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“It sounds like elves talking” – Polish migrants in Aberystwyth (Wales) and their impressions of the Welsh language

<https://doi.org/10.1515/applirev-2020-0027>

Received April 19, 2020; accepted May 10, 2021; published online July 12, 2021

Abstract: The purpose of this paper was to gain a better understanding of the perceptions of the Welsh language held by the Polish adult migrants in Aberystwyth, Wales. Using qualitative research methods, we collected data from participants concerning their perceptions of the sound and spelling system of Welsh. Data obtained showed that adult Poles in Aberystwyth perceive the phonetics and phonotactics of Welsh to be markedly different from that of their native Polish. The participants believed Welsh to have small number of vowels and large number of consonantal clusters. By comparing consonantal and vowel inventories we were able to demonstrate that Welsh has a more complex vowel inventory than Polish. The consonantal inventories of both languages show great similarities and should not pose major problems to Polish learners of Welsh, who are also speakers of English. As for the phonotactics, Polish possesses a far more complex inventory of consonantal clusters than Welsh. We show that claims of the study’s participants that Welsh pronunciation is markedly different from Polish is not based on the linguistic grounds. Instead, such claims must be rooted in the social and ideological perceptions of the Welsh language on the part of the participants in the study.

Keywords: language ideologies; phonetics; phonotactics; Polish; Welsh

1 Introduction

There is a commonly held belief that some dialects and languages are more pleasantly sounding than others. For instance, French is often perceived as

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melodious and romantic whereas German is described as harsh sounding. According to Giles and Niedzielski (1998 p. 88–92), such opinions are conditioned by our social perception of the speakers and perceived status of a given language or language variety. They state that “[j]udgements of linguistic beauty are determined in large part by the larger context in which they are embedded. That is, linguistic aesthetics do not come in a social vacuum and few, if any, inherent values exist.” (Giles and Niedzielski 1998 p. 90). Indeed, Cavanaugh (2009 p. 11) employs the term ‘social aesthetics of language’ to denote “the interweaving of culturally shaped and emotionally felt dimensions of language use and the extra-linguistic factors that rank people and their groups into hierarchies”. The beliefs about the aesthetics of a given language are expressed through discourses and practices. As such, they constitute one of many language ideologies (Woolard 2008).

A large and growing body of literature has investigated the notion of linguistic (language) ideologies. Silverstein (1979 p. 193) defined language (linguistic) ideologies¹ as “any sets of beliefs about language articulated by the users as rationalisation or justification of perceived language structure and use”. Over the years, the definition of language ideologies evolved. Nowadays, Boudreau and Dubois (2007 p. 104) define them as

a set of beliefs on language or a particular language shared by members of a community [...] These beliefs come to be so well established that their origin is often forgotten by speakers, and are therefore socially reproduced and end up being ‘naturalised’, or perceived as natural or as common sense, thereby masking the social construction process at work.

The community sharing given ideologies might be the speakers of a particular language but often also neighbouring communities. Language ideologies are also enacted and reproduced in day-to-day life through opinions, discourses and practices. Therefore, they influence linguistic choices people make, including which language to use in daily interactions, the content of utterances and which languages to learn. A large body of research into ideologies and sociolinguistic aspects of minority languages and migration exists. Yet, as pointed out by McCubbin (2010: 458), much of it tends to discuss migrant languages as minority languages in relation to the dominant ones (cf. Lytra 2015; O’Reilly 2001; Song 2008). Much of the current literature on indigenous minority languages pays particular attention to the role of ideologies (in particular, standard language ideology, ideology of authenticity and legitimacy) in revitalisation and maintenance (cf. Costa 2015, 2019; Hornsby 2016; Smith-Christmas et al. 2018).

¹ Michael Silverstein, the pioneer of language ideologies research, used the terms ‘language ideologies’ and ‘linguistic ideologies’ interchangeably in his 1979 paper. In subsequent years, however, ‘language ideologies’ became the established term.

By comparison, research on immigration into indigenous minority language communities is relatively scarce but growing. Working within the framework of new speakers, Bermingham and Higham (2018) discuss issues of integration of migrants in Wales and Galicia. Several studies investigated immigrant students in minority language communities and their language ideologies (cf. Bermingham 2018; Pérez-Izaguirre and Cenoz 2020). The present paper, then, contributes to the growing research on migrants in indigenous minority language communities and language ideologies migrants have on the minority language and its speakers.

Over the last 16 years Polish nationals have been migrating to the British Isles on unprecedented scale. Unlike previous waves of Polish migrants who tended to settle big urban centres, the economic migrants of 21st c. have taken residence in rural parts of the UK. Those who settled in Wales came into contact with Welsh and could thus form aesthetic impressions about its orthography and sound. This paper analyses data obtained through qualitative methods and discusses first impressions of Welsh by Polish migrants living in Aberystwyth, Wales. We concentrate on the perceptions of the sounds and orthography of Welsh. By comparing phonetics and phonotactics of Welsh and Polish, we argue that the perceived distance between the two languages is not based on purely linguistic grounds but stems from language ideologies.

2 Polish post-2004 migration to the UK

Poland's accession to the European Union in 2004 and lack of restrictions of labour movements to the UK resulted in unprecedented economic migration flows from Poland to Britain. The 2011 National Census recorded over 546,000 speakers of Polish living in the UK. The more recent estimates of Office for National Statistics revealed that in 2015 there were 916,000 residents of Polish nationality in the UK, constituting the highest percentage (16.5%) of non-British nationals in the country (ONS 2015). Despite a slight drop in the numbers in 2019 as many EU migrants left the UK due to Brexit and other reasons, Poles continue to be the most common migrant group (ONS 2019). In contrast to the previous migration flows which tended to concentrate around urban centres, this time many Polish nationals reached rural and semi-rural areas that had not attracted many newcomers previously, including west and north-west Wales (Rosiak 2018). According to Migration Observatory, over 18,000 Polish nationals resided in Wales in 2014 (MO 2014). The Welsh Language (Wales) Measure 2011 gave Welsh the official status making Wales officially a bilingual country with Welsh (*de iure*) and English (*de facto*) as official languages.

