Studies in Polish Linguistics
vol. 16 (2021), issue 4, pp. 187–205
doi:10.4467/23005920SPL.21.009.14677
www.ejournals.eu/SPL

Mateusz Urban https://orcid.org/0000-0002-1155-7889
Jagiellonian University

Podhale Goralian Vowels in Józef Tischner's Recordings of *Historia filozofii po góralsku*: An Acoustic Phonetic Analysis

Abstract
The current study is exploratory in character and aims to investigate the extent to which dialectal features are present in a stylised version of a regional variety of Polish. The focus is on three traditional features of Podhale Goralian that make it markedly different from Standard Polish: the treatment of Middle Polish raised vowels *ė ȧ ȯ*, prenasal raising and the Podhale archaism. The material analysed comprises a selection of recordings of Józef Tischner's *Historii filozofii po góralsku* [A Goral History of Philosophy] performed by himself. The recordings were subjected to acoustic analysis to obtain values of the first two formants of the relevant vowels. An analysis was then conducted with the help of vowel plots created on the basis of the measurements. The conclusions indicate that the traditional features of Podhale Goralian are not always consistently realized in the recordings, which in the majority of cases may be attributed to the influence of Standard Polish.

Keywords
Podhale Goralian, raised vowels, Podhale archaism, stylised pronunciation, Józef Tischner, acoustic phonetics

Abstrakt
Artykuł ma charakter eksploracyjny i ma na celu ustalenie stopnia realizacji cech dialektalnych w stylizowanej wersji regionalnej odmiany języka polskiego. Przedmiotem badania są trzy tradycyjne cechy gwary podhalańskiej, które odróżniają ją od standardowej odmiany języka polskiego: rozwój tzw. samogłosek ścieśnionych, podniesienie artykulacji samogłosek przed spółgłoską nosową oraz archaizm podhalański. Za materiał posłużyły nagrania wybranych fragmentów *Historii filozofii po góralsku* ks. Józefa

Tischnera dokonane przez niego samego. Nagrania poddano analizie akustycznej w celu zmierzenia wartości dwóch pierwszych formantów badanych samogłosek. Na podstawie pomiarów sporządzono wykresy samogłosek, według których przeprowadzono analizę wybranych cech. Badanie prowadzi do wniosków, iż nie wszystkie tradycyjne cechy gwarowe są konsekwentnie realizowane w nagraniach i w większości przypadków jest to wpływ systemu standardowego.

Słowa kluczowe
gwara podhalańska, samogłoski ścieśnione, archaizm podhalański, wymowa stylizowana, Józef Tischner, fonetyka akustyczna

1. Motivation for the study

Methods of acoustic phonetics are widely used in studies of Standard Polish particularly in experimental settings. However, they have only recently been employed in research into regional non-standard varieties of Polish (e.g. Garczyńska 2007; Garczyńska et al. 2013–2017; Garczyńska 2017; Rybka 2017). These works might be seen as belonging to the area of sociophonetics, which has been variously defined (see Di Paolo and Yaeger-Dror 2010; Thomas 2011; Kendall and Fridland 2021) but may be broadly understood as an intersection of experimental, acoustic, and articulatory approaches to phonetics with the interest in language variation.

To the best of my knowledge, no sociophonetic analysis has been undertaken so far of Podhale Goralian,[1] a variety spoken in the vicinity of the Tatra mountain range, and neighbouring the dialects of Spisz to the East and Orawa to the West. The current article is narrower in scope, however. It is a study of the idiolect of a speaker of that variety, Rev. Józef Tischner, as reflected in the audio recordings of his *Historia filozofii po góralsku* (= A Goral History of Philosophy; henceforth, HFG). This kind of research into the speech of a particular speaker in a fixed setting is not uncommon in sociophonetics, and has led to interesting conclusions about within-individual variation, see e.g. the studies of Queen Elizabeth II's accent (Harrington, Palethorpe and Watson 2000; Harrington 2006) or the idiolects of Daniel Jones and J.R. Firth (Przedlacka and Ashby 2019).

Still, the variety under study is a very specific one. It has been described as a stylized version of the dialect (Kulak 2018) and it is used in an oral interpretation of a written text, recorded in a studio setting where no actual interlocutors are present, but intended for an invisible audience mostly composed of Standard Polish speakers,. This is a context which obviously is far removed from the idea of a sociolinguistic interview, which aims to elicit

[1] I adopt the name used by Rubach and Łuszczek (2019).

spontaneous speech samples. Be that as it may, the recordings are still interesting from a sociolinguistic point of view. There are numerous factors that may influence the speaker's linguistic choices in such a situation. On the one hand, the regional variety is used deliberately by the author and should sound sufficiently "authentic". On the other, there is a pressure to convey the intended message and to be understood by the general audience, whose knowledge of the variety used is only fragmentary at best. The relationship between the sound and the spelling is also non-trivial, particularly in this case, since until Kąś (2015–2019) Podhale Goralian did not have a standardized spelling system. I believe that for these reasons it is worthwhile to investigate the extent and manner in which regional Podhale Goralian features manifest themselves in Tischner's recordings.

2. Podhale Goralian

While Podhale Goralian (henceforth, PG) is one of the best known and most widely studied regional varieties of Polish, the available research is rather imbalanced in its scope and depth (Rak 2014). More specifically, the phonetics and phonology of PG have not been discussed in a book-length monograph comparable to Karaś (1965) and Sowa (1990) on the Orawa and Spisz varieties respectively. Nevertheless, various aspects of this topic have been dealt with over the years (e.g. Kryński 1884; Kosiński 1884; Małecki 1928; Gołąb 1954; Decaux 1973). The most systematic description of the dialect including its phonetic and phonological features is offered by Kąś (2015–2019, vol. 1: 29–37); detailed remarks on pronunciation and the justification of the spelling solutions adopted in Kąś's dictionary can also be found in Kąś and Sikora (2004). For a recent overview of the current PG phonological system in English, see Rubach and Łuszczek (2019).

When it comes to vocalic features, the Podhale dialect differs from the standard variety of Polish on a number of points, both systemic and distributional. Three of these differences are the focus of this article: the treatment of the raised vowels, vowel raising in prenasal contexts, and the Podhale archaism. These are discussed in more detail in the next three subsections.

Before proceeding, a few remarks on notation are due. Unless otherwise stated, all PG lexemes in the article are cited in Kąś's (2015–2019) orthography in italics. Spellings from HFG are given in roman typeface in angle brackets. With respect to Middle Polish raised vowels I adopt the notation from Dubisz, Karaś and Kolis (1995), i.e. *ė*, *ȧ* and *ȯ*, which is almost identical to that used by Stieber (1973), with the exception of *ȧ*, which the latter author writes as *å*. Capital N indicates any nasal consonant.

