin words surviving into Welsh, including some common words for body parts such as *coes* (‘leg’) and *braich* (‘arm’). The Goedelic group of languages (comprising Irish, Scottish Gaelic, and Manx) was originally confined to Ireland, with some Irish settlements and linguistic influence in neighbouring areas, such as Scotland, the Isle of Man, and also to a lesser degree Cornwall and the far west of Wales. The Brythonic languages survived in southern Scotland, north-western England, Wales, and Cornwall, and Breton developed from the language of migrants from Cornwall and other parts of south-western Britain.

Elena Parina (2010) has studied the incidence of English and Latin borrowing into Welsh by examining the number of loans in the 1000 most common words in a one-million-word corpus of modern Welsh (Ellis et al., 2001). She lists the 87 Latin loanwords and the 40 English loanwords that occur in the one thousand most frequent Welsh words in the corpus (Parina, 2010: 185). Most of the Latin loans are either very old or else occur through later ecclesiastical influence. A few are very recent creations by terminologists, such as *cymuned* (‘community’) (which is first attested in 1949 according to GPC3). Some more recent learned borrowings in Parina’s list, such as *prifysgol* (‘university’) (first attested 1604–7) and *addysgol* (‘educational’) (first attested 1722) could be better described as compounds (*prif* (‘main’)+*ysgol* (‘school’) and *addysg* (‘education’)+*-ol* (adjectival ending)) rather than borrowings. Interestingly, both are first attested in dictionaries. It is questionable whether ancient loans from Latin should be considered as loanwords in Welsh, as the majority were originally borrowed into Brythonic which later evolved into the distinct languages of Breton, Cornish, and Welsh.

Wales came under Norman French influence in some areas following the Norman conquest of England in the mid-11th century and was effectively annexed by England in 1282, when the last native prince of Wales was slain. The dominant position of England was formalized by the Act of Union of 1536 which led to a gradual Anglicization of the upper echelons of society, and the acceleration of a process of lexical borrowing from English into Welsh, but hardly at all in the opposite direction (Durkin, 2014: 76–95). Trade with English market towns developed rapidly and led to the introduction of many English words into the Welsh lexicon at all levels of society, although the great majority of the population remained monoglot until well into the 19th century. The industrial revolution drew monoglot Welsh

speakers from rural Wales into the industrialized areas of South and North-East Wales, but also attracted workers from England, Ireland, and further afield.

2.2 The Number of Welsh Speakers.

At its peak in numerical terms, around 1900, Welsh was spoken by around a million people in Wales, over half the total population. The industrial revolution, which began early in Wales, created a demand for new vocabulary intelligible to the largely monoglot Welsh-speaking population and also made printing much cheaper leading to a boom in publishing in Welsh. Great efforts were made, largely by amateur lexicographers, to augment the vocabulary by combining existing Welsh lexemes. The bulk of the population, however, tended to adopt the new English vocabulary. A reawakening of nationalistic feelings in Wales towards the end of the 19th century led to the foundation of several important national institutions, such as the University of Wales, the National Museum in Cardiff, and the National Library in Aberystwyth. This was however shrouded by a strong sense of British national identity which had been fostered during the Victorian period but which was increasingly questioned following the devastation of the First World War.

By the middle of the 20th century the outlook for Welsh looked particularly bleak, but a growing feeling of national identity led to the gradual development of Welsh-medium education, and eventually to a devolved government with increasing powers. Welsh was made a mandatory subject in state schools in Wales in 1999 and in 2011 a virtual Welsh-medium college (the Coleg Cymraeg Cenedlaethol) was established within the existing university institutions in Wales specifically to promote teaching through the medium of Welsh. There has consequently been a steady increase in the demand for new Welsh terminology, largely from education and the public sector. The steady decline in the number of Welsh speakers appeared to have halted in the 1980s, according to the census figures, with the latest figures from the 2011 census showing 562,000 speakers (over 3 years old) or 19% of the population, compared with 508,098 in 1991 (Jones, [2012]: 16). Other surveys give substantially higher figures but are based on a smaller sample size:

The 2013-15 Welsh Language Use Survey showed that 24 per cent (677,800) of all those aged three and over could speak Welsh. This compares with 19.0 per cent (562,000) in the 2011 Census, 28 per cent (824,100) in the Annual Population Survey and 25 per cent (751,000) in the National Survey for Wales (Welsh Government et al., 2015: 114).

2.3 Comparative Statistics for First Attestations.

Geiriadur Prifysgol Cymru is the standard historical dictionary of Welsh, having a similar standing for Welsh speakers as the OED has amongst English speakers. Digitization of the data together with recent improvements in the software used by the GPC staff mean that it is now possible to ascertain the number of new senses or collocations and variant forms which are attributable to any particular source. Totals were calculated for a number of important Welsh dictionaries, and, by way of comparison, for the Welsh Bible and two influential eighteenth-century Welsh authors. These figures will be discussed in the sections which follow.

3. The Welsh lexicographical tradition

Welsh lexicography has a long history, going back to bardic glossaries of uncommon words which have survived from the 15th century but which doubtless continue an earlier practice. Traditional strict-metre Welsh poetry uses a complicated system of internal

consonantal alliteration, end-rhymes and internal rhymes, and various verse types, which calls for a rich vocabulary to enable the poet to be able to choose suitable words to satisfy all of these criteria. The bardic glossaries, were, therefore, a useful aid to poets, but very conservative.