Aberystwyth, where this study was conducted, is situated in Ceredigion, one of the heartlands of the Welsh language. As reported by the 2011 National Census, the town has around 18,965 inhabitants, 31% of whom declared the ability to speak Welsh in the Census (compared to the national average of 19–20%). The town also has a significant Polish community of post-2004 economic migrants, who came to Wales after Poland joined the European Union to find employment. The 2011 National Census recorded 371 speakers of Polish living in the Aberystwyth area (661 in the county of Ceredigion). In addition, Aberystwyth University has been attracting Polish students since around 2006, 690 of whom graduated from the University since 2009. In autumn 2018, there were 420 Polish students enrolled in various courses offered (Alumni Office, personal communication, August 8, 2018). The university has been attracting Polish students with the help of (at least) two Polish recruitment agencies, who advertise studying in the UK through presentations and meetings in Polish high schools, and assist candidates in the recruitment process (e.g. by filling in documents, etc.). The presentations concentrate on various aspects of studying in Aberystwyth and students' life, barely mentioning the Welsh language, and presenting it as the language mainly of the elderly and not used much in the community. The first contact with Welsh the candidates have is through bilingual emails they receive from the university in the application process, in compliance with the University's Language Scheme. Hence, on coming to Aberystwyth the students' knowledge of Welsh is largely limited to being aware of its existence but not knowing how it sounds, or what role it plays in the Welsh society. It is upon arrival in Aberystwyth when most of the students, and other migrants from Poland, first hear Welsh spoken and start developing aesthetics impressions and opinions on the language.

3 Research process and participants

Data for this paper comes from a wider study into language repertoires of Poles living in the Aberystwyth area. The study was conducted in May and June 2018 and employed both quantitative and qualitative research methods. First, an online questionnaire on the language repertoire² of Polish migrants in Aberystwyth was prepared. The questionnaire was posted on Facebook groups for Polish community in the Aberystwyth area (Polacy w Aberystwyth, polskie Aber <3, Aberystwyth

² The concept of language repertoire is understood here as languages learned at different stages of life (infancy, school, independently, etc.), mastered to different levels of competency (elementary, upper-intermediate, fluent, etc.) and used in various contexts (everyday conversation, academic work, reading, etc.).

Polish Community Centre – Polska Społeczność w Aberystwyth). Altogether, 66 people filled in the questionnaire, 44 women and 22 men, of whom 25 expressed interest in meeting the researcher in person for a semi-structured interview and 14 turned up for the meeting. Altogether, the semi-structured interviews were conducted with 28 participants, 8 men and 20 women. The remaining participants were recruited through personal contacts of the researcher, information leaflets describing the study and its aims, advertisements in local institutions (schools and Polish shops) and with the use of snowballing technique (Milroy 1980). This article, however, analyses data from the semi-structured interviews only, which were transcribed into conversational turn, and read carefully to identify common themes and patterns through the content-based thematic analysis and the ‘grounded theory’ (Glaser and Strauss 1967).

General Polish (język ogólnopolski)³ was the native and dominant language for all participants. Polish is the only official language (that is used in country’s administration) of Poland and is used as the only home language by 98.2% of the population (GUS 2015). Although there are ethnic and national minorities (Kashubs, Germans, Belarusians, Ukrainians, Lemko, Tatars, Karaims and others) and minority languages (Kashubian, Wymysorys, Silesian etc.) in Poland, the country can thus be safely described as a largely monolingual and monoethnic. In terms of linguistic landscape and official administration, an additional language is allowed only in communes where at least 20% of the population declared a minority identification in the National Census and which has been entered into official registrar⁴ of communes registered as using an additional language. None of the participants came from the officially bilingual areas, however, one identified as Silesian and Polish-Silesian bilingual.

All participants were speakers of English, although their proficiency in English varied. Some reported to have been less competent in English upon arrival but have learned the language in Wales through formal and/or informal learning. Their proficiency at the time of the interviews was reported to be ranging from B2 to C1 levels within Common European Framework of Reference for Languages (CEFR).

The interviews were 40 min long on average and took place at a variety of locations including participants’ homes, cafés and university campus. The

3 General Polish is currently used by over 95% of Polish population and is the standard super-regional variety, both in its written and spoken form. It developed after WWII as a result of changes of the territory of Poland, internal migrations and resettlement in the decades following the war, and changes in the political, economic and social situation in the country. All these factors led to the democratization and homogenization of Polish (Dubisz 2018).

4 Registration must be preceded by the commune’s application/initiative.

interviews were conducted in Polish, transcribed using Praat and translated into English by the researcher. The participants were between 19 and 48 years old and can be grouped into three partly overlapping categories: (1) current students of Aberystwyth University (12 people), (2) graduates of the University/adults without children, working in the area (7 people), (3) Poles living and working in the area having families and small children (10 people). The overlaps stem from the fact that all students were working at least part-time and one participant was a mature student married with children. Parents' opinions on Welsh might have been affected by the fact that teaching of Welsh is compulsory between the ages of 5–16 in all schools in Wales. At the beginning of each interview, participants were informed about the general purpose of the study, data collection process and how it will later be accessed and stored. All participants signed the informed consent. With the purpose of gathering background information, each interview began with questions about participants' migratory experience, including reasons for choosing Wales, their initial knowledge of the linguistic situation of Wales and their previous experience in learning (foreign) languages. The latter part of the interviews explored their attitudes towards the Welsh language, whether they were motivated to learn it or not, and their experience in learning the language in formal and informal contexts. At the time of the interview, none of the participants spoke fluent Welsh. One had experience of participating in basic Welsh classes (formal setting), one intended to enrol on a course in a few months' time, and a few expressed some interest in learning Welsh in an undefined future, should they have time to do so or should it be required of them by their employer. All of them were familiar with a few basic phrases such as *bore da* 'good morning' or *croeso* 'welcome', which they learned in non-formal contexts.