2.1. The raised vowels

While Standard Polish (SP) has five oral vowel phonemes (/i/, /ɨ/, /ɛ/, /a/, /ɔ/, /u/), PG, in its most traditional form, uses two additional vowels, namely /ɒ/ and /o/. These are the descendants of Middle Polish (MP) *ȧ* and *ȯ* respectively, which, along with *ė*, are described as raised or tense (*ścieśnione* a.k.a. *pochylone* in Polish linguistic tradition) and believed to have been phonetically higher than their plain counterparts *a, o, e*. The raised vowels gradually disappeared in SP: in general *ė* and *ȧ* lowered and merged with *e* and *a*, whereas *ȯ* rose and merged with *u*. However, the old contrasts were retained to varying extents in the non-standard varieties. While Gołąb (1954: 95) observes that *ȯ* has risen to *u* [u] for many PG speakers, there is no indication of that in Kąś (2015–2019, vol. 1: 36) who treats these as distinct phonemes (i.e. /o/ vs. /u/, e.g. PG *przód* /pʂot/ 'front' vs *cud* /t͡ʂut/ 'miracle'; cf. SP *przód* [pʂut], *cud* [t͡ʂut]), which indicates that the vowel was undergoing merger in the mid 20th century, but has since reversed from its path. However, the same author reports age-graded variation with regard to the descendant of *ȧ* (Kąś 2015–2019, vol. 1: 36). Older PG speakers continue pronouncing it as /ɒ/ (< *ȧ*), i.e. distinct from both /a/ (< *a*) and /ɔ/ (< *o*), whereas the youngest generation has merged it with the latter vowel. The only difference between PG /ɔ/ < MP *o* and PG /ɔ/ < MP *ȧ* for the younger speakers is that the former may undergo glide prothesis whereas the latter cannot; compare the two vowels in *kowol* ['kɔvɔl ~ 'kuɔvɔl] 'blacksmith' (cf. earlier PG ['kɔvɒl ~ 'kuɔvɒl]; SP *kowal* ['kɔval]).

The reflex of MP *ė* is identical to that of *y* (suggesting the quality of [ɨ]) in PG according to Kąś (2015–2019, vol. 1: 30) and denoted as <y> in his dictionary, compare *dych* [dɨx ~ dɨk] 'breath' (= SP *dech* [dɛx]), and *dym* [dɨm] 'smoke' (= SP *dym* [dɨm]). However, the quality of the merged vowel in Rubach and Łuszczek's (2019) material is estimated auditorily by the authors to be [e], so that the words above are pronounced as [dex] and [dem] respectively. All speakers in Rubach and Łuszczek's corpus are under 50 and the authors believe that the different vowel quality reflects a recent lowering and fronting of the PG continuant of MP *ė*. For now we will follow the tradition, referring to this PG vowel as *y*, and assume its phonetic realization to be [ɨ], although cf. section 6.1.

2.2. Prenasal raising

Context-dependent vowel raising is found in PG in environments involving nasality and nasalization. This applies both to the reflexes of the historical nasal vowels, written in SP as *ę* and *ą*, which in PG underwent decomposition to *e*N and *o*N in all contexts except before fricatives, and to etymological

*e*N and *o*N sequences. In PG only *ę* and *e*N are raised regularly to [ɨ̃] and [ɨN] (e.g. PG *cynsto* [t͡sɨ̃stɔ] 'frequently', *syn* [sɨn] 'dream; sleep'; cf. SP *często* [tʂɛ̃wstɔ], *sen* [sɛn]), even though the change seems relatively recent (Kąś and Sikora 2004: 40). The raising of *o*N (as well as when *o* is followed by a liquid), is also found, but in contrast to the Spisz region to the east, where it is regular, it is highly variable and restricted lexically in much of the Podhale area, e.g. PG *kóń* [koɲ] 'horse' vs. SP *koń* [kɔɲ] (Kąś and Sikora 2004: 36), so that Kąś (2015–2019) has *ó* only in selected lexemes, frequently alternating with *o* (e.g. *dóm* 'house' , *kómar ~ komar* 'mosquito' *kóniec ~ koniec* 'end' *podpłómyk* 'flat bread', *skómlić ~ skomleć* 'to whine', but only *domb* 'oak', *płomiyń* 'flame', *słoma* 'straw'). Nevertheless, Gołąb (1954: 95,) observes that the northeastern part of Podhale, exhibits a stronger and more consistent tendency for prenasal raising of *o*. He further notes that in that area the process may also operate in those *o*N combinations in which the vowel derives from MP *ȧ*, so that PG *pon* 'mister; lord' (= SP *pan*), pronounced [pɒn] or [pɔn] elsewhere in Podhale, might become [pon] in the northeast. This is corroborated by Sobierajski (1966: 52–54; maps 78–82), who denotes [ɒ ~ ɔ] as the Podhale type, and [o] as the Spisz type.

2.3. The Podhale archaism

As opposed to SP, PG retains high front /i/ in the following contexts:

a. after the historic /t͡sʲ d͡zʲ/

e.g.	PG	*chłopcý* [xwɔpt͡sʲi] 'boys'	SP	*chłopcy* [xwɔpt͡sɨ]
		drudzý [druɗ͡zʲi] pl. 'second'		*drudzy* [druɗ͡zɨ]

b. after the historic /ʂ ʐ t͡ʂ d͡ʐ/ (> /s z t͡s d͡z/)

e.g.	PG	*sýba* /sʲiba/ 'pane'	SP	*szyba* /ʂɨba/
		zýto /zʲitɔ/ 'rye'		*żyto* /ʐɨtɔ/
		cýsty /t͡sʲistɨ/ 'clean'		*czysty* /t͡ʂɨstɨ/
		drozdzý /drɔzɗ͡zʲi/ gen.pl. 'yeast'		*drożdży* /drɔʐɗ͡ʐɨ/

This feature is traditionally referred to as the Podhale archaism (*archaizm podhalański*; Małecki 1928). Kąś (2015–2019, vol. 1: 37) observes that it was extended by analogy to similar combinations where /s z t͡s d͡z/ are original rather than the product of dentalization of /ʂ ʐ t͡ʂ d͡ʐ/ (e.g. PG *sýn* [sʲin] 'son', cf. SP *syn* [sɨn]). He also separates these two patterns from the one where /i/ follows /ʐ/ (< *ř*), as in PG *przi* [pʂi] 'by' (cf. SP *przy* [pʂɨ]), due to the latter feature's greater geographical range. Since our interest lies less in the diachronic relationships than in their synchronic outcomes and because of the same inherent principle (i.e. occurrence of /i/ after coronal obstruents where SP has /ɨ/), we will treat all of these as instances of the same phenomenon and refer to it as the Podhale archaism for simplicity.