In this section, the influence of a number of Welsh lexicographers will be quantified according to the percentage of first attestations from their dictionaries as recorded in GPC. These figures are not, of course, directly comparable for a number of reasons. Firstly, the earlier a source is, the more likely it is to be a first attestation. The lack of earlier attestations of a particular lexical item does not indicate that the author of the earliest surviving source was necessarily its creator. Also, where the total number of attestations is low, the figure for the ‘percentage of first attestations’ is inherently less statistically significant.

3.1 *William Salesbury*

The first printed dictionary in Welsh (WS) by William Salesbury (1520?–1584?) appeared in 1547, shortly after the official incorporation of Wales into England. Its avowed aim was to help Welshmen to speak English. It was a general Welsh-English dictionary, not confining itself to difficult words only (Mathias, 1959). Even so, 29.0% of the 5,857 senses, collocations, and variants cited from this dictionary in GPC represent first attestations. It must be borne in mind, however, that this was one of the first books to be printed in Welsh and therefore a relatively high percentage of first attestations is to be expected. Perhaps surprisingly, the OED lists WS as the first attestation of 21 English words including *chilblain*, *coolth*, *glum*, *homemade*, and *rug* (textile). The dictionary is also useful to English phoneticians for its valuable description of the pronunciation of the English of the period.

3.2 *Thomas Wiliems, John Davies, and their successors*

Between 1604 and 1607 the physician Thomas Wiliems translated the extensive and extremely popular Latin-English dictionary (Thom) compiled and printed by Thomas Thomas (1553–1588), printer to the University of Cambridge, which was based on the work of Guillaume Morel and Thomas Cooper and reprinted thirteen times by 1631 (McKitterick, 2008). Thomas Wiliems’s work (TW) was never published (Williams, 1959), but it was used extensively and heavily revised and abridged by John Davies (c. 1567–1644) as the Welsh-Latin part of his extremely influential *Dictionarium Duplex* (D) which appeared in 1632 (Roberts, 1959). This was an excellent Welsh-Latin / Latin-Welsh dictionary. Although a highly academic work, the *Dictionarium Duplex* set the standard for the language for centuries to come and had a great influence on subsequent lexicography. Both dictionaries have contributed many thousands of first attestations in GPC: 4,918 from TW (37.3% of all the citations from that work) and 3,618 from D (18.4%), reflecting Wiliems’s eagerness to coin new words to correspond to those in Thom, whilst Davies appears to have been more interested in recording existing usage, particularly amongst the works of the professional poets whose works he copied and studied.

Thomas Jones (1648–1713), an almanac writer and printer-publisher, sought to promote the language to a large audience by publishing small, cheap works and his Welsh-English dictionary (TJ) was instrumental in this, although it is largely derived from D, as reflected in its very low score of 6.7%, the second lowest of all the dictionaries mentioned here, for first attestations in GPC, despite being cited 4,359 times. Another, much larger, work derived from D is the work of Thomas Richards (TR) which was revised and reprinted several times. It is essentially a revised version of D, with the Latin replaced by English and with additions from later works, such as the pioneering *Archaeologia Britannica* (AB). It is unsurprising therefore that it has the lowest score (6.0%) for the percentage of first attestations in GPC of all the

dictionaries described here. AB itself was the product of Edward Lhuyd, ‘one of the pioneers of the comparative method in historical linguistics which placed the study of the Celtic languages on a sure foundation’ (Roberts, 2008), which included, amongst many other sections, an extensive list of additions to D, discoveries by Lhuyd rather than neologisms, with 20.4% of the 1,910 citations from AB in GPC being first attestations.

3.3 English–Welsh dictionaries

The first English-Welsh dictionary (SR, 1725), compiled by the printer-publisher Siôn Rhydderch (John Roderick), did not appear until 1725, and was reprinted several times (Davies et al., 1959). This was a comparatively small and cheap dictionary, with a fairly low first attestation score of 11.6%. It was followed, however, by the substantial English-Welsh dictionary (W) of the Rev. John Walters, which appeared in parts between 1770 and 1794 (W, 1794). It is perhaps no coincidence that this dictionary followed the publication of Dr Johnson’s ground-breaking English dictionary, which had been published in 1755, which may have led Walters to appreciate the need for a more comprehensive dictionary of Welsh. Walters supplies an extensive English vocabulary, with many English expressions, and also further defines the English words in English before providing Welsh equivalents and examples, especially from the Welsh Bible.

In contrast to Johnson, however, Walters clearly felt the need to expand the lexicon. His work was reprinted several times after his death and was used by other lexicographers who benefited from the thousands of neologisms that Walters created, most of which represent new words or collocations based on existing Welsh words or elements. W is cited as a first attestation in GPC 6,126 times, one of the highest rates of any dictionary, representing 26.4% of all the citations from W. Many of his suggestions were adopted and are in regular use in the language today.

