Phonetics in Europe

This volume comprehends articles focusing on phonetic aspects of languages and language varieties spoken in present-day Europe. The standard languages of the largest language families, Germanic, Slavic and Romance, are represented as well as minority languages such as Frisian and Finno-Ugric languages, dialects and regiolects. The methods employed are diverse and often innovative, shedding new lights on phonetics in Europe, both from a perception and production point of view.

The Editors
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Do they speak Warsaw in Kracow:
Realization of the phoneme /n/ before /k/  
Nikolina Sokolić

Abstract
The standard Polish language allows some phonetic variations to be the indicators of Polish regional language identity. Within that context, the Masovian and Lesser region, with the center in Warsaw and Kracow (therefore often called Warsaw and Kracow region), were described in the linguistic literature as particularly interesting because of their divergent phonetic characteristics that divide Poland in two contrasting regions. Nevertheless, during the 20th century, there were only a few investigations into the position of regionalisms in the contemporary Polish language and during that period the standard variety as spoken in Warsaw became the prestigious Polish urban idiom. Some linguists pointed at the disappearance of some regionalisms, but not urgently enough to initiate investigating the position of regionalisms in the contemporary language. The present paper presents a preliminary investigation into the phonetic realization of the phoneme /n/ before /k/ in Kracow. For this purpose field research was carried out among the inhabitants of Kracow. Kracow pronunciation was analyzed and the results were as anticipated: the typical Kracow pronunciation is slowly changing and adapting to the typical Warsaw characteristics. Two social variables, age and gender, also correlated with the pronunciation change.

1. Introduction
The evolution of the standard Polish language has been going on for centuries. All three major dialects have been found to exert their influence: the Greater Polish dialect, representing the Poznań and Gniezno region, the Lesser Polish dialect, representing the Kracow region, and the Masovian dialect representing the Warsaw region (Bartnicka & Satkiewicz 1990). The standard language originally developed on the basis of the Greater Polish dialect (Kuraszkiewicz 1953), cited by Rospond 1971). However, the strongest influence was exerted by the Lesser Polish dialect because Krakow was the capital as well as the cultural and educational center of Poland in the 16th century (Bartnicka & Satkiewicz 1990, Klemensiewicz [1961], cited by Rospond 1971). The Masovian dialect started influencing the standard language in the second half of the 18th century and this influence has lasted until today (Bąk 2007, Swan 2002, Rospond 1971). This formation process was well described by Swan (2002): "The Polish language attained status as a means of accomplished literary expression by individual writers in the 16th century and attained full maturity as a language of education, science, jurisprudence, public debate and other broad
social functions in the 17th-18th century." This resulted in the contemporary Standard Polish language, based mainly on the Warsaw variety of the language.

![Map of Poland with the main urban centres](http://www.cruiserswiki.org/wiki/Poland)

Figure 1: Map of Poland with the main urban centres

1.1 Language varieties in Poland

Contemporary standard Polish is one of the varieties of the language spoken within Poland. This variety is not territorially limited but rather socially defined as it is spoken only by higher educated people (Markowski 2008). Other varieties of the Polish language are constituted by different dialects. Compared to the standard variety, these varieties are territorially as well as socially limited, e.g. they are spoken only by rural people in a specific region (Karasi 2009). Although the standard Polish language is not bound to a particular region, it still allows some regional variation. So within the standard Polish language one may find linguistic characteristics that are typical for specific regions (Karasi 2009, Dubisz, Karasi & Kolis 1995). This means that regionalisms, i.e. features of the regional varieties of the standard language, appear in the language of all residents of the region (also the higher educated), whereas dialecticisms, i.e. features of the dialectal varieties, appear only in the language of the rural people. It is important to underline the fact that the determination of a regionalism is always done from a specific perspective: for the educated Masovian a regionalism would be a phonetic (or morphological, lexical, etc.) feature used by the people from other Polish regions, and vice versa. Regionalisms cannot be hierarchized but only described. They are all part of the standard language and considered correct, yet territorially different (Karpowicz 2008).