As for the precise phonetic quality of the Podhale archaism vowel, Małecki (1928) says it is intermediate between [i] and [ɨ] (so perhaps some kind of [ɪ]?) and writes it as *ý*. Kąś and Sikora (2004: 34–35) analyse a number of earlier sources and conclude that most realizations after /ʐ/ are identical to [i], whereas after the dentals (whether original or derived by dentalization) the quality is more typically intermediate between [i] and [ɨ], although in all situations variation is observed. Furthermore, they also note that there are instances of substitution of the Podhale archaism vowel with SP /ɨ/. Finally, Rubach and Łuszczek (2019) indicate that in their data, collected from speakers under 50, the vowel has shifted to a central, retracted [ɨ].

3. The speaker and his relationship to Podhale[2]

Józef Tischner (1931–2000) was a Polish Catholic priest and a philosopher. In the 1980s he was actively engaged in the anti-communist movement and was a prominent supporter of Solidarity, expressing his views particularly in homilies and his articles published in the press. After the fall of the Iron Curtain he continued to comment on Polish political and public matters.

He grew up in Łopuszna in the Podhale region, where his father was the headmaster at a local school and his mother worked as a teacher. Tischner spent long spans of his childhood at his mother's parents' house in Jurgów in the neighbouring, but linguistically different, Spisz region. This indicates that Tischner's linguistic influences were already diverse at this early formative stage.

During his school years he was obviously exposed to SP, which he continued to speak throughout his life. In an interview quoted by Bonowicz (2018) Tischner admits that there was a period in the 1960s when he did not feel comfortable expressing himself in his native dialect owing to the years he had spent living, studying, and working in Kraków. This changed in the late 1970s, when he began coming back to Podhale more regularly. In 1981 he was elected chaplain of the Podhalan Union and eventually became an active promoter of the Podhale culture. He also began incorporating the local dialect into his preaching activities and writings.

HFG, originally published in serial form in 1997 by the Kraków-based weekly *Przekrój*, is a collection of short tales, in which the history of Greek philosophy is reimagined as if it had taken place in Podhale, and as if the great thinkers were in fact various friends of Tischner's, activists, writers, musicians, and other prominent locals. Strongly inspired by the Podhale culture, outlook and wit, the collection turned out extremely successful, and

[2] This section draws on Bonowicz (2018, 2020).

before the year's end it was published as a book, which has been in print ever since.

A plan also soon emerged for Tischner to record his own rendering of the stories for broadcast on Radio Kraków. These recordings are now available on four CDs accompanying Tischner (2006). Three of these feature readings by the author, whereas the ones on the fourth CD were recorded by Stanisława Trebunia-Staszel. Only the recordings of Tischner's voice are taken into consideration in the current analysis.

4. The genre and the language of HFG

The audio version of HFG is an instance of scripted speech, which means that the content and the form were deliberately chosen by the author at the time of the creation of the written original. At the same time, since the stories are to represent an informal oral genre, Tischner took care to make his text appear relatively chatty. The very choice of PG – or rather a stylized written version of it – as the medium contributes to this effect. However, this affected spontaneity is particularly evident in the audio version, where the author makes full use of intonation, pauses and timing, and introduces various discourse markers, like *(h)ej*, *ee*, or *no*, which are absent from the written original and help manage the flow of narrative.

As for the phonetic aspects of HFG, two earlier studies are relevant for our analysis. Krupska-Perek (1999) compares the written and the spoken version of Tischner's text with the aim of determining their mutual relationship, whereas Kulak (2018) focuses primarily on how dialect stylization is manifested phonetically in HFG. Their discussion with respect to the representation of the features under study in HFG might be summarized in the following way:

a. the original MP raised vowels are usually (albeit not entirely consistently) manifested in the written version (*ȧ* = <o>; *ȯ* = <ó>; *ė* = <y>);
b. prenasal raising is indicated less consistently: word-medial historical nasal vowels are almost universally writen as <ą> and <ę>, whereas raising in original *e*N and *o*N combinations is marked at random; Spisz type raising of MP *ȧ* to [o] is usually indicated by <ó>;
c. the Podhale archaism is generally not marked, apart from occasional instances of <rzi>;
d. all regional features appear more consistently and with greater frequency in the audio version.

In connection to this last observation, a question arises as to whether it can be confirmed by systematic acoustic measurements. We will take up this issue in the remainder of the current article.

5. Data and methods

Because the audio version of HFG was intended for radio broadcast, it had been recorded in a professional recording studio, so that the audio quality is excellent. Only the first nine stories were used for the current analysis, which amounts to a total of 51 minutes and 5 seconds of audio (ca. 30% of the entire material from HFG recorded by Tischner).

The recordings were first saved as 16-bit 44.1 kHz stereo WAV files using Exact Audio Copy (Wiethoff 2020). In each case the left channel was extracted in Praat to obtain mono files for acoustic analysis (Boersma and Weenink 2021). No other preprocessing of the audio files was involved. Orthographic transcripts of the recordings to be used were then created as plaintext files based on Tischner (2006).

Annotation of the recordings was performed with the help of WebMAUS Basic (Kisler, Reichel and Schiel 2017), an online interface for forced alignment. When audio and an orthographic transcript are used as input, WebMAUS Basic proceeds in three steps. First, the orthographic transcript is turned into a phonological transcription by means of a grapheme-to-phoneme conversion (G2P) tool based on a language-specific model. Then, the canonical pronunciation serves as input to a language-specific Markov model the purpose of which is to predict the likely pronunciation variants. Finally, alignment is performed using the Markov model and the audio signal.