3.4 A lexicographical anomaly

The end of the 18th century saw Welsh lexicography take a somewhat retrograde step with William Owen[-Pughe]’s strange Welsh-English dictionary (P, 1803) which was published in parts between 1793 and 1803. Pughe believed that languages were composed of ‘primitive elements’, mostly monosyllabic, and his dictionary applied this belief to the Welsh language. He was also a purist, and eschewed any words which appeared to have been borrowed from English. Pughe was well read in Welsh literature and his dictionary contains many citations from the literature with accompanying translations into English. He attempted to show the richness of Welsh by creating thousands of new words by combining elements and adding prefixes and suffixes, and then assigning meanings to them. Highly regarded by his contemporaries, his ideas were widely adopted, disrupting the academic study of Welsh for several generations. He also proposed altering the generally adopted orthography of the language, which had effectively been established by the publication of the 1620 revision of the Welsh translation of the Bible of 1588 (see 4.1, below).

Pughe’s orthography was not generally adopted, but it gave rise to various attempts to reform the spelling of Welsh. The orthography battle raged during the 19th century with numerous proposals published by the various parties and was only settled finally at the end of the century with the publication of a report by the Orthographical Committee of the Society for Utilizing the Welsh Language (1893). Most writers and publishers adopted the report’s recommendations which essentially restored the original biblical orthography of 1620 with a few minor changes. The orthography has remained unchanged since, apart from a few minor clarifications made by the Orthography Committee of the newly-constituted University of Wales (1928) with further clarifications in 1987, but with no changes to the basic principles.

3.5 Dictionaries and the industrial revolution

With the advent of industrialization, which occurred early in Wales because of the availability of coal and iron ore, printing and paper-making became mechanized and books became much cheaper to produce. A growing population, eager for education, provided a ready market for publishers of educational works, including dictionaries. Many dictionaries were published during the 19th century, most of which were highly derivative works based on earlier dictionaries and were intended for a mass readership. Most were bilingual, either English-Welsh or Welsh-English, and a number included pronunciation guidance for the English words. The first monolingual Welsh dictionary (Ellis, [1868]) was more a thesaurus than a defining dictionary, and was intended primarily for poets.

19th-century Welsh lexicographers generally believed that new technical terminology should be based on existing Welsh words and elements, whilst the population at large tended to borrow the English equivalent. This was not a new process but had been going on for centuries, however the enormous technical advances made during the 19th century greatly increased the number of new terms that were required.

Thomas Edwards, a London-based Welsh-speaking entrepreneur who was usually known by his bardic name ‘Caerfallwch’, felt the need to expand the technical vocabulary of Welsh, and published a substantial new English-Welsh dictionary (Caerfallwch, 1850). An augmented version of his dictionary was printed after his death (Caerfallwch, 1864). He described his method in a publication on Welsh orthography where he wrote: ‘The word which I have adopted for telegraph is *pellebyr*, from *pell*, distance; *eb*, to impart or communicate; and the termination *yr*’ (Edwards, 1847, 9). These are all native Welsh elements. Whilst his term gained some limited currency, the word that eventually emerged by popular consensus was *telegraff* or *teligrff*, a direct borrowing from English, first evidenced in Welsh in 1860. (The English word is itself a borrowing from French *télé-* and *-graphie*.) The same was true of countless other words, where neologisms formed from native elements were replaced in common use by English borrowings (see Appendix 1), although some learned creations did survive, such as *amlen* (‘envelope’) from *am-* (‘about’) and *llen* (‘a sheet’), first recorded in 1819, and now the standard literary word.

GPC’s editorial policy was to provide simply the date of first attestation after about 1800. The policy was only relaxed after the second edition had already started. It is therefore difficult to use statistical data for first attestations after 1800 as they are restricted to a much smaller span of the alphabet. Even so, of the 273 citations from Edwards’s work, no fewer than 60.0% are first attestations, reflecting the innovative nature of his dictionary.

3.6 D. Silvan Evans

One particularly prolific lexicographer, D. Silvan Evans, produced a two-volume English-Welsh dictionary (SE, 1852–1858) which introduced thousands of new coinages, mostly based on Welsh elements. The majority of these have not survived into modern usage, such as *perdoneg* for ‘piano’ (from *pêr* (‘sweet’), *tôn* (‘tone’), and the adjectival ending *-eg*). Based admittedly on a small sample of only 829 citations, for the reasons already mentioned, first attestations account for 34.6%. Evans came under the influence of Pughe’s ideas, as did most scholars of his generation, but according to Hughes (1959) he was ‘emancipated’ from such views in the 1870s.

Welsh dictionaries at this time were predominantly prescriptive, especially the smaller, more popular publications. However, in 1887 Evans began publishing his large historical dictionary (EWD, 1887–1906) in parts. This was contemporaneous with the Philological Society’s *New English Dictionary*, as the *Oxford English Dictionary* was originally known.

Evans's work contains many citations based on his own extensive reading and also on the lexicographical work that he acquired from Robert Roberts, Y Sgolor Mawr ('The Great Scholar'), who died in 1885 (Ellis, 1959). Unfortunately, Evans himself died in 1903 before the work could be completed, and it was only published as far as the word *ennyd* (under his son's editorship) in 1906 (Lloyd, 2004). This was the first truly descriptive dictionary of Welsh, but Evans was rather indiscriminating as a lexicographer and included many words of uncertain origin and even non-existent words, including many of Pughe's creations. As is to be expected, the percentage of first attestations from this descriptive dictionary is lower than for his earlier dictionary at 13.1% of 1,321 citations, and many of these are dubious. (The non-existent senses are, as a rule, excluded by GPC's editorial principles, although some acquired a brief life of their own when adopted by others.)