Inasmuch as the participants in our study generally did not pursue active learning of Welsh, they fall within the category of naïve non-native listeners (Best and Tyler 2007). Naïve non-native listeners are generally characterized by having “notable difficulty categorizing and discriminating many phonetic contrasts from unfamiliar languages that are not used to distinguish lexical items in their own language, including both non-native consonants and vowels (...) In addition, the relative ease or difficulty of a given contrast varies according to the listener's native language” (Best and Tyler 2007 p. 16). However, how the target language speech is perceived also depends on fine-grained phonetic similarities and differences, phonotactic constraints in the native language, coarticulatory patterns and other phonetic features and variations (Best and Tyler 2007 p. 17).

Several studies on comparative linguistics have also pointed out the need to distinguish between the concepts of complexity and difficulty in comparing two or more languages (c.f. Dahl 2004; Lindström 2008). Whereas the former term pertains to grammatical structure that could be by and large computed

mathematically, the latter is subjective and dependent on an individual (Lindström 2008: 220). The perceived difficulty also depends on the extra-linguistic factors, such as the status of the language, societal attitudes towards it, individuals' beliefs and expectations of multilingualism and different levels and kinds of motivation for learning languages, among others (Lindström 2008: 232). Below then, we discuss the perceptions of Welsh by the participants and attempt at establishing similarities and dissimilarities between Polish and Welsh phonetics and phonotactics to show that the perceived difficulty of Welsh is not based on linguistic grounds, i.e. on the inherent complexity of Welsh.

4 Perceptions of the Welsh language

Although the majority of the participants were aware of the existence of Welsh on coming to the country, their knowledge of its phonetic system and orthographic conventions was negligible. Consequently, their comments on the language stem from a lack of familiarity. In general, the impressions they had can be divided into those based on the spelling conventions and those pertaining to the sounds of Welsh.

4.1 Orthography

As mentioned previously, students who apply to the Aberystwyth University receive bilingual Welsh-English correspondence and marketing materials. It is on seeing the written language when they start to develop impressions and opinions on the orthography of Welsh:

I heard that Polish is difficult but compared to Welsh It [Welsh] doesn't make sense. There are four Ls next to each other, then D then S. Well, simply it's, it doesn't make sense. (A202M)

I thought it was ... that somebody randomly presses the keys. (A203M)

The following comment suggests that the spelling of Welsh influences the perceptions of its sound and pronunciation:

I also wondered how people can pronounce it at all. When I saw the Welsh language [written down] I had already wondered how they pronounce it. When I heard the language, it sounded as if they were choking or, I don't know, had a real problem to cough up the words. (A21F)

Indeed, as noted by Wells (2013) lack of familiarity with the spelling conventions of a given language influences to a great extent how that language is perceived. In Welsh, a number of phonemes such as /ð, θ, ʀ, ŋ, χ, ʟ, f/ are spelled as <dd>, <th>,

<rh>, <ng>, <ch>, <ll>, and <ff> respectively, which may be misinterpreted as consonantal clusters.

4.2 The sound and pronunciation of Welsh

When asked about their first impressions on hearing the Welsh language spoken, many respondents evoked feelings of surprise, amazement at the strange sounding language and its dissimilarity from English. Often, they would compare it to other languages known to them:

I was really surprised that it's completely different from English. I thought that it would be somehow similar, and it's more of a Celtic language. (A20F)

Because it completely did not remind me of English, and one would expect that if the languages are, if both languages are used here, they would be related and similar and it's not the case. (A21F)

Yes, as my friend said, like in this film, not Game of Thrones but Lord of the Rings, elves talking. Such a hard (sounding) language. Harder (sounding) than German. (A20M)

My impression was that it was simply a splutter, that it's not words, it's throaty. (A20F)

Some participants mentioned initial problems when trying to deduce how to pronounce Welsh words and their beliefs, later disproved, that pronouncing Welsh is simply impossible due to consonantal clusters and shortage of vowels:

I knew that ... I mean when I came here I realized that they are short of vowels in this language. And I couldn't quite understand how they manage to communicate, but ... (A25F)

I remember that in the Cwrt Mawr halls ... umm that's where I lived in the beginning. ... I remember that me and my father were trying to figure out how to pronounce it. My dad speaks English pretty well. And we tried differently, there were different variants, I don't want to guess now. And I was trying to say it to the taxi driver where I wanted him to take me and I had to write it down on a piece of paper because he didn't understand me, yes. Well, I was shocked, I didn't know you could have so many consonants one after another, and at the beginning of the word on top of that, you know, fit that in somehow to be able to pronounce it, but ... it turned out it is possible. (B31M)

A few of them, however, noticed certain similarities with Polish:

That it's similar to Polish [laugh] That these /f, ʒ/ or something, that these sounds are very similar to ... so uhhh, yes. But I never ... I never learned Welsh, but sometimes you pick something up from a patient or ... (C38F)

The pronunciation is quite hard, I hear, although to Poles it's not that difficult because our language has similar pronunciation really, but I knew that it is more similar to Hungarian I think, that the pronunciation is really similar (...) And in the beginning I also didn't know, when I looked at a written word, I didn't know it was the word that somebody had said (...). The spelling does not reflect the pronunciation. In the beginning, but when I realized what it's about with the double letters, it was much, much easier, at least knowing what it's about. Not to understand it straight away. (Not that I understand it straight away). (B35M)

At this point it is worth mentioning that the participant was not necessarily actually comparing Welsh to Hungarian. In Poland, Hungarian and Chinese are stereotypically used to denote incomprehensible gibberish. The perceived similarity with Polish stems from the fact that, as shown below, certain sounds and clusters in Polish and Welsh are alike. The participant also revealed that his understanding of Welsh pronunciation became greater once he learned some of the spelling conventions. This lack of familiarity with the spelling to sound correspondences in Welsh may indeed contribute to the perception of Welsh as an extremely difficult and unpronounceable language. However, once the Welsh spelling conventions are learned, it transpires that Welsh has mostly one to one correspondence between pronunciation and orthography. In fact, it is more consistent in that respect than English.

The perceived incomprehensibility and difficulty of Welsh spelling and pronunciation influence the language practices of the participants. Only one participant had a previous experience of attending a short (one-day) entry level Welsh course organised by the employer. Yet, several of them expressed lack of motivation to learn Welsh as they believed the language to be too difficult.