Crucially, the G2P model and the Markov model offered by WebMAUS for Polish were both trained on SP data. This may raise the question of their applicability to PG. However, while this variety is markedly different in several respects from the standard, and the orthography used in Tischner (2006) is non-standard and somewhat inconsistent, the forced aligner was only meant as an auxiliary tool for providing rough alignment to be corrected later. It was therefore decided that these issues can be ignored.[3]

The next step involved the selection of tokens for analysis and the manual correction of annotations. To eliminate any variation attributable to stress placement, only stressed vowels in content words were considered, although otherwise the phonetic environment was not controlled for at this stage. Function words were excluded because, whether stressed or not, they are high frequency words, which are likely to behave irregularly and due to their sheer number, they may skew the distribution of a given vowel category. The

[3] It must be also emphasized that given all these potential adversities, the annotations produced by WebMAUS in the end were quite accurate, although this is only based on the author's overall impressions, as no quantitative assessment of accuracy was conducted. Nevertheless, the result allows for moderate optimism as regards the potential usefulness of WebMAUS for annotation of recordings of non-standard varieties of Polish.

presence of stress was evaluated auditorily in initial syllables, taking into account that under normal circumstances stress in PG is word-initial, unless the word forms a phrase with a preceding clitic, which is then itself stressed. The latter fact meant that there was an overwhelming number of tokens of stressed prepositions and *nie*, which additionally supported the decision to exclude function words. Both kinds of elements were present anyway as prefixes, but the number of these was smaller and not considered detrimental. Finally, all vowels shorter than 50 ms were ignored to ensure sufficient vowel duration for reliable measurements, which is common practice in sociophonetics (Kendall and Fridland 2021: 61).

Annotation correction primarily involved readjusting segment boundaries, which was performed in compliance with the principles laid out by Machač and Skarnitzl (2009). Also, annotations corresponding to orthographic nasal vowels had to be corrected manually, as WebMAUS tended to have trouble deciding whether these were to be treated as simplex or complex. Finally, glide prothesis turned out to be problematic too, and therefore particular attention was paid to distinguishing between instances of /wɔ/ vs. /ɔ/. In all these cases where ambiguities could not be reasonably resolved, the decision was made to discard a given token.

Once token selection was completed, a script was used to obtain formant measurements using Praat's linear prediction algorithm. The script was written so as to ensure full control of all the relevant LPC parameters. More specifically, the user can choose the default formant ceiling and the number of formants that the algorithm is expected to look for and then adjust these settings individually for each vowel token marked in the TextGrid as suitable for analysis, by examining the formant tracks displayed in the SoundEditor window and the tentative formant readouts that the current setup produces. Customization of formant tracking settings on a token-by-token basis is recommended by Harrison (2013).

The output of the script included the vowel label, F1, F2 and F3 values at 20%, 33%, 50%, 66% and 80% of token duration, the word label, vowel duration, as well as information about the preceding and following segment. The measurements obtained in this way were then double-checked for any tokens out of the ordinary to make sure that no outliers were due to errors in analysis.

6. Results and discussion

In the following discussion, IPA transcription is avoided whenever precise phonetic quality is irrelevant or even undesirable. In all such cases (including the vowel plots), the vowel categories will be mostly referred to using

Kąś's (2015–2019) spelling, which is entirely sufficient for such purposes. This applies to the reflexes of MP raised *ȯ* (= *ó* in Kąś and our notation) and *ė* (= *y*), the Podhale archaism vowel (= *ý*) and the non-raised vowels (= *i*, *e*, *a*, *o*, *u*). One exception that will be made is that reflexes of MP *ȧ* (= *o* in Kąś) will be indicated as *á* in our notation. If he were alive now, Tischner would be 90 years old, and would likely be classified as a representative of the eldest generation, of whom Kąś says that they still retain the contrast. Furthermore, prenasal *e* and *á* are written by Kąś as *y* and *o*, emphasizing their raised quality, whereas the raising of prenasal *o*, is marked inconsistently. In the following discussion we continue to refer to these vowels as *e*N, *a*N, and *o*N respectively.

The F1 and F2 values obtained at 33% and 66% of token duration were used for initial exploration of overall vowel trajectories. This analysis leads to the conclusion that all the vowels are monophthongal, with the obvious exception of tokens of *o* with glide prothesis. These are then excluded from further analysis. All plots discussed in this section are based on formant values measured at vowel midpoint.

The plots were created using the `ggplot2` package, ver. 3.3.5 (Wickham 2016) in R (R Core Team 2021) with the help of RStudio 2021.09.0, build 351 (RStudio Team 2020). In view of the unbalanced character of the sample, with some vowel classes considerably underrepresented (see below), no additional statistical analysis was conducted. Therefore, the following discussion is exploratory in character and its results await further confirmation based on a larger and more representative dataset.

6.1. Overview of the raised vowels in HFG

As a first approximation, let us discuss the distributions of the different vowel categories in the F2–F1 space shown in Figure 1, which is based on all preoral stressed vowel tokens.

The plot suggests that there is a lot of variation within each vowel category, particularly *ý* and *e*. Some of it is likely due to coarticulatory effects, which is expected given that the context is not controlled for. Nevertheless, some preliminary conclusions might be drawn with respect to the vowels under study.

First, Figure 1 indicates that *ó* occupies an area of the vowel space intermediate between *o* and *u*, even though there is some overlap with both. In other words, the reader of HFG generally seems to pronounce this vowel category in an acoustically distinct way as mid-high [o], even though individual tokens may be realized closer to mid-low [ɔ], and high [u].

The position of *á* is somewhat ambiguous. On the one hand, there is a high degree of overlap with *o* and even, albeit to a lesser extent, with *ó*.

At the same time, the distribution of *á* is clearly lower and more centralized than that of *o*. To put it another way, most tokens in this vowel category can be acoustically identified as mid-low [ɔ], but lower realizations of the [ɒ] type are also possible. This might point to an incomplete merger in the speaker's idiolect, which is consistent with the moribund status of *á* in PG.

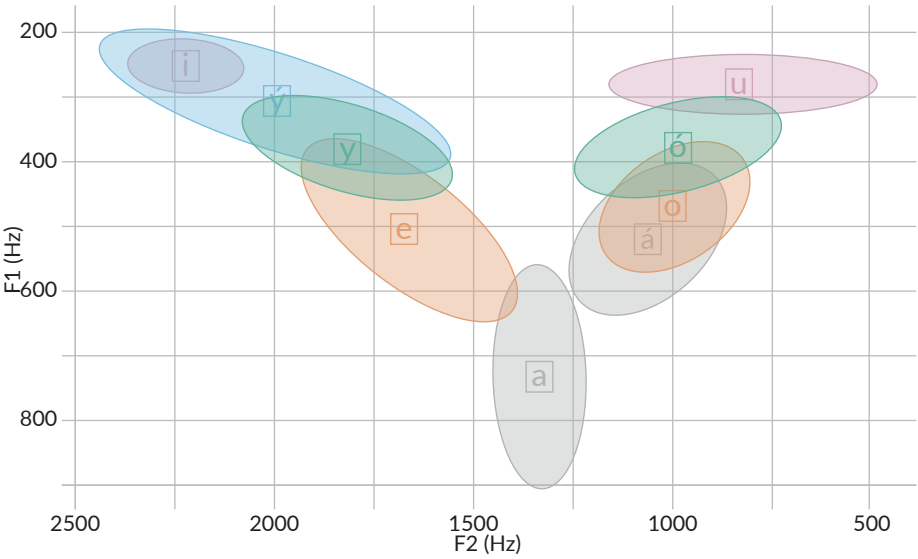

Figure 1: F2–F1 of HFG stressed preoral vowels.

