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SOCIOLINGUISTIC FACTORS  
INFLUENCING THE PERCEPTION  
OF NON-NATIVE SPEECH

1. INTRODUCTION

The past five decades have witnessed a dynamic growth of empirical studies on the perception of foreign-accented English, which shows how socially and linguistically important and interesting this issue is considered. Since foreign accent leads to usually negative evaluations of non-native speakers, it affects an individual's life in multiple ways. This is reflected in the emergence of a new term, *linguistic profiling*, which refers to the cases of employers or landlords using their interlocutors' accent as a criterion for estimating broadly understood suitability and competence (Moyer, 2013:6). In the most extreme cases the users of a given foreign accent can be marginalized and excluded from full participation in the dynamics of the mainstream society.

Since perceptual studies provide a better understanding of the nature of foreign accent as well as its causes and implications, they can enhance communication between native and non-native speakers of English and help immigrants to combat discrimination. The majority of research on foreign-accented speech has been carried out in the countries which have a large number of

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immigrants, such as the United States, Canada and Australia. In the situation when there are nearly 580 000<sup>1</sup> Polish emigrants on the British Isles the perception of Polish-accented English by their native inhabitants has become an important issue which influences Poles' functioning in the target society and therefore deserves examination.

Although several studies have dealt with the perception of Polish English by native speakers (Majer, 2002; Scheuer, 2003; Gonet & Pietroń, 2004; Szpyra-Kozłowska, 2005, 2013; Nowacka, 2008), they were limited in scope in terms of the number of participants and selected aspects of foreign accent evaluation, primarily those related to the speaker. None of them explored the effect of sociolinguistic factors on the perception of English spoken with a Polish accent. The present study undertakes to fill the lacuna in the existing literature.

The paper presents empirical data on the perception of Polish-accented speech by 78 English native speakers. The experiment elicits listeners' reactions towards two samples of Polish-accented English with respect to perceived foreign-accentedness and irritation they evoke. The main aim of the study is to explore to what extent informants' evaluative judgements are conditioned by non-linguistic factors such as age, gender, familiarity with Polish-accented English and the frequency of interaction with Poles. We also explore the mutual relationship between accentuatedness and irritation because the existing literature abounds in contradictory statements; some researchers claim the two variables are mutually correlated (Scheuer, 2008) and others associate irritation with unintelligibility rather than foreign accent itself (Ludwig, 1982). Gynan (1985) also observes that even fully intelligible non-native speech evokes annoyance in listeners, which implies that irritation might depend as much on the listener as on the speaker.

## 2. PREVIOUS RESEARCH

There exists little empirical data regarding the relationship between native listeners' gender and accent assessment. Podberesky, Deluty and Feldstein (1990) investigated attitudes of 134 American native speakers to Spanish- and Asian-accented English. It turned out that male respondents reacted significantly more favourably than women and assigned higher scores on compe-

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<sup>1</sup> The Census from 2011 reports 579 121 Polish residents in the UK.

tence, personal integrity and social attractiveness to the stimulus providers. This outcome was confirmed in Schaier's (1992) study, in which female judges were found stricter than their male counterparts when rating accented speech for comprehensibility. Similar observations were made by van den Doel's (2006) experiment where sex variable constituted an important factor in native speakers' evaluations. Even though women detected fewer errors than men, they assessed them more harshly.

The research conducted by Sato (1998) yielded strikingly different results. Female judges evaluated non-native speakers on a wide range of character traits more positively than male raters. An extensive investigation by Ben Said (2006) asked 71 participants to rate eight different accents on a Likert scale with five bipolar adjectives referring to the way of speaking. Women also emerged as less rigid assessors than their male counterparts. As can be seen, in the existing literature there is no agreement as to the gender factor.

The impact of raters' age on their perception of foreign-accented speech has hardly been researched either. Van den Doel (2006) informs that younger respondents reported more errors with an increased severity when compared to their older counterparts. In the Nikolov's (2000) experiment children considered the lack of fluency, false starts, paraphrasing and hesitation as the most important indicators of non-native speakers, whereas adult judges focused more on the content. This sensitivity to the form exhibited by the younger judges would confirm the claim that children are less tolerant of deviances in non-native speech perhaps due to their lesser experience with diversified accents (Ryan, 1983).

Even scarcer data are available with regard to the effect of the listener's level of education on the perception of foreign-accented speech. For the sake of convenience the preponderance of studies recruited students or teachers from the same or parallel educational institutions. For example, native raters employed by Munro and Derwing (1995, 2001) were students of linguistics or education courses at the University of Alberta, Tajima, Port and Dalby (1997) focused on students from Indiana University and Flege (1988) relied on students or staff members at the University of Alabama. The tool of web-based surveys has opened a new realm of possibilities and recruiting participants from *all walks of life* have become much easier. Yet, in online research conducted so far education has not been examined as one of the possible variables affecting the listeners' choices. The only explicit (far from definitive, though) statement is that of Sato (1998:94) who, having compared the evaluative judgements of high school and university students, suggested that *the more*

*education one receives, the more tolerance with diversity one may develop.* We intend to verify this claim against the experimental results.