I can hardly comprehend English, so Welsh, no, to learn it, it's double [sic] difficult. The Welsh language in itself is very difficult. It's a mixture of Scandinavian, French and German. So it's difficult to learn. (C43F)

Very throaty, and extremely difficult pronunciation. And I will probably never master it. (A22F)

Interestingly, the perceived difficulty based on sound and orthography judgement was the most common argument raised against learning Welsh. Occasionally, the participants also listed lack of time and 'everybody speaks English anyway' argument as their reasons for not taking up Welsh. Surprisingly, the theme of anti-Welsh discourses did not come up once in the interviews and the participants seemed to be largely unaware of the English-Welsh (historical) tensions. This may stem from the fact that linguistically, in Polish Great Britain is equated with England, with Wales being 'cognitively' omitted. The word 'Anglia' (England) is a synonym of 'Great Britain' and 'The United Kingdom'. Wales is seldom recognized

by Poles as a separate country with its own language and culture within the UK and is rarely taught about in schools (cf. Rosiak and Hornsby 2016, 65).

5 Phonemic inventories of Polish and Welsh

Polish is a West Slavic language spoken by approximately 41 million speakers in Poland and 10 million in diasporas (Jassem 2003 p. 103), whereas Welsh is a minority language, currently spoken by around 19% of the resident population of Wales, according to the 2011 National Census. Welsh is also a minority language in the Patagonian province of Chubut (Argentina), with the number of speakers of Welsh estimated at up to 5,000. No data concerning the number of speakers of Welsh in diasporas exist.

Polish is described as a consonantal language (Jassem 2003) with a moderately high consonant:vowel ratio (Maddieson 2013; languages with a ratio of 4.5–6.5 are classified as having a “moderately high” ratio, and according to the sound repertoire

Table 1: The phonemic inventory of Polish (adapted from Jassem 2003).

PLACE → MANNER ↓	Labial	Labio- dental	(Post)- dental	Alveolar	Alveolo- palatal	Palatal ^a	Velar
Plosive	p b		t d			c ɟ	k g
Fricative		f v	s z	ʃ ʒ	ɕ ʐ		x
Affricate			ts dz	ʦ ʣ	ɕ ʐ		
Nasal	m		n		ɲ		ŋ
Lateral			l				
Flap/trill				r			
Approximant	Oral w					j	w
	Nasal ɰ					ĩ	ɰ

^aJassem (2003) includes two palatal plosives /c ɟ/ in the phonemic inventory, and so does Nagórko (2006). Other authors, e.g. Madelska (2005), treat the onsets in words such as *kiedy* ‘when’ and *giełda* ‘stock market’ as sequences of velar plosives followed by a palatal semivowel, i.e. /kj/ and /gj/.

Table 2: Consonants in Welsh (Hannahs 2013: 21–22).

	Bilabial	Labio- dental	Dental	Alveolar	Lateral	Post- alveolar	Palatal	Velar	Uvular	Glottal
Plosive (stop)	p, b		t, d					k, g		
Nasal		m	N					ŋ		
Fricative		f, v	θ, ð	s (z) ^a	l	ʃ			χ	h
Affricate						ʧ, ʤ				
Liquid				ɹ, r	l					
Glide	w						j			

^aOccurs in loanwords.

presented by Jassem, the C/V ratio of Polish amounts to 5.5). Its consonantal nature manifests itself both in the number of consonants in the phonemic inventory ($n = 33$) as well as a rich phonotactic repertoire (over 2,400 cluster types). Tables 1 and 2 below present the consonants of Polish and Welsh respectively.

The comparison of Polish and Welsh consonant inventories shows great similarities between the two systems. Only five Welsh consonant sounds /ɣ, θ, ð, ɬ, χ/ do not exist in Polish. However, although /ɣ/ is not a phoneme in Polish, it does exist as an allophone when /r/ is preceded by a voiceless stop, e.g. in *prawda* 'truth'. Additionally, Polish-English bilinguals are well familiar with /θ, ð/ since these are part of the English consonantal inventory. Consequently, the necessity to learn two new sounds by Polish learners of Welsh is not a significant linguistic difference to claim a vast distance between Polish and Welsh.

The vocalic inventory in Polish is much smaller and comprises only six vowels /i i̯ ε a ɔ u/. Graphemes <ą> and <ę> have several realisations depending on the phonetic context: (1) before plosives and affricates, they are realised as oral vowels followed by a nasal which is homorganic with the following consonant; (2) before fricatives they are pronounced as /ɔ̃w/ and /ɛ̃w/ respectively; (3) before a pause <ą> is realised as /ɔ̃w/ whereas <ę> can be pronounced as /ɛ̃w/ or as a denasalised variant /ɛ/; before /w/ they are realised as oral vowels /ɔ/ and /ɛ/ respectively. There is no length distinction in the vocalic inventory.

In contrast to Polish, Welsh does not have a supraregional spoken standard. A general distinction between north and south Welsh is made, with each having distinctive local dialects. Welsh has up to 13 pure vowels /i: i̯ i̯: ə a: u: o: ɔ:/, and 13 diphthongs /aɪ ɔɪ ʊɪ əɪ ɪʊ ɛʊ əʊ aɪ əɪ ɔɪ ʊɪ əɪ/ with /i: i̯:/ existing in northern varieties only (Mayr and Davies 2011). Consequently, its consonant:vowel ratio ranges from 1.36 to 1.92 depending on the region (cf. Table 2). According to Maddieson (2013), languages with a ratio equal to or below 2.0 are classed as having a "low" C/VQ ratio. Thus, Welsh has a low vowel to consonant ratio. The inventories in both languages, however, include front-close, front-mid, front-open, back-close, back-mid and back-open ones. Although Polish does not have diphthongs per se, it does have "vowel plus glide sequences to some extent similar to British rising diphthongs." (Balas 2009 p. 132) or Welsh diphthongs. Examples include *hej* 'hey', *gej* 'gay', *nalej* 'pour'-imp., *auto* 'car', *eureka* 'eureka', *jutro* 'tomorrow', *ojciec* 'father'. What renders the two languages different is the C/V ratio, but it is Polish that is richer in consonants. Therefore, the participants' claims about Welsh having no vowels is purely impressionistic, unsupported by linguistic facts.