1.2 Polish regionalisms

The Polish territory is divided into three main regions according to the regional varieties of the standard language: Poznań (Greater Polish), Krakow (Lesser Polish) and Warsaw (Masovian) region (Nitsch 1914, cited by Karasi 2009). Each region is named after the city which accommodated the intellectual elite and influenced their language. This led to the formation of the standard language with regional characteristics. Regionalisms may relate to all linguistic levels (morphological, lexical, syntactical, etc.), but the most interesting is the phonetic aspect, as it divides the territory of Poland into two parts: north-east and south-west, that is, the Krakow (sometimes called Krakow-Poznań) and Warsaw regions.

The Warsaw and Krakow regions differ with respect to the assimilation and dissimilation of consonants at word boundaries before vowels, semi-vowels and sonant sounds (Karpowicz 2008, Dunaj 1989, Wierczowska 1971, Nitsch 1912). Apart from this phonetic feature, the two regions also differ in the pronunciation of the phoneme /n/ before velar plosives. The latter feature has been the subject of but few investigations in the last three decades and will be dealt with in the present study. So the aim of the present study is to analyse the phonetic realization of the phoneme /n/ before velar plosives.

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2 According to some phonological descriptions, the Polish phonological system includes both the dental nasal sonant /n/ and the velar nasal sonant /ŋ/ (Jassem 2003; Dukiewicz & Sawicka 1995; Wróbel 2001). However, the existence of the phoneme /ŋ/ is rather disputable. /ŋ/ entered the phonological system more or less recently, as a consequence of the deviation from the nasal vowel /ew/ before velar stops, e.g. reka 'hand' /ryɛka/ /rɛŋka/ (Dukiewicz & Sawicka 1995; Wróbel 2001; Bąk 2007) and is not represented in the Polish alphabet. This is an argument why it should not be considered a phoneme (Struziński 2005; Ostaszewska and Tambor 2005). The present investigation is limited to the phoneme /n/ and its realizations. In Polish /n/ can occur as the typical realization,
Generally it can be stated that a regional characteristic of the Krakow speech is the velar nasal [ŋ] in forms such as okienko ‘little window’ or tango ‘tango’, e.g. before velar plosives /k/ and /g/. This contrasts with Warsaw speech, which is characterized by the dental nasal [n] in the same forms (Nagórko 2010). Some studies describe this phenomenon in more detail. In Krakow speech, the phoneme /n/ always tends to be pronounced as the velar nasal sound [ŋ] before velar plosives. However, Warsaw speech is described a bit differently: /n/ is pronounced as [ŋ] before velar plosives only in non-native words and within the morpheme, such as Anglia ‘England’, blondynka ‘woman with the blond hair’, bank ‘bank’, funkcja ‘function’, tango ‘tango’ (…), while in the words where there is a morphological boundary between /n/ and /k/, as well as in native words such as panienka ‘young lady’, Miss’, okienko ‘little window’, firanka ‘curtain’ Danko ‘diminutive of the typical Polish name Danuta’ (…), /n/ is pronounced as the dental nasal sound [n] (Karaś 2009, Swan 2002, Sawicka 2001, Dunaj 1989, Dejna 1973). Since in Polish the /ng/ combination (e.g. phoneme /n/ before voiced velar plosive /g/) appears only in non-native words, we can de facto deduce that Krakow and Warsaw speech regionally differ in the pronunciation of /n/ only before devoiced velar plosive /k/ in native words and on morpheme boundaries, as indicated by the literature (Strutyński 2005). This is shown in Table 1.