Previous studies report both positive and negative effects of familiarity with non-native accent. Experience with a given type of speech may lead to the listener's greater awareness of specific errors and result in harsher judgments on an accent scale (Munro & Derwing, 1994; Scheuer, 2008). On the other hand, ample exposure to non-native English usually acts to listeners' advantage and enhances their ability to understand an utterance accurately and effortlessly (Brodkey, 1972; Fayer & Krasinski, 1987; Lindemann 2010). Yet, in some studies frequent contact with accented English has been found to have no effect on perceived understanding of non-native speech (Fraser & Kelly, 2012). The researchers unanimously agree that a positive attitude towards foreign accent and willingness to understand the speaker increases along familiarity with accented English. Exposure to non-native speech and training in the perception of foreign accents are usually beneficial to the listener (Sato, 1998; Derwing, Munro and Rossiter, 2002).

### 3. METHOD AND PROCEDURE

The data were collected between June 2010 and November 2011 in Glasgow, Leicester and Dublin. The listeners were exposed to two samples of Polish-accented English provided by two female Poles (Speaker 1, hence S1, aged 24 and Speaker 2, hence S2, aged 33) who differ with respect to their level of English proficiency (intermediate vs. upper-intermediate), which is reflected in their phonetic performance. While the speech of both is marked with Polish accent, it is much stronger in the case of S1 (heavily foreign) than S2 (moderately foreign). The respondents are asked two questions: *How foreign does the speaker sound to you?* and *How annoying does the speaker sound to you?* In order to answer them, they need to circle a number on a scale ranging from 1 to 5.

The present study encompasses two types of data, vis. quantitative and qualitative. The participants fill in surveys and make judgments and comments regarding the speakers' pronunciation in open-ended questions. Since the data are not in normal distribution we rely on non-parametric (distribution-free) statistics. The Gamma test is used to establish the existence of correlations. The inter-group comparison is performed by means of the Kruskal-Wallis analysis of variance and the Mann-Whitney test (in a pairwise comparison).

Kendall's coefficient is calculated to determine the degree of consistency between the raters (inter-rater reliability).

#### 4. PARTICIPANTS

The study employs 78 judges who are native speakers of English representing in equal proportions three nationalities, i.e. the English, the Irish and the Scottish. There are 48 women and 10 men among them. Their age span is between 20-50, with 51% aged 20-35.

With regard to educational background, 66.6% of the listeners report having a university / college degree. The rest of them are either in the process of getting one (9%) or finished their education at a secondary level (24.4%). It can be stated that the participants are well-educated individuals working in different white-collar professions (only two perform a manual job).

The fact that all native judges participated in the study in their countries of origin constitutes an asset of the experiment. It guaranteed their lesser experience with Polish-accented English than that of native speakers residing in Poland who, more often than not, work as English teachers. Yet, few respondents (16.6%) are totally unfamiliar with Polish-accented English. The United Kingdom has large Polish communities widely distributed throughout the country. The cities where the experiment was conducted, Leicester, Glasgow and Dublin, are perfect examples of this. It is hard to encounter English native speakers who have not been exposed to the speech of such a considerable group of immigrants. A vast majority of the listeners report having talked to many (34.6%) or a few (48.7%) Polish people.

#### 5. INSTRUMENTS

The diagnostic material employed in the present study is a text (148 words, Appendix 1) read out by two Poles. The pronunciation of S1 and S2 are marked with both segmental and suprasegmental inaccuracies typical of Polish-accented English. S1's phonetic deficiencies are extensive and encompass vowel and consonant substitutions, numerous spelling-induced errors and frequently misplaced word-stress. S2, on the other hand, is phonetically more competent and realizes some English sounds correctly (e.g. the palato-alveolars and the high front vowels), has fewer mispronunciations rooted in spelling

interference (*doubt* /daupt/, *abroad* /abrowd/ and shifted word-stress only twice ('*develop*, *com'fortable*).

Both speakers have problems with vowel reduction (e.g. *dormitory* /dormitory/, *important* /important/) maintaining final lenis obstruents voiced (e.g. *bed* /bet/) and with aspiration of stressed /p, t, k/. Importantly, S2 sometimes manages to observe these features, whereas S1 fails on all occasions. Both speakers' production is marked with incorrect prosody. Neither of them uses weak forms in connected speech (e.g. *all of his time* /ol of his tajm/, *in front of the computer* /in front of de kompjuter/.