6 Phonotactics of Polish

As a sub-branch of phonology, phonotactics studies which sound sequences are permissible in each language. Polish is a language with conspicuously rich phonotactics. The complexity of the phonotactic system is visible in terms of (1) cluster size, (2) the number of cluster types and (3) the phonological content of the cluster. As for cluster size, Polish allows for up to 5 consonants in the word-initial position, e.g. /strfj-/ in *Strwiąż* ‘river name’ or six in a phonological word, e.g. /fstrfj-/ w *Strwiążu* ‘in Strwiąż’. Leaving proper names aside, in regular lexicon word-initial clusters may feature up to four consonants, e.g. /pstr-/ in *pstrąg* ‘trout’, six consonants intervocalically, e.g. /ntşzvj-/ *wewnątrzzwiązkowy* ‘union-internal’ and up to 5 consonants word-finally, e.g. /-mpstf/ *przestępstw* ‘crime’-gen.pl. As a result, in sandhi contexts, we may expect up to 11 consonants in a string, as exemplified by a potential phrase *przestępstw w Strwiążu* ‘crime-gen.pl in Strwiąż’ /pşestęmpstf

Table 3: Consonantal clusters in Polish.

Cluster length	Initial position	Medial position	Final position
2-member	/pt-/ <i>ptak</i> ‘bird’	/-st-/ <i>miasto</i> ‘city’	/-lk/ <i>wilk</i> ‘wolf’
	/sx-/ <i>s+chodzić</i> ‘go down’	/-dd-/ <i>od+dać</i> ‘to give back’	/-ŋtɕ/ <i>zacząć</i> ‘begin’-perf.
3-member	/str-/ <i>strach</i> ‘fear’	/-str-/ <i>siostra</i> ‘sister’	/-rşţş/ <i>barszcz</i> ‘borsch’
	/str-/ <i>s+trącić</i> ‘to knock down’	/-tkr-/ <i>od+kryć</i> ‘discover’	/-jɕtɕ/ <i>przyjść</i> ‘come’
4-member	/pstr-/ <i>pstrąg</i> ‘trout’	/-kstr-/ <i>ekstra</i> ‘great’	–
	/fstş-/ <i>ws+trzymać</i> ‘to suspend’	/-strf-/ <i>roz+trwonić</i> ‘squander’	/-mstf/ <i>kłam+stw</i> ‘lies’-gen.pl.
5-member	–	–	–
	–	/-mpstf-/ <i>następ+stwo</i> ‘aftermath’	/-mpstf/ <i>następ+stw</i> ‘aftermaths’-gen.pl.
6-member	–	/-mpstfj-/ <i>następ+stwie</i> ‘aftermath’-loc.sg.	–
	–	–	–

f strfjɔwżu/. Phonotactic possibilities in terms of cluster length are presented in Table 3 below. Clusters of each size are illustrated with two examples: one presenting the cluster in an intramorphemic context and the other with a cluster spanning a morphological boundary (which is indicated with a +). The lack of example(s) in a given cell is tantamount to no cluster representative in Polish (–).

Intramorphemic clusters may feature up 4 consonants word-initially and intervocally and 3 consonants in the word-final position. As can be noticed, the longer clusters are usually morphologically driven. Morphologically derived clusters have concatenative and non-concatenative sources (Dressler and Dziubalska-Kołaczyk 2006). The former can be illustrated by affixation (all the examples in Table 2) whereas the latter arise either as a result of vowel-zero alternation, e.g. *dzień* ‘day’-nom.sg. (CVC, no cluster) versus *dni* ‘day’-nom.pl. (CCV, a cluster arises) or back formation, e.g. *następstwo* ‘aftermath’-nom.sg. (medial 5-member cluster) versus *następstw* ‘aftermath’-gen.pl. (final 5-member cluster) (see examples of genitive-plural formation in Table 3). In fact, the last example is morphologically driven in two ways simultaneously, i.e. by concatenation and zero-genitive-plural formation.

The second aspect of phonotactic complexity in Polish is the number of cluster types, which exceeds 2,400. Zydorowicz et al. (2016) conducted a quantitative

Table 4: Cluster types in a dictionary and a corpus (adapted from Zydorowicz et al. 2016: 73ff).

Position → Size ↓	Resource	Initial	Medial	Final	Total
2-member	dictionary	147	295	54	496
	corpus	217	455	142	814
3-member	dictionary	85	216	10	311
	corpus	207	985	52	1,244
4-member	dictionary	9	28	0	37
	corpus	30	300	9	339
5-member	dictionary	0	2	0	2
	corpus	0	50	1	51
6-member	dictionary	0	0	0	0
	corpus	0	3	0	3

analysis of phonotactic patterns, examining both cluster types in a dictionary and a written corpus of newspaper texts. The comparison of the two resources is presented in Table 4. The corpus, as a more comprehensive resource, features a larger number of cluster types; unlike the dictionary, it also contains inflected forms, which are the source of morphologically driven clusters.

Phonotactic systems are often described in terms of their compliance with the notion of sonority which is believed to be responsible for the organisation of consonants in the syllable. Sonority of a sound itself is defined as “loudness relative to that of other sounds with the same length, stress, and pitch” (Ladefoged and Johnson 2011 p. 245). It also corresponds to the degree of aperture of the vocal

tract (Yavaş 2003). The Sonority Sequencing Generalization (henceforth SSG) states that the sonority of the sounds in a sequence should decrease from the nucleus outwards (Selkirk 1984). Natural classes of consonants can be placed on a sonority scale according to the degree of aperture of the vocal tract from the least to the most sonorous ones: plosives – affricates – fricatives – nasals – liquids –

Table 5: Cluster compliance with sonority.

