

GLOBAL FOREIGN ACCENT IN NATIVE GERMAN SPEECH

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ABSTRACT

The results of this study suggest that German monolingual listeners were more likely to perceive a global foreign accent in the native German speech of consecutive bilinguals in Anglophone Canada and the Dutch Netherlands than in the speech of a control group of monolingual Germans in Germany.

The results furthermore suggest that contact with the native German language may have a more significant effect on predicting global foreign accent in native speech than age of arrival or length of residence. More specifically, for both English and Dutch second language groups, a global foreign accent was more likely to be perceived in immigrants who had less contact with their native German language than in those who had more contact, although this effect was more evident in consecutive bilinguals who immigrated after 22 years of age.

Keywords: foreign accent, L1 attrition, L2 acquisition, English, German

1. INTRODUCTION

Previous studies suggest that specific phonetic elements in a native language system can diverge from the native language norm when a second language is acquired in adulthood. Flege [2] found that phonetic properties of similar L1 and L2 phones were “merged” in the stop consonant [t] in both American speakers who had been immersed in a French-speaking community in France and in French speakers who had been living in the United States for over a decade. In both cases, the characteristic voice onset time of their native language became more like the voice onset time of their second language, decreasing for American English native speakers and increasing for native French speakers. Major [5] reported a similar phenomenon in his population of American English native speakers in Brazil. Consistent with Flege’s results, a case study by Sancier and Fowler [8] found that native Brazilian Portuguese speakers reported a stronger foreign accent in the pronunciation of a native Brazilian Portuguese speaker after her extended sojourn in the United

States in comparison to after a return to Brazil. Sancier and Fowler [8] observed that the voice onset times of the voiceless alveolar and labial plosives were generally longer in the US sessions than in the Brazil session which may have contributed to the reports of a stronger foreign accent. The above studies suggest that phonetic elements may diverge from a native language norm in an immigrant setting.

The present study addresses the issue of global foreign accent in the native speech of two different L2 groups of consecutive bilinguals. Moreover, the study examines which of the predictor variables of age of arrival, length of residence and contact to the German native language are successful at predicting global foreign accent in native speech.

2. METHODS

2.1. Experimental Procedure

The foreign accent assessment was adapted from Moyer’s [6] assessment. For each speaker, listeners were asked to make two judgments in the German language. The first judgement consisted of determining native versus non-native speaker status, the second judgement reflected confidence level on a three-point scale. This resulted in an operative six-point Likert scale: 1=certain of native speaker status, 2=semi-certain of native speaker status, 3=uncertain of native speaker status, 4=uncertain of non-native speaker status, 5=semi-certain of non-native speaker status, 6=certain of non-native speaker status.

A silent pause of seven seconds followed each speaker’s recording. During the silent pause, German listeners assessed native or non-native speaker status of the speaker they had heard prior to the silent pause. After the silent pause, the next recording was presented. The speech samples varied in duration from 12.6 to 17.7 seconds and the segmented recordings were normalized for peak intensity. Silent pauses in the speakers’ speech exceeding one second were reduced to one second. The total duration of the sequence of recordings, including pauses, was 22.53 minutes.

2.2. Speakers

Thirty-four German immigrants in Anglophone Canada; 24 German immigrants in the Dutch Netherlands; and 5 German monolingual controls in Germany were rated. Some consecutive bilinguals had knowledge of their second language while living in Germany, but none had been in an immersion setting prior to immigration. Speakers were described on the basis of three variables: AOA (age of arrival to either Anglophone Canada or the Dutch Netherlands), LOR (length of residence in either Anglophone Canada or the Dutch Netherlands), and CONTACT (amount of contact to German L1).