The main and most perceptually salient difference between S1 and S2's pronunciation in English is fluency and the tempo of speech. S2 is more fluent and her speech has fewer hesitant pauses, fillers and only one self-correction. As a result, she completed the reading task 24 seconds earlier than S1.

The stimulus was selected from a pool of ten speech samples by subjective evaluations of the present author and four other phonetically trained Polish teachers of English who classified the speakers' accents as heavily and moderately foreign. A 5-point Likert scale has been adopted as is frequently the case in similar research (e.g. Munro, Flege & MacKay 1996; Thompson, 1991; Gonet & Pietroń, 2004). The scale is accompanied with descriptive equivalents so that the listeners know what each number stands for.

The answer sheet is supplemented with a short questionnaire whose aim is to supply relevant background information about the evaluators. The whole survey is enclosed in Appendix 2.

## 6. RESULTS AND DISCUSSION

The table below presents the mean ratings, frequency scores, standard deviation, minimum and maximum values of perceived accentedness and annoyance for S1 and S2.

	accentedness Speaker 1	accentedness Speaker 2	annoyance Speaker 1	annoyance Speaker 2
Mean	1.5	2.5	3.1	3.6
Mode	1.0	3.0	3.0	4.0
$\Sigma$	.67	.85	.70	.60
Min.	1.00	1.00	2.00	2.00
Max.	3.00	4.00	4.00	5.00

Table 1. Mean, median, mode, minimum, maximum and standard deviation for S1 and S2.

According to the mean value and the mode, S1's speech is regarded as considerably more foreign than S2's. Mean values are 1.5 and 2.5, respectively. The mode for S1 is at 1 (*heavily foreign*) and for S2 at 3 (*slightly foreign*). The minimum and maximum values, referring to the most foreign and the most native-like accent, range from 1 to 3 for S1. The listeners used a wider scale of between 1 and 4 to rate the degree of foreign accent in S2's speech. S1's pronunciation is viewed more annoying than that of S2,  $m = 3.1$  and  $3.6$ , respectively. As can be observed, the difference between mean ratings in annoyance assessment for the two speakers is smaller than in the case of accentedness. Yet, the most frequent rates differ substantially: the mode for S1 is 3 (*a bit annoying*) and 4 (*pleasant to listen to*) for S2. When estimating the degree of annoyance, the listeners used the scale from 2 to 4 S1 and from 2 to 5 for S2.

As mentioned in section 5, S1's pronunciation was considered more foreign than S2 by four phonetically trained Poles who assisted in the selection of speech samples used in the present experiment. The evaluations of the listeners generally coincide with those of Polish raters: both native and non-native English speakers agree that the degree of foreign accent is bigger in S1's speech than that of S2. Since the main difference between the two speakers' pronunciation consisted in fluency and the rate of speech, we can conclude that these factors seem significant markers of accentedness, which echoes the findings of previous research (Munro and Derwing, 2001; Yuan, Jiang & Song, 2010).

The Kendall's  $W$  coefficient of concordance was higher for accentedness ( $W = 0.7$ ) than annoyance ( $W = 0.41$ ), which means that there was a greater degree of unanimity in rating S1's pronunciation less favourably for the degree of foreign accent than irritation it caused in the listeners. It can be concluded that the judges must have applied more similar criteria while assessing accentedness (there were fewer inter-rater differences) than when evaluating the aesthetic aspect of S1's and S2's speech.

The judges turned out considerably unanimous with respect to their global foreign accent ratings, which proves that native listeners can be used to measure reliably the degree of foreign accent (Gass & Varonis 1982; Thompson, 1991; Piske, MacKay & Flege, 2001). An extensive spread of scores while estimating annoyance confirmed the view that irritation is a highly subjective parameter and its perception varies across individuals even within the same speech community (Ludwig, 1982; Fraser & Kelly, 2012).

The investigation of the relationship between accentedness and irritability ratings revealed no correlation between the two variables (for S1  $G = 0.09$ ,  $p = 0.5$  and for S2  $G = 0.2$ ,  $p = 0.18$ ). These findings suggest that foreign accent and the listeners' annoyance are not linearly related, which undermines claims made previously (Scheuer's, 2008).

The listeners' voluntary comments revealed that irritation tends to be associated with unintelligibility (lack of understanding) and incomprehensibility (effort put into comprehending). Several English raters questioned the applicability of the term *annoying* in the survey and suggested using the word *difficult* instead, e.g. *annoying is too subjective, difficult would be a better category* (Eng14). One listener consistently crossed out the label *annoying* used for both speakers and replaced it with *difficult (?)*. A few of the Scottish judges supplied comments which indicate that foreign accent is not disturbing as long as it does not interfere with intelligibility: *I wouldn't say that this accent is annoying, it's difficult to understand at times, though; It's annoying only if it causes misunderstanding; moderately annoying – because I didn't understand many words, even though I understood globally*. This finding suggests that the native listeners do not equate foreign accent with irritation and in their perception incomprehensible (difficult to understand) and annoying are separate categories. It is also worth noting that some of the judges manifested their reluctance to use the term *annoying* and explained it produces *overemphasis of negative* (Eng 24).