Labels indicate means. Ellipses encompass areas within 1.5 SD of the mean.
Token counts: *i* = 71; *ý* = 83; *y* = 243; *e* = 266; *a* = 349; *á* = 100; *o* = 355; *ó* = 97; *u* = 119

The distribution of *y* tokens in the F2–F1 plane partly overlaps with *e* and appears to be a symmetrical counterpart of *ó*. This seems to corroborate Rubach and Łuszczek's (2019) conclusion that a more accurate IPA transcription of the reflex of MP *ė* is perhaps front mid-high [e].

Finally, as remarked above, *ý* shares space with *i* and *y* (and partly with *e*). In other words, the realizations of the vowel occupy a continuum between mid-high [e] and high [i].

Let us now examine vowel tokens in selected contexts in order to factor out certain kinds of coarticulatory influence. In Figure 2, all tokens in the vicinity of sonorants (nasals, liquids, and glides) have been excluded as these are known to affect vowel formants considerably. Furthermore, F2 is generally higher next to palatal consonants. This is not a problem for *i*, which is itself palatal and has a high F2, but other vowels are likely to be affected. Therefore, tokens of vowels other than *i* were excluded if they occurred

before or after palatal(ized) consonants. For this purpose true palatals /t͡ɕ d͡ʑ ɕ ʑ ɲ j/ were classified as palatal irrespective of whether they preceded or followed the analysed vowel, whereas palatalized labials and velars /pʲ bʲ fʲ vʲ kʲ dʲ xʲ/ were considered palatal only if they preceded the vowel, as it was only then that the palatality clearly affected formant structure. There was unfortunately colateral damage, because the resulting number of *ó* tokens was too low to compute a meaningful mean and standard deviation. Therefore, *ó* is represented in Figure 2 by individual tokens.

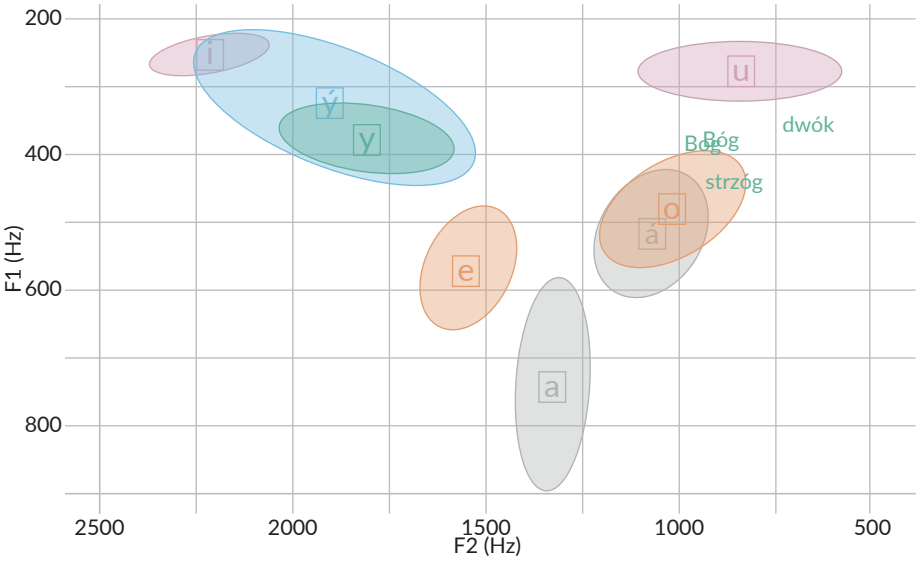

Figure 2: F2-F1 of HFG vowels in selected contexts (see text for details).
Labels indicate means. Ellipses encompass areas within 1.5 SD of the mean.
Token counts: *i* = 17; *ý* = 48; *y* = 76; *e* = 55; *a* = 78; *á* = 20; *o* = 132; *ó* = 4; *u* = 26

Compared to Figure 1, the amount of variation and overlap in the relevant vowel categories is clearly reduced in non-palatal interobstruent environments, except for *ý*, which will be discussed in more detail in the next section. The new plot confirms the observations regarding the other vowels, except for *ó*, whose status is difficult to trace due to the small number of tokens.

6.2. Podhale archaism

Figure 3 displays individual tokens of *ý* against the distributions of the other front vowels, but it has to be borne in mind that the overall number of tokens in this category is not very high, especially when one tries to consider

different phonetic contexts separately. Therefore, the following discussion should be treated as tentative.

Most words with stressed *ý* in our corpus are spelled with <y>. There are only two tokens with the expected spelling <i> (<przichodzi> 'he/she/it comes', <przisło> 'it came') and one with <e> (<przesięgom> instr.sg. 'oath'), which implies that spelling does not explain the variation.

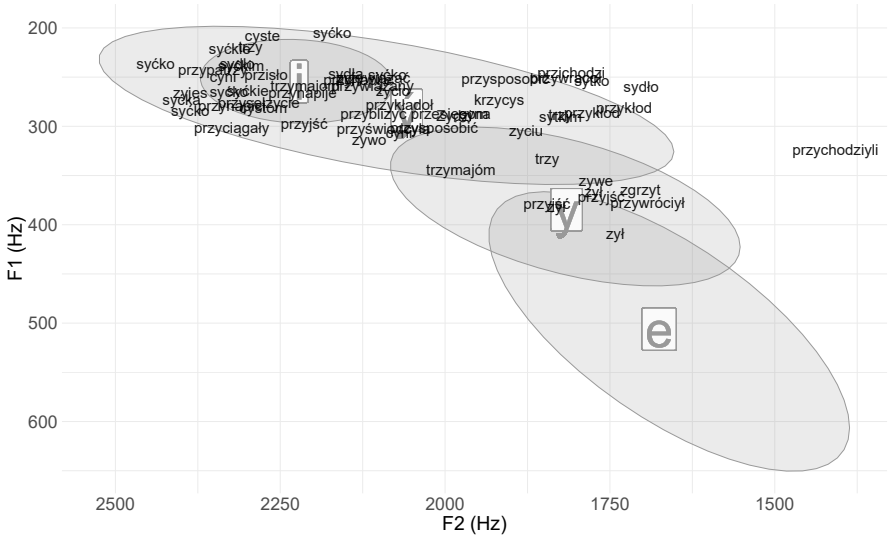

Figure 3: Individual tokens of *ý* (78 tokens) compared to the distributions of *i*, *y* and *e*, and the overall distribution of *ý*