The variable CONTACT was an average composed of the following subvariables: 1. amount of contact with German at work; 2. amount of German spoken with present partner; 3. frequency of visits to Germany since immigration; and 4. overall estimate of amount of contact with German. In independent t-tests, only frequency of visits to Germany proved to differ significantly between the two groups ($t(55)=-5.455$, $p<0.001$). Given the geographical proximity of the Netherlands to Germany on the one hand, and the distance of Canada from Germany on the other, this difference is not surprising. The fact that the averaged variable CONTACT was not significant suggests that German immigrants to Canada compensated for a lack of visits through alternatives.

Table 1: AOA, LOR, and CONTACT for German immigrants to either Anglophone Canada (CA) or the Dutch Netherlands (NL). AOA and LOR are in years. CONTACT is based on a scale of 0-1, with 0 representing the least amount of contact and 1 the maximum. AOA differs significantly between the CA and NL groups.

	Average	SD	Max	Min
AOA CA	25	6.4	40	14
AOA NL	30	9.6	51	16
LOR CA	38	12.1	54	9
LOR NL	34	13.3	58	16
CONTACT CA	0.46	0.18	0.69	0.00
CONTACT NL	0.44	0.20	0.94	0.17

Averages for AOA, LOR and CONTACT for both second language groups are displayed in Table 1. In independent t-tests, AOA proved to be significantly different between the Canadian and the Dutch groups. German immigrants in Canada immigrated at a significantly younger age than those who went to the Netherlands ($t(55)= 2.75$; $p<0.05$).

Although the sample size was too small to include education of participants as a predictor

variable in the multiple regressions, it was ensured that a similar level of education was evident across L2 and control groups. This was done because some research suggests that first language attrition is more likely to occur in bilinguals with less official education than in those with tertiary education ([4], [9]). No difference was made regarding the country in which the education took place and differences in level of education were not significant.

Five German monolinguals, two male and three female, who were habitants of Germany and had never lived in a foreign country, were chosen to represent the control group. The youngest control subject was 53 years of age and the oldest control subject was 65 years of age.

2.3. Listeners

Two groups of German monolingual listeners completed the global foreign accent assessment (native versus non-native speaker judgement task [6]) in separate sessions at the Department of Phonetics at the University of Trier, Germany. Ten listeners took part in the first session and 9 listeners took part in the second session. Some research suggests that phonetic training can improve an individual's ability to detect foreign accent ([7], [3]). Due to the students' varying phonetic training, listeners were considered to be potentially more adept at detecting foreign accent than monolingual German native speakers with no phonetic training. Listeners who had been extensively exposed to either English or Dutch, for example through a school exchange to an Anglophone or Dutch speaking country, were emitted. Listeners who described themselves as being bilingual with any language combination were also emitted from the analysis. Inter-rater reliability was excellent, with a Cronbach alpha coefficient reported of 0.94 (all statistics were conducted using SPSS Version 13.0).

2.4. Speech Materials

The speech samples were extracted from previous recordings of a larger Charlie Chaplin film language test study. The selected recordings were made in the participants' homes in a quiet setting which ensured a suitable environment for the auditory analysis during the global foreign accent assessment.

To avoid the effect of listeners judging "a set of non-native produced sentences to be more strongly accented after, as compared to before, they became familiar with those sentences" [3], speakers'

utterances focused on the same occurrence in the film but were spontaneous. The German speakers therefore used similar vocabulary, as the same incident in the film was retold, but did not repeat a predefined utterance. Furthermore, it was ensured that the isolated segments contained no grammatical or lexical errors. This was verified when listeners were asked at the end of the assessment session to describe what they had based their judgements on and neither grammatical nor lexical errors were mentioned.

3. RESULTS

The primary aim of this study was to determine whether native speakers of German living in either Anglophone Canada or the Dutch Netherlands are perceived to have a global foreign accent in their native German speech.

A high global foreign accent rating (FAR) was interpreted to be equivalent to the same high rating on the operative six-point Likert scale. For example, if a participant had received a rating of 6 on the operative six-point Likert scale (certain of non-native speaker status), this was interpreted to be the highest FAR, or, in other words, the most foreign accented native speech. Similarly, a rating of 1 on the operative six-point Likert scale (certain of native speaker status) represented the least, or non, foreign accented native speech.