Our data suggest that irritability cannot be reliably predicted by the intensity of foreign accent. In line with previous studies (Cunningham-Andersson, 1997), annoyance evoked in the listeners appears to be influenced by certain non-linguistic factors, such as the overall attitude towards the speaker. The Scottish judges employed in the present experiment enclosed the following comments: *Mostly, I find the Polish accent endearing, I admire any foreigner who takes the time, trouble and effort to learn English because I believe it must be a very difficult language to learn to a non-native speaker. Also, I believe that few British people can be bothered to learn any other language through a combination of arrogance and laziness!* Such opinions imply that the Polish are perceived as modest and hard-working enough to try to master a foreign language. It can be concluded that the judges generally have a positive attitude towards Poles, which inevitably had bearing on their evaluations. As Scheuer (2008:115) puts it, *what is irritable is thus hugely dependent on who says it and to whom*.



In the sections below we investigate the influence of sociolinguistic factors (gender, age, education and familiarity with accented speech) on the informants' decisions.

6.1. GENDER EFFECTS

The frequency of scores within males and females was calculated to see whether the listeners' gender had any effect on their evaluative judgements concerning accentedness and irritation. Table 2. shows the distribution of rates for accentedness depending on the listeners' sex.

			accentedness S1 and S2								TOTAL
			heavily foreign		moderately foreign		slightly foreign		close to native		
			S1	S2	S1	S2	S1	S2	S1	S2	
sex	F	% within sex	47.1%	9.8%	41.2%	31.4%	11.8%	49%		9.8%	100%
	M	% within sex	66.7%	7.4%	25.9%	37.0%	7.4%	37%		18.5%	100%
Total		% within sex	53.8%	9.0%	35.9%	33.3%	10.3%	44.9%		12.8%	100%

Table 2. Cross tabulation of the listeners' sex and accentedness rates for S1.

The main similarity between the two sex groups is their bigger strictness when assessing S1 than S2 on both parametres. On the whole, females were somewhat more lenient than males in the evaluation of the degree of foreign accent in S1. Table 2. shows that 47.1% of women assigned the lowest score as compared to 66.7% of men. The opposite was the case for the highest rate which was chosen by more females than males (11.8% vs. 7.4%, respectively). However, women turned out stricter in their accent ratings given to S2. While the most frequent score is the same for both genders (*slightly foreign*), fewer males employed the lowest grade (7.4% vs. 9.8%) and assigned the highest rate more willingly than women (18.5% vs. 9.8%).

Table 3. presents the distribution of annoyance scores for S1 and S2 within males and females.

			annoyance S1 and S2								TOTAL
			moderately annoying		a bit annoying		pleasant to listen to		not at all annoying		
			S1	S2	S1	S2	S1	S2	S1	S2	
sex	F	% within sex	23.5%	6.9%	43.1%	21.6%	33.3%	66.7%		4.9%	100%
	M	% within sex	11.1%	3.7%	44.4%	14.8%	44.4%	77.8%		3.7%	100 %
Total		% within sex	19.2%	6.1%	43.6%	19.2%	37.2%	70.5%		4.1%	100 %

Table 3. Cross tabulation of the listeners' sex and annoyance rates for S1.

The data presented in Table 3. suggest that male judges were more lenient than women in rating the amount of irritation caused by S1's pronunciation. The most frequent score given by both sexes was *a bit annoying*, but it must be noted that in the case of men there existed two modes and the other one was higher – *pleasant to listen to*. Moreover, the lowest score was selected by twice as many women as men (23.5% vs. 11%). In Table 3. it can be seen that in the evaluation of S2 for annoyance men also tended to be less strict than women. Despite the fact that both groups accumulated the biggest number of rates at *pleasant to listen to*, females assigned lower scores more frequently than men (*moderately annoying* – 6.9% vs. 3.7%; *a bit annoying* – 21.6% vs. 14.8%).

The data point to the general tendency of male judges to assign slightly higher scores than women. Female raters manifested more leniency only when estimating the degree of accentedness in S1's pronunciation. The opposite was the case with S2's speech marked with a lighter foreign accent which was evaluated more harshly by women. Men appear more tolerant of Polish English with respect to irritation they experience on being exposed to speech samples of the two speakers.