Furthermore, combinations of <y> with <rz>, <s>, <z> and <c> seem to be scattered rather randomly between *i* and *y*, suggesting that their pronunciation is not determined by the nature of the preceding consonant either. To be sure, one should not expect any major coarticulatory effects here in the first place, because all preceding consonants are coronal and end in frication, although [s̪ z̪] (= orthographic <rz>) are admittedly somewhat retracted compared to the others. It is also worth remembering in this context Krupska-Perek's (1999) and Kulak's (2018) observation that the Podhale archaism vowel is occasionally spelled as <i> in the written HFG only after <rz>, which in a way correlates with Kąś and Sikora's (2004) assertion that the Podhale archaism vowel is typically pronounced as [i] following orthographic <rz> and as an intermediate vowel after the dentals. However, there is no evidence in our material of this alleged special status of <rz>, nor are there many instances of this sequence, as mentioned above.

As for the following consonant, higher and fronter pronunciations seem to be more common with palatals (e.g. <przyjść> 'to come', <syćko> 'everything' with [i]; but cf. <zyciu> dat.sg. 'life', with a lower and more retracted vowel), which might be a coarticulatory effect. The other places of articulation do not seem to follow any clear principle.

One striking lexical pattern may be observed, however. There is a cluster of derivatives of <*cyfra*> 'digit; ornament; kind of dance' that fall within the distribution of *y*. This decidedly lowered and retracted pronunciation is probably due to the somewhat more specialized meaning ('digit', although Tischner plays with the polysemy of this word family) and influence from SP phonotactics.

Finally, there is no indication in our material of a retracted quality of the Podhale archaism vowel reported by Rubach and Łuszczek (2019), the centralized pronunciation in <przychodziyli> in the right section of the plot being a clear outlier.

6.3. Prenasal raising

As discussed earlier there is a tendency in PG to raise mid vowels before nasal consonants, both in original vowel + nasal combinations and in those that arose by decomposition of nasal vowels. Figures 4–6 show the distributions of individual tokens of PG prenasal *e*, *á* and *o* respectively. The labels in black indicate HFG spelling of the individual tokens.

It might be observed in these plots that the spelling of the vowels when combined with a nasal is variable in HFG. The combination *e*N appears as <eN>, <ę> or <yN>; the combination *á*N, as <oN> or <óN>; and the combination *o*N, as <ą>, <oN> or <óN>. Overall, while <ę> and <ą> can only represent etymological nasal vowels, <eN> and <o/óN> can stand either for a nasal vowel or a vowel + nasal combination in HFG.

As for the pronunciation, prenasal raising of *y* is variable in HFG as shown in Figure 4. Many tokens are indeed raised compared to *e* [ɛ] and fall within the area of preoral *y*, i.e. phonetic [e] (see above). However, there are a number of pronunciations that are lower and should be seen as instances of [ɛ]. This may indicate SP influence on the speaker. However, it is worth noting that tokens spelled in <y> cluster in the higher and fronter section of the area occupied by *y*, whereas those spelled in <e/ę> are lower and backer. This indicates that when the spelling was standard (or close enough), the speaker tended to pronounce it in a more standard way and conversely, when the spelling was more obviously non-standard, the pronunciation tended to follow the PG pattern.

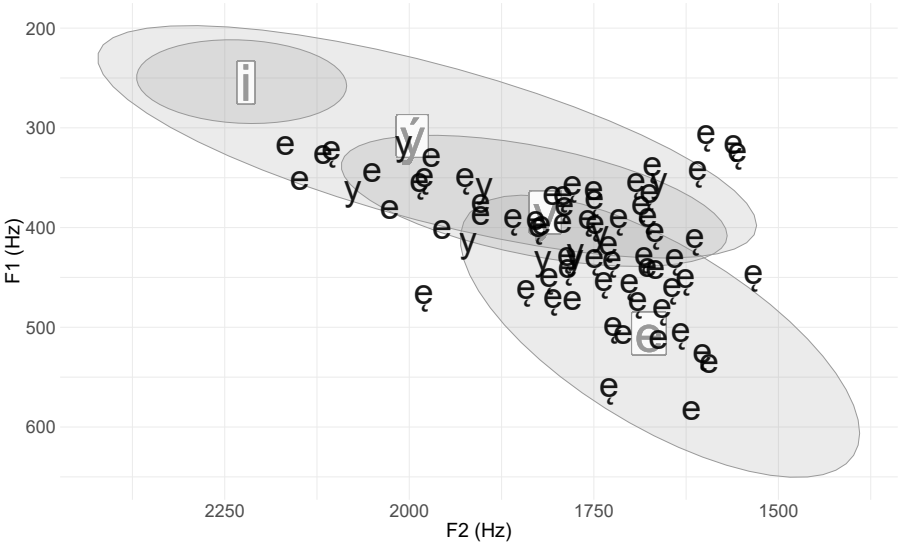

Figure 4: Individual *e*N tokens. The labels in black indicate spellings in HFG.
The grey labels (mean) and ellipses (1.5 SD) summarize the distributions of preoral tokens of the vowels