<table>
<thead>
<tr>
<th>Warsaw</th>
<th>Krakow</th>
</tr>
</thead>
<tbody>
<tr>
<td>/panienka/ [paˈnjenka]</td>
<td>[paˈnjenka]</td>
</tr>
<tr>
<td>/okienko/ [ɔˈkenko]</td>
<td>[ɔˈkenko]</td>
</tr>
<tr>
<td>/tango/</td>
<td>[ˈtango]</td>
</tr>
<tr>
<td>/funkcja/</td>
<td>[ˈfunktʃa]</td>
</tr>
</tbody>
</table>

Since the purpose of this paper is to investigate the regional differences between Warsaw and Krakow speech, it will deal with the regional variations of the phoneme /n/ before /k/ when there is a morphological boundary between them, in native Polish words.

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2. Research background

According to the literature, the Warsaw regional characteristic should be the dental nasal sonant [n] in forms such as panienka ‘young lady’ and okienko ‘little window’, while the Krakow regional characteristic should be velar [ŋ] in the same forms. This contrastive description can be found in all Polish grammars and language handbooks which deal with differences in the realization of the phoneme /n/ before velar plosives (Nagórko 2010, Karpoń 2009, Karaś 2009, Bąk 2007, Ostaszewska & Tambor 2005, Strutyński 2005, Sawicka 1995, Dejna 1973, etc.).

Somewhat surprisingly, no research on regional differences in the realization of the phoneme /n/ before /k/ was conducted until the eighties. Sikora and Ostachowska (cited by Dunaj 1989) investigated the speech of Zwierzyniec and Bronowice, two Krakow suburbs, and generally noted forms with velar [ŋ]. In 1980, Kurek (cited by Dunaj 1989) was the first one to conduct more extensive research on Krakow speech. Kurek noted both pronunciation types, with only velar [ŋ] or only dental [n], but also the optional pronunciation where there appeared both [ŋ] and [n] forms. This is explained by the possible influence of the dental [n] on primary velar [ŋ] forms and contrariwise. Kurek noticed the correlation of the social variables age, education and social status with the different pronunciations and concluded that most of the [n] forms were used among the younger people and higher educated. After this small study, there have been no further studies on Krakow regional variation of the phoneme /n/ before /k/ in contemporary standard Polish.

Regarding the Warsaw regional variation of the phoneme /n/ before /k/, we can only point out Sawicka’s research conducted in 2001. Sawicka investigated the realization of the grapheme n before velar plosives k and g inside the morpheme, e.g. in non-native Polish words like ring ‘prize ring’, cynk ‘zinc’, bank ‘bank’ or parking ‘parking’. Sawicka concluded that in those forms, as well as in the forms where /nk/ constitutes a morphological boundary, e.g. in native words, both [n] and [ŋ] appear. This is not according to the norm, which prescribes that in forms like those (inside the morpheme and non-native words) /n/ should be pronounced as [ŋ], similarly as in Krakow. These results point to the beginning of the disappearance of the foregoing [ŋ] forms in Warsaw speech and to a dissemination of [n] forms. It seems that the Warsaw regional characteristic started to expand within the Warsaw speech itself.

Considering the changes in Warsaw regional pronunciation, one would expect that there should be some changes in the Krakow speech as
well. In 1973 Żaręba (cited by Karaś 2009) warned about the disappearance of regional characteristics of the Polish language because of the media impact, which propagates regionally Warsaw based Polish simply because the center of media, administration and politics is in the capital of Warsaw. In 1983, Dunaj analyzed the speech of Warsaw radio DJs (cited by Dunaj 1989). He noted a large number of [n] realizations even in the non-native words, e.g. within the morpheme in words such as konkurs 'contest', konkretny 'concrete' (…). He concluded: "Random observations of people from the areas where there is the [nk] pronunciation type seem to indicate that they are not, in this respect, under the impact of Krakow." Based on the previous research of the Krakow regionalism Dunaj also extends his conclusion to say: "The general image, based on the existing observations of the realization of forms such as panienka 'young lady', okienko 'little window' is as follows. Probably under the influence of the pronunciation of the capital, spreading via the radio and television, the expansion of the [nk] pronunciation type is observed. The current situation somewhat resembles the situation of consonantal voicing at word boundaries (…)". Although the obtained data confirmed the use (probably largely unconscious) of the [nk] forms in Krakow, more extensive and more detailed empirical research is required to be able to draw definite conclusions.