The Mann-Whitney test was applied to determine whether the existing differences are statistically significant. Since  $p > 0.05$  (in accentedness  $p = 0.1$  for S1 and  $p = 0.7$  for S2; in annoyance  $p = 0.1$ . for S1 and  $p = 0.5$  for S2), the null hypothesis cannot be rejected. As a result, the observed disparities cannot be spread onto the whole population. This outcome does not confirm earlier findings which reported gender effects on the perception of accented English (Podberesky et al., 1990; van den Doel, 2006; Schaier, 1992; Sato, 1998; Ben Said, 2006). In the light of our data the evaluation of Polish English remains constant irrespective of the judges' sex.

6.2. AGE EFFECTS

The judgments on accentedness and irritation do not differ depending on the listeners' age. The range of scale employed, the distribution of rates and the most frequent scores for S1 and S2 overlap in the two age groups into which the listeners were divided (18-35; more than 35)<sup>2</sup>. Both younger and older evaluators perceived S2's speech as less foreign-accented and less irritating than that of S1. Yet, it can be observed that the older judges were slightly more lenient than the younger raters in their evaluations of S2 for accentedness and S1 and S2 for irritation. On the other hand, the group aged 18-35 assigned a bit higher scores to S1 on accentedness. These disparities are fairly small, though, which can be viewed in Table 4. presenting the data of the participants.

Age		accentedness S1 and S2								TOTAL
		heavily foreign		moderately foreign		slightly foreign		close to native		
		S1	S2	S1	S2	S1	S2	S1	S2	
8-35	% within age	52.3 %	9.1%	36.4%	34.1%	11.4%	47.7%		9.1%	100%
more than 35	% within age	55.9%	8.8%	35.3%	32.4%	8.8%	41.2%		17.6%	100 %
Total	% within age	53.8%	9.0%	35.9%	33.3%	10.3%	44.9%		12.8%	100%

Table 4. Cross tabulation of the listeners' age and accentednes scores.

Table 4. shows that accentedness scores for S1 were slightly higher within the age group of 20-35 than in the group over 35. Fewer younger than older listeners considered S1's pronunciation *heavily foreign* (52.3% vs. 55.9%) and the opposite was the case for the highest rate *slightly foreign* which was assigned more frequently by younger assessors than by those over 35 (11.4% vs. 8.8%). While estimating the degree of foreign accent in S2's pronunciation older evaluators showed a little bit more leniency than their younger co-judges, which is manifested by fewer lowest grades (8.8% vs. 9.1%) and almost twice as many highest scores (17.6% vs. 9.1%).

The two age groups evaluated S1 and S2 on annoyance in a similar way with respect to the scale range and the frequency of scores. While the exis-

<sup>2</sup> Age 35 was set as the borderline between the young and the middle-aged respondents.

tence of the differences in annoyance evaluation for the two age groups cannot be denied, they are fairly small, which can be observed in Table 5.

Age		annoyance S1 and S2								TOTAL
		moderately annoying		a bit annoying		pleasant to listen to		not at all annoying		
		S1	S2	S1	S2	S1	S2	S1	S2	
18-35	% within age	20.5%	4.5%	45.5%	22.7%	34.1%	70.5%		2.3%	100%
more than 35	% within age	17.6%	5.9%	41.2%	14.7%	41.2%	70.6%		8.8%	100%
Total	% within age	19.2%	5.1%	43.6%	19.2%	37.2%	70.5%		5.1%	

Table 5. Cross tabulation of the listeners' age and annoyance scores.

The judges aged 18-35 were somewhat harsher in their evaluations and reported a bigger degree of irritation evoked by the two speech samples. The lowest score was assigned to S1 with more frequency by the younger group than by the older one (20.5% vs. 17.6%), unlike the highest which was used by 41.2% of the participants aged 35+ and 34.1% of those under 35. It should be noted that the most frequent rate for S1 assigned by both age groups is *moderately annoying*, but within the older judges there are two modes and one of them is higher – *slightly annoying*. S2 received slightly more *not at all annoying* scores from the older judges than from the younger ones (8.8% vs. 2.3%) and the rest of grades is spread in a fairly similar way between the two age groups.

The Mann-Whitney test revealed that the slight differences described above are not of statistical significance (for S1  $p = 0.7$  and  $p = 0.5$  and for S2  $p = 0.5$  and  $p = 0.3 > \alpha = 0.05$ ). This evidence suggests that the age of the listeners does not exert a significant influence on their evaluative judgments concerning the degree of a foreign accent and irritability, which is incongruent with van den Doel's finding (2006), where younger respondents were, on the whole, stricter than their older counterparts.