4. Neologisms in literature and translation

In order to provide some context for the figures for first attestations in GPC, a number of well-cited texts were examined. These include the Welsh Bible, which had a particularly strong influence on Welsh writing, as well as some more usual literary texts.

4.1 Bible translations

The translations of the Bible into Welsh are instructive as they are not only very long but also deal with objects and concepts which are less common in other contexts. William Salesbury's *Testament Newydd* (1567) is cited 7,684 times, of which 20.5% are first attestations. The 1588 translation of the full Bible by Bishop William Morgan is cited 8,969 times, with a higher percentage of first attestations of 25.6%, perhaps reflecting the more varied subject matter. The 1620 revision of the Bible is attributed largely to Richard Parry, but it is believed that John Davies, compiler of D, as mentioned above, provided considerable assistance. Interestingly, 19.5% of the 2,137 citations from the 1620 revision are first attestations in GPC, demonstrating the scale of the alterations made by Parry and Davies to Morgan's work. As mentioned above, this is the text that effectively established the orthographical system that is still used today, in much the same way that the 1611 King James version of the English Bible established a standard for written English.

4.2 Literature

Ellis Wynne (1671–1734) was a translator and the author, amongst other works, of *Y Bardd Cwsg* (1703), which has been described as 'a prose masterpiece' (Davies, 2001; Thomas, 2004). Of the 3,795 citations from his work in GPC, 10.9% are first attestations. This figure appears to be comparatively low compared with the dictionaries and Bible translations mentioned above, but nevertheless amounts to more than 400 first attestations. William Williams, Pantycelyn (1717–1791) was a prolific writer of hymns, poetry, and prose, including, for example, 'geographical, historical, natural, and other descriptions of all parts of the globe' (Morgan, 2004), necessitating numerous neologisms or borrowings. The greater variety of his work, is reflected in the fact that his works are cited 2,991 times in GPC, attaining a higher percentage of first attestations of 15.3%. Williams also introduced a number of dialect words and dialectal variants of words into literary Welsh, particularly through his hymns.

5. The influence of lexicography

5.1 Early lexicography

Lexicography had a considerable impact on the adoption of particular terms in the late 18th and 19th centuries, but the lexicographers themselves had no official status: most were ministers of religion. English-Welsh dictionaries inevitably had greater impact than Welsh-English ones, because they were used for writing in Welsh, and especially for translating into Welsh, although influential Welsh-English dictionaries were used by lexicographers as a source of new words for subsequent English-Welsh dictionaries. These early lexicographers aimed in the main to produce prescriptive works or at least pedagogical ones, and avoided wherever possible including direct loans from English. They strove to find or create words for new things or concepts using the existing resources of the language, and where they found those lacking they tended to use Latin or Greek bases, as in English dictionaries of that period. English loans tended to be ignored until they had become fully naturalized, and even then, some lexicographers, notably William Owen Pughe, eschewed them altogether (or gave them a false Welsh etymology).

5.2 20th-century lexicography

The 20th century saw the development of a more professional class of lexicographers including schoolteachers, academics, and indeed, although very much in the minority, professional lexicographers. Lexicography tended to become less prescriptive and more descriptive, although most still retained a significantly prescriptive approach. During the course of the 20th century, and especially in the latter half, terminology became increasingly important and many glossaries of technical terms in various fields were produced, usually by committees of subject specialists who had no particular terminological or lexicographical training. The works they produced were often inconsistent (both internally and especially in comparison with other glossaries, even in the same field), and inaccurate. For a thorough examination of 20th-century Welsh lexicography, and a comparative study of the major dictionaries of the period, see Heinz (2002).

5.2.1. *The Welsh Academy Dictionary*

The greatest influence on the lexis of Welsh in recent years has undoubtedly been *The Welsh Academy English-Welsh Dictionary* (GA), published in 1995. One of the editors, Bruce Griffiths, has described the methodology behind the dictionary, which began as a translation of Harrap's *Shorter English-French Dictionary*, but was extensively augmented with additional material. On the subject of coinages, Griffiths states (1999: 54):

Throughout, we were insistent that there should be no unnecessary or incautious coinages to fill gaps. If we could find somewhere a word or expression, even if attested in only one text or locality, then we adopted that as the recommended term or phrase.

This is a debateable approach to the problem, and one that professional terminologists tend to avoid because it can lead to the use of colloquial words or phrases as technical terms, which can appear inappropriate alongside more scientific terms. For popular use, however, it appears to be a commendable approach to retain the natural attributes of the language.