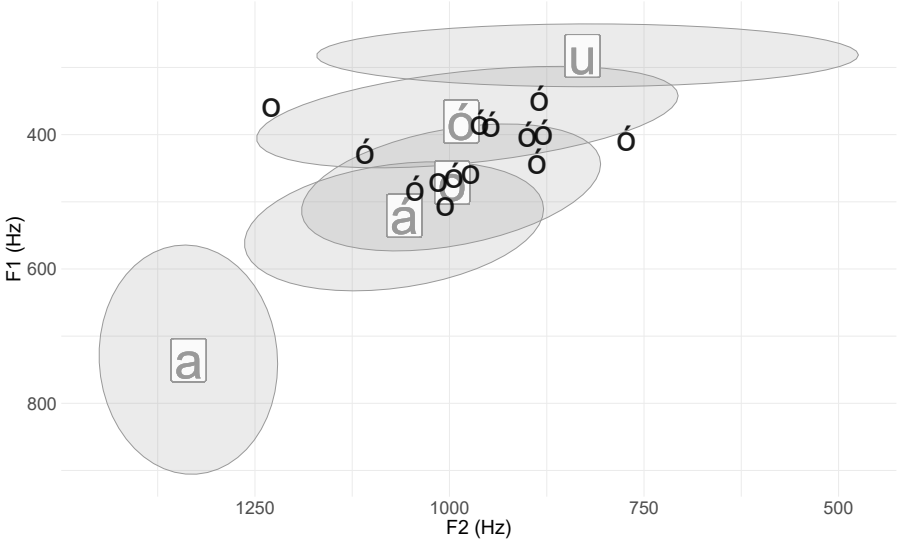

Figure 5: Individual *á*N tokens. The labels in black indicate spellings in HFG.
The grey labels (mean) and ellipses (1.5 SD) summarize the distributions of preoral tokens of the vowels

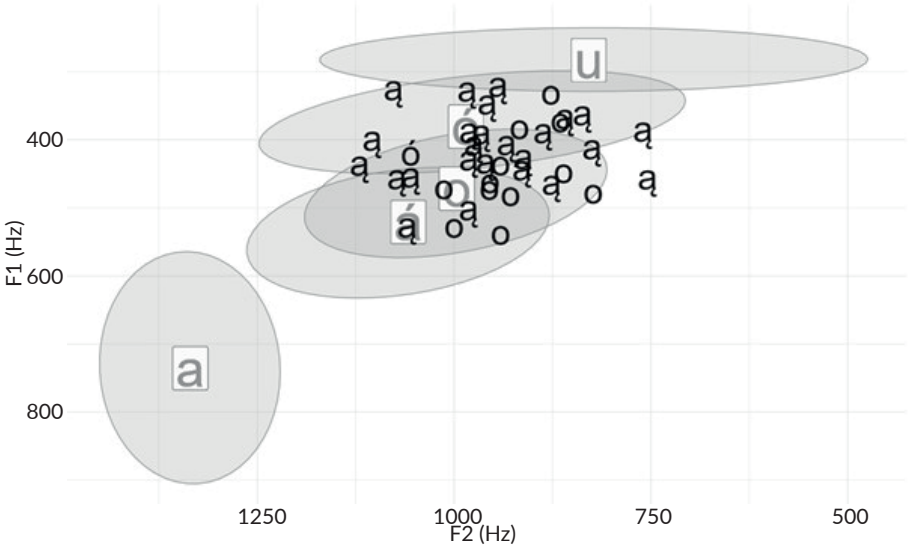

Figure 6: Individual *o*N tokens. The labels in black indicate spellings in HFG. The grey labels (mean) and ellipses (1.5 SD) summarize the distributions of preoral tokens of the vowels

The other two figures indicate overall more consistent raising of *á* and *o*. This is especially evident in the case of *á*N tokens, which are all spelled either <o> or <ó>, so there was no risk of spelling-based influence from the standard. However, some form of non-standard spelling influence can be seen after all, because while *á* in these words tends to be pronounced higher than *á* in preoral contexts in general, some instances as high as [o], and most of these are spelled with <ó>. Overall, Figure 6 shows that tokens of *o*N are located higher than preoral *o*, roughly in the area in which we also find raised *á*N in Figure 5. At the same time, there is no obvious relationship between spelling and pronunciation in the case of *o*N.

7. Conclusion

In summary, the acoustic analysis of the vowel system recorded in HFG has shown that it is largely typical of PG with respect to the treatment of the raised vowels, albeit with one realizational difference:

- *ó* is a separate phoneme with a quality intermediate between *o* and *u*;
- *á* is higher and backer than *a* and is almost merged with *o*;
- *é* is merged with *y* and different from *e*, but the dominant quality of the

merged vowel is front mid-high [e] as argued by Rubach and Łuszczek (2019), rather than [i] as the spelling might indicate.

In connection to the above, one particular avenue of research worth pursuing is the acoustics of the Podhale archaism vowel relative to PG *e* and *y* as well as SP *y*. A recent study of the acoustics of SP vowels has revealed that *y* has overall a lower and fronter realization than traditionally assumed (Weckwerth and Balas 2020), which adds another interesting dimension to this problem.

The realization of the other PG features in HFG turned out to be variable and not always consistent:

- the Podhale archaism vowel is variable between [i] and a pronunciation more consistent with the phonotactic patterns of SP; however, no sign of retraction of this vowel reported by Rubach and Łuszczek (2019) was found;
- prenasal raising appeared to be less consistent for *e* and more consistent for *á* and *o*, which is the opposite of the pattern reported in PG; the first of these may be related to the influence of SP, whereas the latter two seem to reflect Spisz-type raising, which is consistent with the speaker's background.

On a final note, it is important to emphasize that not only should these results not be generalized to Podhale Goralian at large, but they should not be taken as a comprehensive representation of Tischner's own idiolect. They should rather be considered an illustration of a particular instance of dialect performance.

References

Bates Douglas, Mächler Martin, Bolker Ben, Walker Steve (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software* 67(1), 1–48.

Boersma Paul, Weenink David (2021). *Praat: Doing Phonetics by Computer*. URL: https://www.fon.hum.uva.nl/praat/. Accessed March 25th 2021.

Bonowicz Wojciech (2018). W głąb siebie, czyli jak to było z *Historią filozofii po góralsku*. In Józef Tischner, *Historia filozofii po góralsku*, 167–184. Kraków: Społeczny Instytut Wydawniczy "Znak".

Bonowicz Wojciech (2020). *Tischner. Biografia*. Kraków: Społeczny Instytut Wydawniczy "Znak".

Decaux Étienne (1973). Tzw. archaizm podhalański a sprawa mazurzenia w Małopolsce. *Revue des études slaves* 49, 119–130.

Di Paolo Marianna, Yaeger-Dror Malcah (eds.) (2010). *Sociophonetics: A Student's Guide*. London–New York: Routledge.

Dubisz Stanisław, Karaś Halina, Kolis Nijola (1995). *Dialekty i gwary polskie*. Warszawa: Wiedza Powszechna.

Garczyńska Justyna (2007). *Analiza fonetyczna akcentowanych samogłosek ustnych w mowie polek z Kazachstanu*. Warszawa: Wydział Polonistyki Uniwersytetu Warszawskiego.