Sonority profile	Initial	Final
Sonority obeying	CC: /kl-/ <i>klej</i> ‘glue’	CC: /-lk/wilk
	CCC: /zmj-/ <i>zmiana</i> ‘change’	CCC: /-r̥ʂt̥ʂ/ <i>barszcz</i> ‘borsch’
	CCCC: /gz̥zmj-/ <i>grzmieć</i> ‘thunder’	–
Sonority-violating	CC: /rt-/ <i>rteć</i> ‘mercury’	CC: /-tr/ <i>wiatr</i> ‘wind’
	CCC: /str-/ <i>strach</i> ‘fear’	CCC: /-kst/ <i>tekst</i> ‘text’
	CCCC: /pstr-/ <i>pstrąg</i> ‘trout’	CCCC: /-mstf/ <i>klamstw</i> ‘lies’ gen.pl
	–	CCCCC: /-mpstf/ <i>następ+stw</i> ‘aftermaths’-gen.pl

semivowels and vowels.⁵ Polish words *klej* ‘glue’ and *wilk* ‘wolf’ represent well-formed clusters in the pre- and post-nuclear contexts, respectively. Conversely, clusters /rv-/ in *rwać* ‘to tear’ and /-tr/ in *wiatr* ‘wind’ are counterexamples to the SSG. Table 5 illustrates sonority profiles in Polish on the basis of clusters at word-edges.

Several observations can be made: (1) even long clusters, e.g. 3- and 4-member initial sequences, can obey sonority; (2) Among sonority-violating clusters, both sonority reversals and plateaus are found, e.g. /kt-/ in *kto* ‘who’ or /-kt/ *nikt* ‘nobody’ (we treat plateaus as sonority violations as they demonstrate no expected rise in sonority); (3) Among plateau clusters geminates are possible, e.g. /d̥z̥d̥z̥/ in *dżdżownica* ‘earthworm’, /t̥ʂt̥ʂ-/ in *czczy* ‘idle’ or /ss-/ in *ssak* ‘mammal’. Thus a subset of clusters constitutes grave violations to the principle of sonority. Zydorowicz and Orzechowska (2017) investigated Polish clusters at word-edges on the basis of the dictionary and found that 75% of cluster types approximately 82% of word types with double clusters at word-edges are compatible with sonority (this statement, however, requires a caveat that the percentages concern only phonologically motivated clusters, i.e. clusters without a morphological trigger).

⁵ In the extant literature, numerous versions of the sonority hierarchy have been proposed differing in the degree of detail and ordering of consonant classes. A parsimonious scale has been proposed by Zec (1995) with 3 classes of consonants. A rather elaborate version (a 17-point scale) is that assumed by Parker (2008). Intermediate scales have been adopted by Foley (1972), Steriade (1982), Selkirk (1984), Clements (1990) and Goldsmith (1990).

Another important aspect of Polish phonotactics is that it is by no means marginal. Clusters constitute the core of the Polish lexicon. Zydorowicz et al. (2016) investigated the structure of Polish words on the basis of a paradigm of inflectional forms and found that only 15% of word forms are devoid of clusters. Thus 85% of words contain at least one cluster. A similar percentage of *word types* with clusters (82%) was reported in a subsequent study (Zydorowicz et al.).

Obviously, not all clusters 'make it' in spontaneous speech. Some of the clusters undergo simplification processes such as segment deletion or assimilation. The issue of cluster realisation in spontaneous speech has been studied by Madelska (2005), Dunaj (1984, 1985) and Zydorowicz (2019). The overall cluster simplification rate amounts to 10.5% (Zydorowicz 2019). However, there is an enormous disproportion in the use of simplification processes in different word positions. While word-initially and -medially clusters tend to be rather stable (simplification rates at the level of 8.4 and 7.4%, respectively), word-final clusters are extremely susceptible to simplification, which amounts to 54.3% (Zydorowicz 2019). Cluster simplification rates are also sensitive to such variables as cluster size (with more simplifications affecting longer sequences), cluster preferability or goodness (with more modifications affecting dispreferred clusters, but depending on the measure used), the following phonetic environment (defined as the following homorganic vowel which triggers more simplifications, e.g. /Cwu/ or /Cji/) and word frequency (with more simplifications in frequent words) (Zydorowicz 2019).

Such a rich phonotactic inventory may also pose a great burden for second language learners. It may be predicted that clusters which are typologically more common and sonority-abiding will be acquired earlier and with greater ease than typologically rare or sonority-violating types (Broselow and Finer 1991; Cardoso 2008; Carlisle 1991a, 1991b, 1994; Eckman 1987, 1991; Tropic 1987) although the opposite findings are reported as well (Major 1996).⁶

7 Phonotactics of Welsh

In contrast to Polish, Welsh has a much less complex phonotactic inventory, which is visualised in Table 6 based on the word-initial position. The data is extracted from Zydorowicz et al. (2016) for Polish and from Hannahs (2013) for Welsh. The diminished complexity of Welsh clusters manifests itself in the prevalence of

⁶ For an alternative account of cluster preferability / goodness / ease versus cluster production, especially with reference to Polish phonotactics, cf. Dziubalska-Kolaczyk and Zielińska (2011) as well as Dziubalska-Kolaczyk and Zydorowicz (2014).

shorter clusters, a smaller number of possible consonant combinations and a more preferred sonority profile. Hannahs (2013) introduces a division between underlying representations of clusters and surface forms, which are mutation reflexes of the former. The mutations operate on singleton consonants and consonant sequences as well. For example, typologically rare clusters such as /θl-/ or /ŋr-/ are mutated variants of underlying forms /tl-/ in *tlawd* ‘poor’ and /gr-/ in *grug* ‘heather’, respectively. Leaving mutations aside, it may be concluded that Welsh features only 35 cluster types in the word-initial position, compared to over 450 types in Polish. In terms of cluster length, Polish also outdoes Welsh, allowing for 4-member clusters. It must be reminded that a portion of the clusters in Polish are triggered by concatenative and non-concatenative morphological operations, e.g.

Table 6: A comparison of word-initial cluster types in Polish and Welsh (in alphabetical order).