### 6.3. EDUCATION EFFECTS

Table 6. juxtaposes the distribution of accentedness scores for S1 and S2 within the three groups the listeners were divided into on the basis of their level of education.

education		accentedness S1 and S2								TOTAL
		heavily foreign		moderately foreign		slightly foreign		close to native		
		S1	S2	S1	S2	S1	S2	S1	S2	
higher	% within education	45.1%	7.8%	43.1%	29.4%	11.8%	51%		11.8%	100%
student	% within education	44.4%	0%	44.4%	55.6%	11.1%	11.1%		33.3%	100%
secondary	% within education	83.3%	26.7%	11.1%	23.3%	5.6%	44.4%		5.6%	100%
Total	% within education	53.8%	9%	35.9%	33.3%	10.3%	44.9%		12.8%	100%

Table 6. Cross tabulation of the listeners' education and accentedness scores.

Table 6. shows that college / university graduates and students rated S1 in an almost identical way (approx. 45% of them considered S1 *heavily foreign*; 44% –*moderately foreign* and 11% – *slightly foreign*). The participants with the lowest level of education were consistently harsher in evaluating S1 than the remaining two groups (*heavily foreign* was assigned by 83.3%; *moderately foreign* by 11.1% and *slightly foreign* by 5.6%). According to the Kruskal-Wallis analysis of variance the observed differences in strictness are statistically significant ( $p = 0.028 < 0.05$ ). Moreover, the Gamma test of correlation revealed a relationship of medium strength between the listeners' level of education and their evaluation of accentedness for S1 ( $G = -0.45$ ;  $p = 0.014$ ).

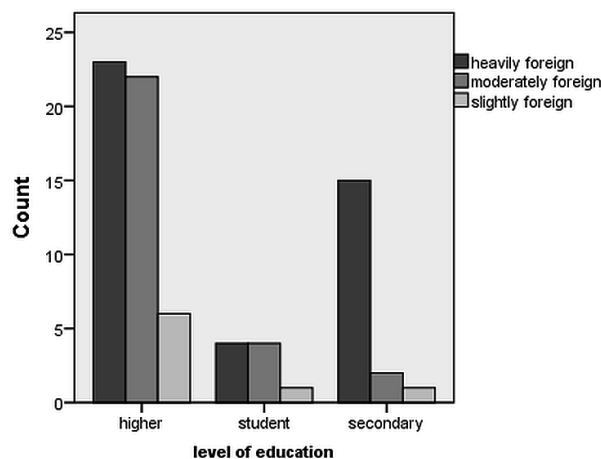


Figure 1. Cross tabulation of the listeners' level of education and their evaluation of accent-edness for S1.

Fig.1. demonstrates that the lower the level of education, the lower the scores assigned by the respondents. The listeners with higher education and students distributed their scores for S1 (almost) evenly between *heavily foreign* and *moderately foreign*, unlike the less educated participants, who had a strong tendency towards the *heavily foreign* category.

When evaluating S2 for accentedness the listeners also behaved differently depending on their educational background. The harshest rates were assigned by the least educated listeners and they differed from those given by the graduates even though both used the scale of the same range (*heavily foreign* – 26.7%; vs. 7.8%; *moderately foreign* – 29.4% vs. 33.3%; *slightly foreign* – 44% vs. 51%; and *close to native* – 5.6% vs. 11.8%, respectively). Students appear to be the most lenient since none of them employed the lowest option and as many as 33.3% assigned the highest rate. The Kruskal-Wallis analysis of variance revealed that the differences in evaluations are statistically significant ( $p = 0.04 < 0.05$ ).

Annoyance scores for S1 and S2 were distributed differently in each group, which can be seen in Table 7.

education		annoyance S1 and S2								Total
		moderately annoying		a bit annoying		pleasant to listen to		not at all annoying		
		S1	S2	S1	S2	S1	S2	S1	S2	
higher	% within education	23.5%	3.9%	37.3%	17.6%	39.2%	74.5%		3.9%	100%
student	% within education	11.1%	0.0%	77.8%	33.3%	11.1%	66.7%		0.0%	100%
secondary	% within education	11.1%	11.1%	44.4%	16.7%	44.4%	61.1%		11.1%	100%
Total	% within education	19.2%	5.1%	43.6%	19.2%	37.2%	70.5%		5.1%	100%

Table 7. demonstrates that the most frequent rate graduates gave to S1 was *pleasant to listen to* (39.2%), for students the mode was set at *moderately annoying* (77.8%), whereas the least educated listeners assigned the same number of scores to each of the two options (44.4%). The latter seem to be the most lenient judges as well.

In the assessment of S2 for annoyance the most and the least educated judges behaved alike with respect to the range of scale employed (2-5) as well as the number of rates ascribed to each of the extreme categories, i.e. S2 was considered *moderately foreign* and *not at all annoying* by 3.9% of graduates

and by 11.1% of secondary participants. Students used a narrow scale ranging from 2-3. Despite these disparities, the three groups ascribed the largest number of scores to the same option, i.e. *pleasant to listen to* and their modes were relatively close (74.5% vs. 66.7% vs. 61.1%).