Griffiths goes on to discuss the problem of how to treat very specific terms for things which have never had any Welsh equivalent (Griffiths, 1999: 62):

Welsh sailors never devised their own terms to describe the rigging of a full-rigged sailing ship. Should we today bother to invent a Welsh term for *top fore-gallant* or

studding sail, etc.? In fact we have in our dictionary suggested Welsh equivalents for the sake of purists!¹

GA has been a boon to translators, especially now that it is available online free of charge, as it is more easily searchable than the printed edition. An increasing proportion of published work is now the product of professional translators, most of whom consider that it is important that the standard of translation is both consistent and comprehensible, whilst still respecting the ‘Sprachgefühl’ of the language by using idiomatic expressions where appropriate. Although GPC has only been able to cite from GA comparatively recently, it is significant that GA has already been cited 2,107 times, with 14.5% of those citations being first attestations.

In teaching science and mathematics in Welsh-medium schools, a choice is often given between instruction in English only and bilingual instruction, where all terms are presented in both languages. As Welsh-medium education becomes almost universal in Wales, it seems that some schools are effectively encouraging the use of many terms that would otherwise never be adopted. A colleague was surprised when his son came home from school and started talking naturally about *braster amlannirlawn* (‘polyunsaturated fat’, from *aml* (‘poly-’)+*an-* (neg.)+*dirlawn* (‘saturated’)). Even if such terms never become part of a speaker’s active vocabulary, they could at least be intelligible to many speakers who have been educated through the medium of Welsh.

5.2.2. *Geiriadur Prifysgol Cymru*

Geiriadur Prifysgol Cymru (GPC) is a descriptive historical dictionary of Welsh compiled by the University of Wales. It was edited over a long period starting in 1920: 27 years was spent collecting citation data, then followed a further 55 years of editing, with the dictionary published in four large volumes containing nearly 4,000 pages in 2002. As the most comprehensive Welsh dictionary, it is considered to set the standard for many aspects of the language, such as orthography, the gender of nouns, plural forms, and precise definitions. This gives the dictionary a dual role, partly descriptive and partly prescriptive, which can create some problems. These include trying to reconcile the standard spelling of a word with the actual evidence of its use, and deciding to what extent to include senses resulting from writers or lexicographers misunderstanding or misinterpreting earlier evidence of usage. As in the case of most historical dictionaries, there are strict controls on what is included in the dictionary. Many users tend to assume that the editors of large dictionaries try to include all the words in a language, but this, of course, is not possible or even desirable: otherwise the dictionary would become overloaded with words which have never gained any real currency in the language. GPC’s existing policy is to include words which have three independent attestations: that is they should be the work of three separate writers or speakers. Some exceptions are made for well-known hapaxes, for poorly attested words which nevertheless form a constituent part of other better attested words, and for words recorded as being in general use in a particular dialect although otherwise unattested.

Because of the huge amount of Welsh data now available online, as compared with the traditional, mostly printed and manuscript sources, this policy may need to be modified, as it is often impossible to identify the author or translator of a particular web page or the date of its composition. Also the standard of the written Welsh online can be much lower than the norm for more traditional sources because of its use in blogs and informal messages, as well as in material written by learners, automatic translation software, and inexperienced translators.

5.2.3. GPC Online and the GPC apps

A completely revised second edition of GPC is in progress, *a to brig* having been published to date. In June 2014 the full dictionary was published online and about three million look-ups per annum are conducted online. In February 2016 GPC was launched as iOS and Android ‘apps’, using the online database via the Internet, but also enabling users to download either the full text of the dictionary in its entirety or a smaller database omitting the citations. It is believed that this is the first large historical dictionary to be made available as an app. It has proven popular with users as it can be used anywhere as no Internet connection is required.

By extending the reach of the dictionary in this way it is likely to be even more influential in the future. However, some entries are around 60 years old, including many which were recent neologisms at the time of editing, some of which have been generally adopted into the language, but many of which are now obsolete. At present, there is no way of indicating this, but it may be desirable in the future to aid users by indicating which words are effectively obsolete, although this can be difficult to determine. All these factors can create problems in the field of terminology, in particular, as the terms recorded in the dictionary are not necessarily those recommended by the various standardizing bodies or even those currently in use. Because of the time taken to write and revise the entire dictionary, many of the terms to be found in it are not those in common use.

Ideally, GPC should be thoroughly revised, but to do that within the existing budget restraints would take many decades. Digitization programmes, especially those at the National Library of Wales, are making vastly more 19th- and 20th-century material available, making it possible both to antedate many of the earliest attestations of modern words, and to provide fuller evidence for words currently in use in new and expanding domains.

6. Welsh terminology

Terminology has had a much greater impact on the Welsh lexicon than on other more widely used languages. This is a result of the deliberate policy in the education sector from the middle of the 20th century onwards to enhance the vocabulary by means of subject-specific academic committees of specialists whose function was to create terms suitable for educational purposes.

6.1 *Non-puristic borrowings*

In modern practice, some terms are borrowed directly into Welsh, retaining their original spelling, such as *genre*, *ensemble*, and *entrepreneur*, from French or French via English, although Welsh transliterations of these are encountered occasionally, such as *jonr* and *onsombl*, and *entrepreneur* does occur in compounds such as *entrepreneuraidd* (with the Welsh adjectival ending *-aidd*), and *entrepreneuriaid* (‘entrepreneurs’) with a ‘mixed’ pronunciation, part-French and part-Welsh. A similar word is *pasteureiddio*, borrowed from the English *to pasteurize* (from the name of the French microbiologist Louis Pasteur), which is seen for example on food labelling in the word *pasteureiddiedig* (‘pasteurized’). (<eu> in Welsh is normally pronounced /ei/, not /ə/.)