Sokolić (2013) conducted a preliminary investigation on Krakow and Warsaw regionalisms regarding the assimilations and dissimilation of consonants at word boundaries and within words before vowels, semi-vowels and sonant sounds. For example, /brat Ali/ 'Ali’s brother'; /brat Joli/ ‘Jola’s brother’; /brat Marka/ ‘Mark’s brother’ should be pronounced as [brad ali]; [brad joli]; [brad marka] in Krakow and as [brat ali]; [brat joli]; [brat marka] in Warsaw speech. The results showed that the Warsaw pronunciation had not changed at all (100% typical devoiced realisations both for the text and the wordlist). However, Krakow speech had changed, showing a high deviation from its typical voiced pronunciation (66% atypical devoiced realisations in the text and 70% in the wordlist). This indicates that this type of phonetic regionalism is slowly disappearing.

Therefore, Warsaw speech can be considered as a prestigious standard urban idiom, which affects the other regional urban idioms. The influence of Warsaw speech on Krakow is even more interesting because of persistent and generally shared opinions among the Poles. Anecdotal evidence suggest that there exists some sort of antagonism between Krakow and Warsaw, which is most overtly expressed in Krakow3. Therefore, the possibility that the Warsaw urban idiom has become the prestigious variety for Krakovians is quite engaging.

Based on the above facts, we decided to investigate whether the Krakow pronunciation still tends to change its realisation of the phoneme /n/ before /k/. We will also try to come up with possible explanations.

3. Research questions

We investigated the pronunciation of the phoneme /n/ before /k/ in Krakow speech. We wanted to assess whether it has changed over the last three decades and provide an update of the phonetic characteristics of regional standard Polish. Apart from the typically Krakow [n] realizations, we expected a large number of [n] realizations, which is typical for the Warsaw regionalism.

Besides the main research question, the aim was to investigate whether age and gender correlate with the pronunciation of /n/. It is hypothesised that the younger speakers will deviate more from the typical Krakow pronunciation than the older speakers, while women, compared to men, will be closer to the typical Warsaw pronunciation.

4. Method

4.1 Participants

Altogether 35 speakers were tested. To make sure that the subjects are a representative group of true Krakovians, a questionnaire was completed by every participant. In addition to the general information such as place of birth, age and sex, participants were asked to indicate how long they had been living in Krakow and to list any other residence, if different from Krakow. On the basis of the responses, no participants were excluded. All subjects were born and raised in Krakow and therefore formed a group of true Krakovians.

The participants were students and professors (all non-linguists) from the Jagiellonian University, so they can be considered to be part of the Krakow region.

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3 Krakow was the capital of Poland from 1038 to 1569. Traditionally, it has been one of the leading centers of Polish academic, cultural, and artistic life and it has been one of Poland’s most important economic hubs. Since then, Warsaw has taken over the role which Krakow used to have and it became the first city in the country, with Krakow now coming in second place.
urban Kracow intelligence. There were two age groups. The younger group consisted of 19 students aged 20 to 26 (mean = 23.37), while 16 professors formed the older group aged 33 to 70 (mean = 54.31). There were 24 women and 11 men, forming two gender groups.

4.2 Test material
The test material consisted of a text including six words with the /nk/ phoneme combination. Four words were native Polish words, while two words were non-native words, namely one foreign word and one well-adopted borrowing, chosen randomly. The test items can be found in Table 2.