The Kruskal-Wallis test revealed that there are no statistically significant differences in the evaluation of S1 and S2 with respect to annoyance depending on the listeners' level of education ( $p = 0.4$  and  $p = 0.7$ , respectively).

The obtained results regarding the impact of listeners' age on accentedness judgements are partly consistent with those of Sato (1998), namely the least educated listeners are the harshest raters. Yet, the level of education has no bearing on the degree of irritation evoked in the evaluators.

#### 6.4. FAMILIARITY EFFECTS

Familiarity with Polish-accented English was found to be related to the evaluation of accentedness of the more accented speech sample produced by S1. The Gamma test pointed to a medium correlation between the two variables ( $G = -0.4$ ;  $p = 0.014$ ). The negative value of the coefficient means that the ratings of a perceived degree of foreign accent decrease as familiarity rises. This relationship is illustrated in Fig. 2.

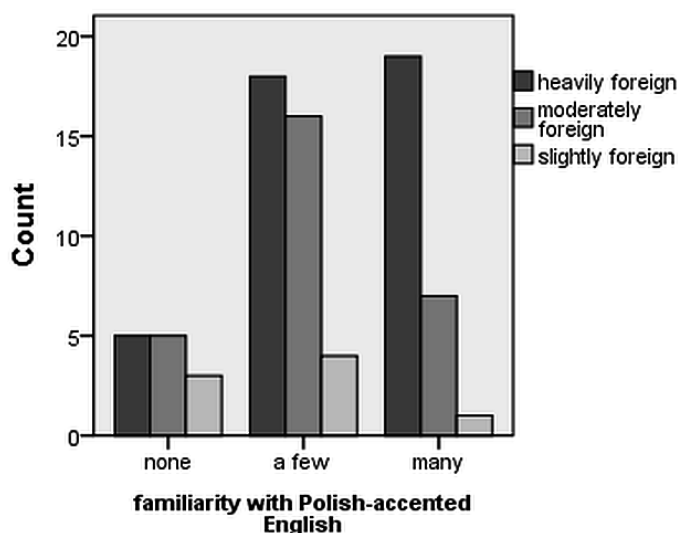


Figure 2. Cross tabulation of the listeners' familiarity with Polish-accented English and their evaluation of accentedness for S1.

As shown in Fig. 2., the largest number of the lowest rate (*heavily foreign*) is assigned by the listeners most experienced with Polish-accented English. As familiarity diminishes, we observe increasingly higher ratings; the judges unfamiliar with Polish English assessed S1 as *heavily foreign* with the same frequency as *moderately foreign* and the number of the highest score is bigger than for the most experienced listeners. This finding echoes the observation made by Munro and Derwing (1994) as well as Scheuer (2003) that more familiarity with a given type of non-native speech leads to harsher judgements for accentedness.

## 7. CONCLUSION

The present paper has meant to contribute to the ongoing research into the perception of foreign-accented speech by presenting empirical data on how 78 native speakers of English respond to Polish English. The aim of the undertaken research was to provide insight into the issues virtually unexplored by scholars, i.e. the influence of sociolinguistic factors on accentedness and irritation. The analysis revealed that listeners' age and gender do not exert any influence on their judgements. Even though the distribution of scores differed between males and females as well as between younger and older participants, this fact was not statistically significant. On the other hand, we found a correlation between education and accentedness ratings. The least educated listeners assigned harsher scores than the remaining judges and the rates increased alongside the level of education.

Prior experience with Polish-accented English and more frequent interactions with Poles resulted in lower accentedness scores, but had no effect on irritation ratings. The latter appears to be a fairly subjective variable and is influenced by overall attitudes the listeners have towards the speakers. Our study has not overtly tested the participants' attitudes, but the comments they provided imply that positive disposition towards the speakers is reflected in more lenient evaluations. The research has pointed to the relationship between annoyance and intelligibility rather than annoyance and accentedness, which means that foreign accent should not be equated with irritation. Needless to say, more research is needed to verify the claims made here and provide us with a better understanding of the perception of foreign-accented speech.



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APPENDICES

Appendix 1. Diagnostic passage.

When a student decides to go to study abroad, he might have many questions and more than one doubt. Where should he live? Share a flat, or look for a bed in a dormitory? Should he spend all of his time just studying in front of the computer? He'd better calm down, because marks are not the most important thing. He should live life to the full and take advantage of the many social and sport events which are offered. At first it is not easy for him to be comfortable in manner and confident in speech. He feels like a fool or comes across as a rare bird. Little by little he spots what kind of clothing is usually worn to be casually dressed for classes. He also learns to choose the language and customs right for various situations. But let me tell you, my friend, this long-awaited feeling doesn't develop fast, does it?