Modern Welsh terminologists take a pragmatic approach to standardizing terminology. Some terms are borrowed directly from English, usually with a Welsh spelling. This is particularly true of internationally recognized terms such as those used as units of measurement: *cilogram* (‘kilogram’), *megabeit* (‘megabyte’), *mililitr* (‘millilitre’). The abbreviations of these terms also follow international practice, so *cilogram* is abbreviated to *kg*. The same is generally true of element names in chemistry, where a Welsh spelling of the international or English name is used, and the international symbol used for the abbreviation. Some terminologists even go so far as to suggest that the pronunciation of certain terms should change to match the orthography, so for example *ocsigen* /‘oxigen/ is used for

‘oxygen’ and *hydrogen* /'hædrogen/ is used for ‘hydrogen’ alongside *ocsijen* /'oxijen/ and *heidrojen* /'heidrojen/ in more popular usage. All of these have retained the initial stress of the English nouns, whereas Welsh is normally stressed on the penultimate. This policy has not been particularly successful, and has led to a lot of confusion as to the ‘correct’ pronunciation.

6.2 *Compounding from existing elements*

Modern terminologists have tried to create new terms from existing Welsh words wherever possible, with varying degrees of success. In many respects Welsh has succeeded in creating more intelligible terms than has English, because English has tended to base technical terminology extensively on Latin and Greek, which is now less intelligible to most people with the general decline in the teaching of classical languages in the UK. So whereas English has *veterinarian* or *veterinary surgeon* (based on the Latin word for cattle), Welsh has *milfeddyg* (literally ‘animal-doctor’), *milfeddygaeth* for ‘veterinary science’, *milfeddygol* for the adjective ‘veterinarian’, and so on. A word like *adareg* (from the word for ‘birds’ and the suffix *-eg* denoting a field of study) is much more immediately intelligible to a Welsh speaker, who is likely to understand the elements, than *ornithology* is to an uneducated English speaker, as are *adaregol* for ‘ornithological’ and *adaregwr* for ‘ornithologist’. *Serydd* (‘an astronomer’, from *sêr* (‘stars’) with the suffix *-ydd* denoting an agent) dates from at least 1632. It has been used as the base for the related terms *serydddeg* and *seryddiaeth* (‘astronomy’), *seryddol* (‘astronomical’) and *seryddwr* is the standard modern term for ‘astronomer’ and is even recorded in the term *tremfa seryddwyr* for ‘astronomical observatory’ in one dialect (Thomas, 1993: 808). Terms like these have been readily accepted because their meaning is self-evident and they are natural-sounding.

Similarly, a word like *trydan* (from the intensive prefix *try-* and *tân* ‘fire’) was probably coined by Pughe (P, 1803) to translate ‘electric fluid’ and has become the nationally accepted word for ‘electricity’ (alongside the borrowed *electrig*, *lectrig* which is used as both a noun and an adjective in Welsh, as in colloquial English) and a host of terms exist that are based on it, including *trydaneiddio* for ‘to electrocute’ and *trydan dŵr* for ‘hydroelectricity’. A related word, *gwefr* which dates from at least as early as the 12th century and is derived from Celtic originally, had the meaning ‘amber’, but it was ‘repurposed’ in 1850 to translate ‘electron’ on the lines of Greek ἤλεκτρον (‘electron’) which also meant ‘amber’ and ‘electrical attraction’, because rubbing amber generates a negative charge. This word has now been accepted as the standard term for ‘(electrical) charge’, and *ambr*, a borrowing from English which is first attested in Welsh from about 1500, is used for ‘amber’.

6.3 *Repurposing obsolete words as terms*

A good example of recycling old words is *mangre* which, in the 13th and 14th centuries meant a ‘stud or troop of horses’ (GPC), and then later had the meaning ‘place, location’, and is known to many people through its use in the Welsh Bible although it is no longer used colloquially. It is composed of two elements, *man* (‘a place’) and *gre* (‘a herd of horses’). Legislators in the Welsh Government required a term to convey the meaning ‘premises’ which in English law has a much broader definition than the non-legal modern use of the word, as defined by the *Oxford English Dictionary*: ‘A house or building together with its grounds, outhouses, etc., esp. a building or part of a building that houses a business’² and can also include trains, ships, and aircraft. The word was required to correspond to the English wording ‘It is against the law to smoke in these premises’ for display on signs. A single word was required to correspond to the English ‘premises’ and it was thought better to reuse *mangre* but give it a slightly different meaning which could be defined specifically in the legislation.³

6.4 Unexpected developments

The modern Welsh word for ‘television’ demonstrates the way in which a language community sometimes uses a new term in an unexpected way. The verb *teledu* was coined as the result of a newspaper competition from *tele-* (the international prefix) and *lledu* (‘to spread or broadcast’) corresponding with English (*to*) *televise*. At the same time, *teledydd* was coined for ‘television set’, but *teledu* began to be used with *set* (‘a set’) as *set deledu* in a calque on the English collocation *television set*. Then *teledu* on its own began to replace *set deledu* and to be used as a noun for ‘television’ generally, in much the same way that *television* has replaced *television set* in English. Some language purists tried in vain to eliminate the use of *teledu* as a noun, insisting that *teledydd* was the correct form. The establishment of a Welsh-language television channel in 1982 led to much greater use of the word and *teledu* is now the standard word which is rapidly replacing the borrowing *television* in colloquial use as well as the other coined term *radio gweld* ‘seeing radio’, which never caught on.