<table>
<thead>
<tr>
<th>Word</th>
<th>Type</th>
<th>English translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>panięka</td>
<td>native word</td>
<td>'young lady; Miss'</td>
</tr>
<tr>
<td>blondynka</td>
<td>borrowing</td>
<td>'woman with blond hair'</td>
</tr>
<tr>
<td>lazanki</td>
<td>native word</td>
<td>'traditional Polish food; type of pastry'</td>
</tr>
<tr>
<td>onkolog</td>
<td>foreign word</td>
<td>'oncologist'</td>
</tr>
<tr>
<td>łazienka</td>
<td>native word</td>
<td>'bathroom'</td>
</tr>
<tr>
<td>Danka</td>
<td>native word</td>
<td>'diminutive of the typical Polish name Danuta'</td>
</tr>
</tbody>
</table>

Even though the regionalism at hand should only affect the native words, two non-native words were nevertheless included in the testing material in order to track possible pronunciation modification of non-native words along with the native ones, and perhaps, depending on the results, to actuate new research. Every participant was asked to read the text as spontaneously as possible. After reading the text, participants had to read the test words in isolation. We wanted to assess whether the difference in style would lead to a difference in pronunciation.

The recordings of the text and word list were analysed auditorily by a phonetician with expert knowledge of the Polish language. If the phoneme /n/ before /k/ was pronounced as [ŋ], which is typical for Krakow, it was marked as o, without any change in pronunciation. On the other hand, if /n/ was pronounced as [n], which is atypical for Krakow, but typical for Warsaw, there was a change in pronunciation, which was marked as i. The obtained frequencies were statistically analysed with Microsoft Office Excel.

5. Results and discussion
5.1 General picture
The obtained results confirmed the general hypothesis: Krakow has moved away from its typical pronunciation, e.g. the velar realization of the phoneme /n/ before /k/ (see Figure 2).

Figure 2: Mean percentages of [n] realizations in the text and word list

The mean percentage of 36% [n] realizations in the text shows us that Krakow speech has diverged from the traditional [ŋ] realisation of the phoneme /n/ before /k/. In about one third of the cases it has been replaced by [n]. However, based on the considerable reduction of the typical Krakow assimilation/dissimilation regionalism attested by Sokolic (2013) we had expected a stronger reduction of the Krakow /n/ before /k/ regionalism as well during the last three decades. Only two participants (6%) had a 100% [n] pronunciation. Somewhat more (26%) had a 100% [ŋ] pronunciation, while most had a variable pronunciation with both [n] and [ŋ] realizations (74%) (see Figure 3).
5.2 Age differences

There were two subgroups of participants. The younger group was aged 20 to 26 and consisted of 19 speakers. The older group was aged 33 to 70 and consisted of 16 speakers. We found an age-related difference in the pronunciation of /n/ before /k/ (see Figure 4) but it did not confirm our hypothesis. In contrast to what we expected, the pronunciation of the older group deviated more from the traditional Krakow norm (50% [n] pronunciation for the text; 71% for the word list) than the younger group (24% [n] pronunciation for the text; 40% for the word list). Two chi square tests revealed the difference between young and old to be significant, both for the text ($\chi^2(1, N = 210) = 15.719, p < .001$) and for the word list ($\chi^2(1, N = 210) = 19.513, p < .001$).

In Figure 5 the distribution of [nk], [nk] and [nk]/[nk] pronunciations is shown, separately for the text and the word list. It can be seen that 100% [nk] speakers can mainly be found in the older group, whereas 100% [nk] speakers mainly occur in the younger group. This is not what we had expected. We had expected the younger speakers to introduce a change away from the traditional norm. How can this unexpected result be explained?
A possible explanation can be found in the fact that older speakers have been exposed for a longer period to the influence of the typical Warsaw [nk] pronunciation, affecting their own pronunciation and altering it. It is also possible that there is a kind of 'snobism' among the younger generation. The higher educated part of the younger population, whose pronunciation was analyzed in this research, might want to dissociate themselves from the uneducated part by using the pronunciation forms described in the literature as typically Krakow. Therefore, it might be interesting to investigate the language awareness of the younger generation, taking into account its language sensitivity. In future research, social status should also be included as an additional and relevant variable.