(An extract adapted from Prator, 1985).

**Appendix 2. Questionnaire used in the experiment.**

All the data is confidential and will be used anonymously only for the purposes of my research on Polish-accented English. Thank you very much for completing the questionnaire attentively.

*You are going to hear two speakers reading a passage. Circle a number on the scales that measure how foreign and how annoying each speaker sounds.*

Speaker 1 (track 1)

a) *How foreign does Speaker 1 sound to you?*

1. heavily foreign
2. moderately foreign
3. slightly foreign
4. close to native
5. no foreign accent

b) *How annoying is Speaker 1's accent to you?*

1. very annoying
2. moderately annoying
3. a bit annoying
4. pleasant to listen to
5. very pleasant to listen to

Speaker 2 (track 2)

a) *How foreign does Speaker 2 sound to you?*

1. heavily foreign
2. moderately foreign
3. slightly foreign
4. close to native
5. no foreign accent

b) *How annoying is Speaker 2's accent to you?*

1. very annoying
2. moderately annoying
3. a bit annoying
4. pleasant to listen to
5. very pleasant to listen to

Speaker 1

a) *How foreign does Speaker 1 sound to you?*

1. heavily foreign
2. moderately foreign
3. slightly foreign
4. close to native
5. no foreign accent

b) *How annoying is Speaker 1's accent to you?*

1. very annoying
2. moderately annoying
3. a bit annoying
4. pleasant to listen to
5. very pleasant to listen to

Speaker 2

a) *How foreign does Speaker 2 sound to you?*

1. heavily foreign
2. moderately foreign
3. slightly foreign
4. close to native
5. no foreign accent

b) *How annoying is Speaker 2's accent to you?*

1. very annoying
2. moderately annoying
3. a bit annoying
4. pleasant to listen to
5. very pleasant to listen to

***Would you like to add any other comments on Polish pronunciation in English?***

.....

.....

.....

.....

.....

.....

.....

**Please provide some background information about yourself.**

1. Sex: M / F
  2. Nationality: .....
  3. Age: .....
  4. Accent that you speak: .....
  5. Education: .....
  6. Occupation: .....
  7. How many Poles (approximately) have you happened to converse with in English? .....
  8. How frequently do you interact with Polish people?  
     every day                      a few times a week                      a few times a month  
     seldom
- in what situations: workplace / school / pubs / outdoor activities / formal settings  
 other .....

CZYNNIKI SOCJOLINGWISTYCZNE  
 WPLYWAJĄCE NA PERCEPCJĘ MOWY  
 Z OBCYM AKCENTEM

Streszczenie

W artykule zaprezentowano dane empiryczne dotyczące percepcji angielszczyzny Polaków przez trzy grupy rodzimych użytkowników z Wysp Brytyjskich (Anglików, Irlandczyków i Szkotów). Głównym celem przeprowadzonego badania było sprawdzenie, w jakim stopniu socjolingwistyczny kontekst odbiorcy (płeć, wiek, wykształcenie, stopień osłuchania z angielszczyzną Polaków i częstotliwość kontaktów z Polakami) wpływa na odbiór mowy z obcym akcentem. Sędziowie oceniali dwie próbki dźwiękowe angielszczyzny Polaków pod względem natężenia obcego akcentu i irytacji, którą one wywołują u słuchaczy. Analiza danych pokazała, że wiek i płeć respondentów nie ma wpływu na ocenę powyższych parametrów (zaobserwowane różnice nie są istotne statystycznie). Wykształcenie odbiorców oraz stopień osłuchania z angielszczyzną Polaków różnicował natomiast ocenę odsłuchiowanych próbek.

**Słowa kluczowe:** mowa z obcym akcentem, percepcja angielszczyzny Polaków.

SOCIOLINGUISTIC FACTORS  
 INFLUENCING THE PERCEPTION  
 OF NON-NATIVE SPEECH

Summary

The article presents empirical data on the perception of Polish-accented English by three groups of native listeners from the British Isles (the English, the Irish and the Scottish). The main aim of the study is to explore to what extent informants' evaluative judgements are conditioned by non-linguistic factors such as age, gender, education, familiarity with Polish-accented English and the frequency of interaction with Poles. The listeners rate the samples of

Polish-accented English on two parameters, i.e. foreign accentedness and irritation they evoke. The analysis has revealed that respondents' age and gender do not influence their judgments (the differences are not statistically significant). Education, prior experience with Polish-accented English and the frequency of interaction with Poles, on the other hand, exert influence on how the speakers are rated.

**Key words:** non-native speech, the perception of Polish-accented English.