Remaining in the world of broadcasting, the word *di-wifr* meaning ‘without wires, wireless’ was coined in the 1920s to convey English ‘wireless’ in the sense of ‘radio’. However, it was superseded by *radio*, borrowed directly from English, and used as an example of ‘neologisms which have never won acceptance’ as recently as 1999 (Griffiths, 1999). However, a Google search today lists 180 actual examples⁴ of *di-wifr/ddi-wifr* against 156 of *radio* in a specifically Welsh context. The reason is the resurgence of ‘wireless’ in English as a term for microwave radio transmission, such as Wi-Fi and Bluetooth.

Both these developments demonstrate the unexpected ways in which natural languages can develop, despite the attempts of language planners to force them in a particular direction.

6.5 Terminological dictionaries

A combined list of technical terms was published by the University of Wales in 1950 as *Termau Technegol*, but this was a comparatively short publication. In 1975 the *Geiriadur Termau* appeared also under the aegis of the University of Wales, which was the first serious attempt to combine the many separate technical glossaries into a single substantial terminological dictionary. It went a considerable way to making the technical vocabulary more consistent, but further subject-specific glossaries continued to appear in ever greater numbers.

The Welsh Joint Education Committee, which is the main school examination board for Wales, sponsored the translation into Welsh of an illustrated handbook of design and technology for school students (Rees, 1993), which is described as ‘[c]yfuniad hwylus o eiriadur ac enseiclopedia’ [‘a convenient combination of dictionary and encyclopaedia’] (back cover). No English synonyms are given in the text, but at the end of the volume there is a list of all the entries in the book together with the corresponding English term.

6.5.1. Y Ganolfan Safoni Termau

In 1993 a centre for terminological standardization was established as part of a research centre, Canolfan Bedwyr, at Bangor University in north Wales. This was the first service in Wales devoted to terminological research, and over the years it has adopted professional international standards and is used by departments of the devolved Welsh Government, the Coleg Cymraeg Cenedlaethol which coordinates Welsh-medium higher education throughout Wales, and the Welsh Joint Education Committee. The standardization centre is commissioned to prepare lists of terms in a particular field, using its own terminologists in conjunction with subject specialists. The Welsh school curriculum committee sponsored the publication of two further terminological dictionaries for use in schools which appeared in

Prys (1998) and Prys (2006). These much larger works, which were distributed to every school teaching through the medium of Welsh in Wales, also suffer from a degree of inconsistency in spelling, grammatical gender, and, in particular, from the lack of sufficient field labels to disambiguate terms from distinct fields, reflecting the fact that these large works are essentially a conglomeration of numerous earlier lists, composed originally by various bodies working on different principles. The same is true of the online version of these dictionaries, which is sponsored by the Welsh Government as Y Termiadur Addysg. Nevertheless, these resources are extremely useful in the education sector and are used extensively.

The Welsh Government-sponsored online Welsh National Terminology Portal (Porth Termau Cenedlaethol Cymru)⁵ combines access to a number of terminological resources including Y Termiadur Addysg, the Coleg Cymraeg Cenedlaethol Terminology Dictionary, the Care Council for Wales Terms, the Justice Wales Network Terms, and the Cymdeithas Edward Llwyd Natural History Dictionaries and also includes images from Wikipedia⁶, the Welsh-language crowdsourced encyclopaedia. Terms may be entered in Welsh or English, and the corresponding entry or entries will be displayed, noting the subject field to which each belongs, in most cases.

6.5.2. Specialist terminological dictionaries

Some specialist dictionaries have been translated in their entirety into Welsh, such as Michael Kennedy's 900-page *Oxford Dictionary of Music*, which is available in a Welsh translation by Prys (1998), although the headwords remain as in the language of the original work (English, Italian, French, &c.), with Welsh translations, where appropriate, followed by the descriptive text. In a sense, this is more of an encyclopaedia than a dictionary. The same is also true of another translated 'dictionary', for midwives (Tiran, 2004), which explains English and Latin medical and midwifery terms in Welsh. This does, though, have an index to the Welsh terms, so that it can be used in both directions.

7. Discussion and conclusions

Marion Löffler (2003) has described the linguistic situation in Wales up until the start of the 21st century in a paper which, like the present one, was written for a conference discussing the question of lexical purism in lesser-used languages. Löffler highlights the difference in attitude between linguists and language planners: the former often considering purism as pointless, the latter considering it as an essential means to language survival. Lesser-used languages are in a different position to major languages, such as English, in the way in which neologisms arise. Because of the restricted number of speakers, the relative influence of terminologists, educationalists, and broadcasters is significantly greater. New words and terms which receive extensive coverage in the media (including the Internet, which carries an ever-increasing amount of Welsh-language communication) are also far more likely to be adopted, such as the now prevalent *blaenslaes* (literally 'fore-slash') for 'forward slash' or 'oblique' (as used in many Web addresses) which has been popularized by its use on the radio and the word *hunlun* (literally 'self-picture') for 'selfie' which has become very prevalent recently since it was first suggested on the Web. Many sporting terms, especially in the field of rugby, have also been widely adopted because of their prevalence in Welsh commentaries on radio and television. Some commentators and newsreaders make a point of saying the English word after a new Welsh term which improves intelligibility and reinforces their uptake in an almost subliminal way.