5.3 Gender differences

Our hypothesis that women would lead the change towards the Warsaw [n] pronunciation was confirmed. On average the women dropped their typical Krakow pronunciation in 41% of the cases for the text and in 61% of the cases for the word list, while men changed their pronunciation in 24% and 39% of the cases, respectively (see Figure 6). This difference was significant, both for the text ($\chi^2(1, N = 210) = 5.517, p < .05$) and for the word list ($\chi^2(1, N = 10) = 8.601, p < .01$).

The distribution of the pronunciation types is shown in Figure 7. It is clear that there are many more men using the traditional [ŋk] realisation for all words than there are women (45% against 8% for the text and 36% against 0% for the word list). In general, the female speakers are more likely to deviate from the typical Krakow pronunciation than the male speakers. Two previous researches on the Krakow regionalism regarding assimilations/dissimilation yielded the same results. Women were found to be more likely to change their pronunciation (Sokolić 2013, Horwath 1984). However, Kurek's research in the early eighties (cited by Dunaj
1989) did not include different age groups, so it is difficult to compare her results with ours.

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**Figure 7:** Distribution of the realization types for the text and word list, separately for male and female speakers

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Much research in sociolinguistics on gender differences in language use has confirmed that women are more likely to initiate and follow novel trends in language use (Wang & Ladegaard 2008, Gordon 1997, Abu-Haidar 1989, Trudgill 1972). Studies in Great Britain, Australia, New Zealand, Africa and China have led to the conclusion that women more than men tend to use the language forms that are considered to be ‘correct’ and characteristic for the idiom of the largest and prestigious urban centers. According to Trudgill (2000) women would be more willing to accept those forms because they believe that they will ensure them a better and equal position in society.

Whatever the reason, women across many cultures seem more likely than men to modify their speech towards the prestigious features. The results of our small-scale investigation reconfirmed this sociolinguistic phenomenon.

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5.4 Word differences

The test material consisted of six words with the /nk/ phoneme combination, selected randomly. Two were non-native words (one foreign word and one well-adopted borrowing), while the other four were native Polish words. There were some differences in the realization of the various words and they were significant for the text ($\chi^2 (5, N = 210) = 21.591, p < .001$), but not for the word list ($\chi^2(5, N = 210) = 7.368, p = .195$). The pronunciations of the six words are shown in Figure 8.

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**Figure 8:** Mean percentages of the [n] realizations in the text and word list, separately for the six words

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It seems that the pronunciation of two words was changed less than average, namely *panienka* (20% [n]) and *lazienka* (17%). In both items, /n/ is preceded by the vowel /e/. This /VN/ combination suggests the nasal vowel phoneme /ɛn/, where a change in pronunciation would have led to the appearance of the phoneme /ŋ/ (Dukiewicz & Sawicka 1995). This may be the reason why those two words have mostly kept the typical Krakow realization. The pronunciation of *Danka, blondynka* and *onkolog* changed the most. The high percentage of changed pronunciations of the words *blondynka* and *onkolog*, both non-native words, is unexpected because the literature suggests [ŋk] realizations for those types of words, even in Warsaw. In general, it appears that the non-native words in our study have changed more than the native words (Figure 9). The difference is significant ($\chi^2(1, N = 210) = 11.293, p < .001$ for the text; $\chi^2(1, N = 210) = 5.526, p = .019$ for the word list). Contrary to what the literature suggests, the empirical research conducted in Warsaw (Sawicka 2001) regarding the same regionalism, showed that the typical Warsaw pronunciation has been spreading among the non-native words as well. The results of our investigation suggest that Krakow started following the innovative Warsaw trend.
the style continuum should be broadened to the more informal end, focussing on spontaneous speech.

Bibliography


Sokolić