Size	Exclusively Polish	Cluster overlap	Exclusively Welsh
2	bj bw bz b̥z ɸf ɸl ɸm ɸn ɸp ɸr ɸs ɸt̪ ɸb dj dl dm dn dn̥ dv dw d̪z d̪zb d̪zv d̪zg d̪zv̥ d̪zd̪z f̪ ɸj ɸk ɸp fr fs f̪s ft f̪ts f̪t̪ f̪t̪s ɸx gb gd g̪d̪z g̪j gm gn gv gz g̪z k̪ ɸf ɸj km kn kp ks k̪s kt k̪t̪s k̪t̪ ɸj ln ɸn ɸv lz mj ml mn m̪n mr m̪s m̪t̪s mw mx m̪z p̪ ɸj pn p̪n ps p̪s pt̪ ɸw px rd r̪d̪z r̪j rt rv rz s̪ ɸf sj sk sl sm sn sp sr ss s̪s st̪s st̪s̪ sw s̪x s̪f s̪k s̪l s̪m s̪n s̪p s̪r s̪t̪ s̪t̪s̪ s̪w tf tj tk tn t̪n ts t̪s̪ tw tx t̪sf t̪sl t̪sm t̪sn t̪sw t̪ɸf t̪ɸm t̪ɸp t̪sf t̪sk t̪sm t̪st̪ t̪st̪t̪ t̪st̪s̪ t̪sw t̪sx vb vd v̪d̪z v̪d̪z̪ vg vj vl vm vn v̪n vr vv vw vz v̪z w̪b wg wk wz w̪z xf xj xl xm xr x̪s xt x̪t̪s x̪t̪ ɸw zb zd z̪d̪z̪ zg zj zl zm zn z̪n zr zv zw zz z̪z z̪z z̪d̪z̪ z̪l z̪r zb zd z̪d̪z̪ z̪l z̪m z̪n z̪r zv zv̪w	bl br dl dr fl fr gl gn gr gw kn kl kr kw ml mr pl pr tl tr st vl vr	nr sb sg xl xn yr xw
3	brd br̪d̪z̪ br̪n br̪j br̪v b̪zd b̪zd̪z̪ b̪zd̪z̪ b̪zm ɸfj ɸmj ɸpj d̪mj d̪rg dr̪j dr̪v dr̪z d̪vj d̪zv̥ d̪zgn̥ d̪zgn̥ d̪zv̪j ɸɸl ɸɸr ɸɸt̪ ɸkl ɸkr ɸk̪s ɸkw ɸpj ɸpl ɸpr ɸps̪ ɸpw ɸsk ɸsp ɸs̪s̪ ɸst̪ ɸsw ɸsx ɸst̪s̪ ɸtr̪ ɸtw ɸxw gr̪d g̪vd g̪vj g̪zm ɸfj k̪ln k̪l̪n k̪lv km̪j kp̪j k̪rf kr̪j kr̪n k̪rt k̪st̪ k̪st̪s̪ ɸgn̥ ɸgn̥ ɸgn̥ ɸvj m̪t̪t̪ m̪dl m̪dw mg̪j mg̪l mg̪n mg̪w m̪kn m̪k̪j m̪st̪ m̪st̪s̪ ɸlv pr̪j ps̪k p̪st̪ p̪st̪s̪ p̪wt̪ ɸxl ɸxn ɸxn̥ ɸxw rv̪j rz̪n rz̪n s̪fj s̪fl s̪fr sk̪f sk̪j skl sk̪n skr sk̪s sk̪s̪ sk̪w sm̪r sp̪ ɸj spl spr sp̪s̪ sp̪w s̪st̪ st̪f st̪j st̪s̪ st̪w st̪x st̪s̪j s̪x̪f sx̪j sx̪l sx̪n sx̪n̥ sx̪r sx̪s̪ sx̪w s̪fj s̪k̪f s̪k̪j s̪kl s̪kr s̪kw s̪pj s̪pr s̪tr̪ s̪t̪s̪f̪ t̪fj t̪kf t̪kl t̪kn t̪k̪j tr̪f tr̪j t̪sn̥ t̪st̪t̪ t̪xn̥ t̪xn̥ t̪sf̪ t̪sk̪l t̪sk̪n̥ t̪ɸf̪ t̪ɸm̪ t̪sk̪n̥ vb̪j vb̪r v̪dm v̪dr v̪gj v̪gl v̪gn̥ v̪gr v̪gw vg̪z vm̪j vv̪j v̪zb v̪zd v̪zg v̪zl v̪zm v̪zn v̪zn̥ v̪zn̥ v̪zr v̪zv v̪zd̪ w̪bj x̪fj xm̪j x̪st̪ x̪st̪t̪ x̪st̪s̪ zb̪j z̪bl z̪br zb̪w zb̪z̪ z̪dj z̪dm z̪dr z̪dv̪ z̪dw z̪dz̪ z̪d̪zv̪ zg̪j zg̪l z̪gn̥ z̪gn̥ z̪gr z̪gv̪ z̪gw z̪gz̪ zm̪j zm̪j̪ z̪mr z̪mw zv̪j z̪vl z̪vr z̪vw z̪d̪z̪b̪ z̪gn̥	str	sbl sbr sgl sgr
4	brvj b̪zm̪j d̪rgn̥ d̪rg̪n̥ dr̪vj d̪zv̪j f̪skr f̪sk̪s̪ f̪sp̪j f̪str̪ f̪st̪s̪ g̪zb̪j g̪zm̪j k̪rf̪j p̪str̪ sk̪f̪j sk̪rf̪j st̪f̪j st̪f̪j t̪k̪f̪j t̪sm̪j t̪sp̪j vb̪zb̪j vb̪zr̪ v̪zdr̪ v̪zdw̪ v̪zgl̪ v̪zm̪j z̪d̪z̪bl̪ z̪d̪z̪bw̪	–	–

/fstʂ-/ *ws+trzymać* 'to withdraw', with a physical morphological boundary between the second and the third consonant or /dʲn-/ in *dni* 'days' from *dzień* 'day' (a result of root vowel deletion). Regardless, the point is that Polish running speech is highly saturated with clusters.