The question of English influence on Welsh is not purely an academic matter. Parina refers as follows to Professor Hildegard Tristram's belief (2002: 258) that: 'issues of English

influence on the Insular Celtic languages have not received due attention because of political undercurrents in the British Isles – this is regarded as an issue of the influence of the colonialists’ language on the language of the so-called “internal English colonies” (Parina, 2010: 183). Whilst this is indeed true to some degree, the availability of T. H. Parry-Williams’s comprehensive historical study of borrowings from English (Parry-Williams, 1923), albeit published in London rather than in Wales, possibly deterred others from venturing into the same field for many years after its publication.

David Crystal, defining ‘purism’ as ‘a desire to protect a language against what is perceived to be unwelcome change’ (1999: 6), claims that such attitudes do nothing to prevent a language developing: ‘nobody can ever stop language change’. Purism can mean many different things, of course. English purists have in the past advocated the creation of new ‘Saxonized’ words, such as *speech-craft*. A few purist neologisms have achieved currency in English, such as *folklore*, but most have been ignored. It seems that Crystal, when talking of purists in a Welsh context, has in mind those who might criticize others’ use of vocabulary borrowed from English rather than terminologists and language planners. A feeling of inferiority in less confident Welsh speakers is often engendered by their belief that they use too many English words in their Welsh. As has been seen above, such speakers may happily discuss rugby in Welsh, completely unaware that they are using many ‘puristic’ terms that were devised largely in the second half of the twentieth century. The promotion of such terms can indeed alter the course of a lesser-used language’s development, and increase the confidence of its speakers and their appreciation of the language.

Welsh lexicographers have played an important part in promoting the use of Welsh-language vocabulary when the words that are suggested are acceptable to the language community at large and in particular when they are used in the process of education or in the mass media. Effective dialogue between lexicographers, terminologists, educationalists, translators, and broadcasters (in all media) therefore has an important part to play in promoting the adoption of Welsh-based neologisms and terms. Dictionaries, both printed and online, are an essential part of this dialogue, and much more important in the case of a minority language like Welsh than for major national or international languages such as Spanish and English.

Notes

¹ In the dictionary, the terms used are *hwyl flaenfrig uchaf* for ‘foretop gallant-sail’ and *adein-hwyl* for ‘studding-sail’.

² ‘premise, n.’, sense 3b. *OED Online*. March 2015. Oxford University Press. <http://www.oed.com/viewdictionaryentry/Entry/150302> [accessed April 10, 2015].

³ Cynulliad Cenedlaethol Cymru, Offerynnau Statudol, 2007 Rhif 787 (Cy.68), Iechyd y Cyhoedd, Cymru, Rheoliadau Mangroedd etc. Di-fwg (Cymru) 2007. http://www.legislation.gov.uk/wsi/2007/787/pdfs/wsi_20070787_mi.pdf [accessed April 10, 2015].

⁴ Counting the number of results actually found, not just the total reported by the initial search (58,100 for *di-wifr* and the mutated form *ddi-wifr* and 3,490,000 for *radio* in a Welsh-language context).

⁵ Available online at <http://termau.cymru/?lang=en> [accessed 22 Jan 2017].

⁶ Available online at <https://cy.wikipedia.org/wiki/Hafan> [accessed 22 Jan 2017].

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Table 1: Welsh dictionaries: frequency of citation and first attestations in GPC3

Date of publication	Dictionary abbreviation	Entries citing the work	Senses/collocations citing the work	Senses/collocations citing the work as the first attestation	Percentage of first attestations
1547	WS	5193	5857	1698	29.0
1604–1607*	TW	11358	13196	4918	37.3
1632	D	15990	19692	3618	18.4
1688	TJ	4077	4359	293	6.7
1707	AB	1731	1910	390	20.4
1722*	Gambold	10312	12069	1553	12.9
1725	SR	2622	2861	331	11.6
1753	TR	2386	2620	158	6.0
1770–1794	W	19132	23174	6126	26.4
1793–1803	P	27149	30018	5037	16.8
1798	WR	1808	1919	418	21.8
1850	Caerfallwch	268	273	164	60.0
1852, 1858	EWD (mostly <i>a–b</i>)	731	829	287	34.6
1887–1905	SE	1122	1321	173	13.1
1995	GA	1828	2107	305	14.5

*unpublished

Table 2: The Bible and literature: frequency of citation and first attestations in GPC3

Date of publication	Work or author	Entries citing the work	Senses/collocations citing the work	Senses/collocations citing the work as the first attestation	Percentage of first attestations
1567	New Testament	4911	7684	1574	20.5
1588	Bible	6423	8969	2292	25.6
1620	Bible ²	1879	2137	417	19.5
18 th cent. (early)	Elis Wynne	3096	3795	415	10.9
18 th cent (late)	William Williams, Pantycelyn	2625	2991	458	15.3