Garczyńska Justyna (2017). *Samogłoski ustne w gwarze kurpiowskiej*. Warszawa: Wydział Polonistyki Uniwersytetu Warszawskiego.

Garczyńska Justyna, Kresa Monika, Żurek Aleksandra, Krzemińska-Albrycht Ida (2013–2017). Baza Mazak. Mazowiecka akustyczna baza danych. *Baza Mazak. Mazowiecka Akustyczna Baza Danych*. URL: http://206.189.49.76:8000/. Accessed July 25th 2021.

Gołąb Zbigniew (1954). O zróżnicowaniu wewnętrznym gwary podhalańskiej. *Język Polski* 34(2), 85–111.

Harrington Jonathan (2006). An acoustic analysis of 'happy-tensing' in the Queen's Christmas broadcasts. *Journal of Phonetics* 34(4), 439–457.

Harrington Jonathan, Palethorpe Sallyanne, Watson Catherine (2000). Monophthongal vowel changes in Received Pronunciation: An acoustic analysis of the Queen's Christmas broadcasts. *Journal of the International Phonetic Association* 30(1–2), 63–78.

Harrison Philip T. (2013). Making accurate formant measurements: An empirical investigation of the influence of the measurement tool, analysis settings and speaker on formant measurements, Ph.D. dissertation. York, UK: University of York. URL: https://etheses.whiterose.ac.uk/7393/1/Harrison%20-%20PhD%20Thesis.pdf. Accessed March 21st, 2017.

Karaś Mieczysław (1965). Polskie dialekty Orawy, cz. 1: Fonologia i fonetyka. *Zeszyty Naukowe Uniwersytetu Jagiellońskiego. Prace Językoznawcze*. Vol. 16. Kraków: Uniwersytet Jagielloński.

Kąś Józef (2015–2019). *Ilustrowany leksykon gwary i kultury podhalańskiej*. 12 vols. Bukowina Tatrzańska–Nowy Sącz–Nowy Targ: Bukowiańskie Centrum Kultury "Dom Ludowy"; Małopolskie Centrum Kultury "Sokół"; Zakład Poligraficzny "MK".

Kąś Józef, Sikora Kazimierz (2004). Ortografia podhalańska – problemy podstawowe i propozycje rozwiązań. In *Edukacja regionalna na Podtatrzu. Ścieżki i manowce*, Anna Mlekodaj (ed.), 17–51. Nowy Targ: Podhalańska Państwowa Wyższa Szkoła Zawodowa.

Kendall Tyler, Fridland Valerie (2021). *Sociophonetics*. Key Topics in Sociolinguistics. Cambridge: Cambridge University Press.

Kisler Thomas, Reichel Uwe, Schiel Florian (2017). Multilingual processing of speech via web services. *Computer Speech & Language* 45, 326–347.

Kosiński Władysław (1884). Przyczynek do gwary zakopiańskiej. *Rozprawy i Sprawozdania z Posiedzeń Wydziału Filologicznego Akademii Umiejętności* 10, 225–309.

Krupska-Perek Anna (1999). Napisana i wygłoszona „Historia filozofii po góralsku". Problem tożsamości tekstu. *Rozprawy Komisji Językowej Łódzkiego Towarzystwa Naukowego* 44, 45–56.

Kryński Adam Antoni (1884). Gwara zakopiańska. Studyjum dialektologiczne. *Rozprawy i sprawozdania z posiedzeń Wydziału Filologicznego Akademii Umiejętności* 10, 171–224.

Kulak Ilona (2018). Fonetyczne wykładniki stylizacji gwarowej „Historii filozofii po góralsku" Józefa Tischnera. *Literatura Ludowa* 62(2), 15–26.

Kuznetsova Alexandra, Brockhoff Per B., Christensen Rune H. B. 2017. lmerTest package: Tests in linear mixed effects models. *Journal of Statistical Software* 82(13): 1–26.

Machač Pavel, Skarnitzl Radek (2009). *Principles of Phonetic Segmentation.* Prague: Epocha Publishing House.

Małecki Mieczysław (1928). *Archaizm podhalański (wraz z próbą wyznaczenia granic tego dialektu).* [Monografje Polskich Cech Gwarowych]. Vol. 4. Kraków: Polska Akademia Umiejętności.

R Core Team (2021). *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing.

Rak Maciej (2014). Badania dialektologiczne na Podhalu. *Wierchy* 80, 169–180.

Rubach Jerzy, Łuszczek Tomasz (2019). The vowel system of Podhale goralian. *Research in Language* 17(2), 105–126.

Rybka Piotr (2017). Gwarowa wymowa mieszkańców Górnego Śląska w ujęciu akustycznym (w oparciu o autorską metodę badawczą), Ph.D. dissertation. Katowice: University of Silesia. URL: https://sbc.org.pl/Content/276325/praca_doktorska_Piotr_Rybka.pdf. Accessed June 19th 2019.

Sobierajski Zenon (1966). *Atlas polskich gwar spiskich na terenie Polski i Czechosłowacji.* Vol. 1. Poznań: Poznańskie Towarzystwo Przyjaciół Nauk.

Sowa Franciszek (1990). *System fonologiczny gwar spiskich.* Prace Instytutu Języka Polskiego. Vol. 72. Wrocław–Warszawa–Kraków: Zakład Narodowy im. Ossolińskich. Wydawnictwo Polskiej Akademii Nauk.

Stieber Zdzisław (1973). *A Historical Phonology of the Polish Language* [Historical Phonology of the Slavic Languages]. Heidelberg: Carl Winter Universitätsverlag.

Thomas Erik R. (2011). *Sociophonetics: An Introduction.* New York: Palgrave Macmillan.

Tischner Józef (2006). *Historia filozofii po góralsku.* Kraków: Społeczny Instytut Wydawniczy "Znak".

Weckwerth Jarosław, Balas Anna (2020). Selected aspects of Polish vowel formants. In *Approaches to the Study and Sound Structure of Speech*, Magdalena Wrembel, Agnieszka Kiełkiewicz-Janowiak, Piotr Gąsiorowski (eds.), 338–348. New York–London: Routledge.

Wickham Hadley (2016). *ggplot2: Elegant Graphics for Data Analysis.* New York: Springer.

Wiethoff Andre (2020). *Exact Audio Copy* (version 1.6). URL: https://www.exactaudiocopy.de/en/. Accessed October 27th 2021.

Instytut Filologii Angielskiej
Uniwersytet Jagielloński
al. Mickiewicza 9a
31-120 Kraków
Polska
mateusz.urban(at)uj.edu.pl