As regards the quality of Welsh clusters, the majority of them abide by the sonority principle, being obstruent + sonorant sequences. Sonority reversals exist in /s/ + stop clusters and in triple clusters. A comparison of Polish and Welsh word-initial consonant clusters of all sizes is tabulated in 6.

An additional set of surface clusters includes: /m̥l m̥r n̥l n̥r ŋl ŋn ɲr ɲr θl θr ðr/. Initial consonant mutation often decreases the sonority distance between the member consonants in a cluster (e.g. /pl/ > /fl/), but does not increase the pool of sonority-violating clusters (Ball and Müller 2016).

In the word-final position, the Welsh repertoire of clusters is even more restricted: (1) only double clusters are attested, (2) mutations do not occur, (3) all clusters abide by sonority to a larger or smaller degree, being sonorant + obstruent, obstruent + obstruent or sonorant + sonorant sequences, e.g. /-lt/ in *hollt* 'split', /-sk/ in *Pasg* 'Easter' and /-rn/ in *dam* 'piece' (Hannahs 2013 p. 36).

Word-medially, the following constellations of broad consonant classes are permissible: obstruent + obstruent, e.g. *bachgen* /'baxɡen/ 'boy', sonorant + sonorant, e.g. *meilart* /'mɛɪlart/ 'drake', obstruent + sonorant, e.g. *cadno* /'kadno/ 'fox' and sonorant + obstruent *ardal* /'ardal/ 'district'. With reference to the phonological context of the clusters, further restrictions must be formulated. For instance (with rare exceptions), nasal + plosive clusters must be homorganic, e.g. *cyntaf* /'kənta/ 'first' (Ball and Williams 2001 p. 86). Three-member clusters are highly constrained and represent one of the two types: /s/ + plosive + liquid, e.g. *casglu* /'kasɡli/ 'to collect' or a nasal + plosive + liquid, e.g. *mentro* /'mentro/ 'to dare'.

To our knowledge, there are no corpus studies investigating Welsh phonotactics in language corpora, which makes a direct and fully parallel comparison with Polish unfeasible at this point. Nor is behavioural data available on possible cluster reduction rate. Therefore, this contribution is the first step to cross-linguistic comparisons. Nevertheless, the extant literature already points to a large discrepancy between the phonotactic systems of the two languages in terms of their complexity.

8 Conclusions and implications for further research

The present study is the first to date to tackle the problem of the attitude of Polish residents in Wales to the minority language, Welsh. The aim of this contribution

was to characterize this attitude and demonstrate that it stems from the social and ideological perceptions of Welsh rather than linguistic facts, i.e. a thorough comparison of the sound inventories and phonotactic systems. As shown, the phonetic and phonotactic systems of Polish and Welsh are indeed different. However, for a speaker of Polish, Welsh phonetics and phonotactics should not pose major difficulties. This statement is supported by the calculations of the vowel to consonant ratios of both languages, which is much higher for Polish. In addition, Polish has a much more complex system of permitted consonantal clusters. More specifically, the Polish phonotactic inventory is 13 times larger than the Welsh one, excluding ‘new’ clusters resulting from consonant mutations, and 9.7 times larger than Welsh when consonant mutations are included. Therefore, the claim by one of the participants that Welsh has difficult initial clusters is not supported by our data. What a Polish speaker might find surprising or challenging, however, is the presence of the voiceless lateral fricative /ɬ/, uvular fricative /χ/, alveolar liquid /ɭ/ in initial position and consonantal clusters containing these sounds. As Deutscher (2010) notes the sound structure of the language may play a role in language perception: rarer sounds which are unfamiliar to the learner may transpire to be less enticing. This might be the case of two Welsh consonants, i.e. /ɬ/ and /χ/. On the other hand, although the dental fricatives /θ/ and /ð/ are not part of the consonantal inventory of Polish, they are of English. Therefore, all Polish-English bilinguals are familiar with them.

Overall, claims that the sounds of Welsh are markedly dissimilar from Polish are not based on linguistic grounds. Undoubtedly, the familiarity effect plays a huge role here. As the participants had little to no knowledge of Welsh orthographic conventions and pronunciation, the language was perceived as very distant from Polish or English. Such perceptions, however, might have also resulted from language attitudes and ideologies subconsciously held by the participants. As stated in Section 3, Poland is to a large extent monolingual country. Its linguistic and ethnic minorities are often overlooked, and general awareness of their existence is low. Ethnic and linguistic minorities tend to be folklorised (cf. Dołowy-Rybińska 2020). To the best of our knowledge, to date no research on attitudes of Poles toward minority languages in Poland has been conducted. Hence, the Welsh language may be perceived by Polish migrants through the prism of their experience in Poland. Additionally, such factors as the country’s status, social values associated with Welsh, and the prestige of the speaker have been identified as important variables in research on language ideologies. A positive approach towards the country is often associated with the attitude towards the socioeconomic and mobility advantages the language offers as well as a communication possibility with a wider audience (English) (The Guardian online). Since Welsh is a minority language spoken by a small percentage of the Welsh

population and its use is to a large extent restricted to one geographical locality (Wales), Poles might put it in the lower rank in language hierarchy. By transposing of the status and omnipresence of English on Welsh, the latter language is regarded as difficult and incomprehensible, and its learning impractical. Such points of view could, however, be changed through compulsory introductory Welsh language classes for immigrants.

The results obtained in the present study show that the topic is worthy of further pursuit. Firstly, it is indispensable to expand the pool of respondents to gain even more representative reports and enable divisions into various populations, e.g., students versus University graduates and employees versus parents of school children. It has indeed been shown in previous research on migrant families with children in Wales that attitudes of parents towards Welsh might be affected by compulsory Welsh classes their children attend (cf. Rosiak 2018). Participants' knowledge of English had no role in these groups. Such intergroup comparisons might reveal interesting differences if studied on a larger scale. Secondly, more research into attitudes of Poles towards minority languages, both in Poland and abroad, are needed to have a better understanding of their language ideologies.

Research funding: This work was supported by the National Science Centre under grant number 2017/01/X/HS2/02094 (Miniatura 1).

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