Due to the fact that the data were positively skewed, a Mann-Whitney test was conducted in order to investigate the primary aim of the study. Each averaged FAR for the experimental group ($n_{EG}=57$) was compared to each averaged FAR of the control group ($n_{CG}=5$). The consecutive bilinguals received a median FAR of 3.2, whereas the control group received a median FAR of 1.6. This difference was revealed to be significant at the 5% level ($U=57.00$, $p<0.05$, $r=-.28$), indicating that the German listeners were more likely to perceive consecutive bilinguals in Anglophone Canada and the Dutch Netherlands to have a global foreign accent than the monolingual German controls.

Not all bilinguals were evaluated to have a global foreign accent in their native German speech. Twenty bilinguals were rated clearly to be native speakers ($2.5 \geq FAR \geq 1.0$) (Group 1) and 23 had an unclear FAR ($4.5 > FAR > 2.5$). Fourteen bilinguals were rated clearly to be non-native speakers of German ($6.0 \geq FAR \geq 4.5$) (Group 2). Group 1 had an average FAR of 1.9, whereas Group 2 had an average FAR of 5.3 and was comprised of 9 English L2 speakers and 5 Dutch L2 speakers.

The L2 English speakers' FAR was not significantly different from the L2 Dutch speakers' FAR (median=3.14 vs. 3.16, respectively). This was verified by both a Mann-Whitney test between the averaged FARs of the two second language groups, and a Kruskal-Wallis test between the former two groups and the control group.

Forced entry multiple regression analyses were carried out in an attempt to determine the influence of various predictor variables in the German listeners' evaluations of the consecutive bilinguals. For all of the regressions, standard assumptions were met [1]. The first regression tested the impact of the predictor variables AOA, LOR, and CONTACT, on the outcome variable of FAR for the English L2 group ($n_{EL2}=34$). This model was significant with a total adjusted R^2 of .22 ($p<.05$). AOA was the only significant predictor variable with a standardized beta value of $-.39$ ($p<.05$). Multicollinearity was not evident with the average variance inflation factor (VIF) being 1.3 (max=1.5). It should however be noted that there was a significant correlation between AOA and CONTACT, as well as between AOA and LOR; although the coefficients for both were small ($R=0.337$, $p=0.26$; and $R=0.516$, $p=0.001$, respectively).

Another multiple regression was conducted to assess the impact of the same predictor variables on the FAR for the Dutch L2 group ($n_{DL2}=23$), although this sample was smaller than desirable given the amount of predictors. This model was significant with a total adjusted R^2 of .48 ($p<.001$). CONTACT was the only significant predictor variable with a standardized beta value of $-.76$ ($p<.001$). Multicollinearity was again not evident with the average VIF being 1.7 (max=2.0). AOA correlated here only with LOR ($R=.694$, $p<.001$).

Given the fact that AOA differed significantly between the English L2 and Dutch L2 groups, as explained in the methods section, the question was posed whether AOA would decrease in significance, and CONTACT increase in significance, in an English L2 group with an older AOA. Participants who had immigrated to Canada when they were older than 22 years of age were selected for this multiple regression ($n_{EL22}=20$), creating an average AOA of 29 years. Only AOA and CONTACT were entered as predictor variables due to both the small sample and the results of the previous regressions, indicating that LOR was not successful at predicting FAR. This model proved to be significant (Adjusted $R^2=.227$, $p<.05$). CONTACT became the only significant predictor variable, with a standardized beta value of $-.528$ ($p<.05$). No correlation between AOA and

CONTACT was evident, the maximum VIF being 1.10.

In a final multiple regression, 39 Dutch L2 and English L2 participants who had immigrated after the age of 22 were grouped together. Both CONTACT and AOA were entered as predictor variables, again because LOR proved to be unsuccessful at predicting FAR. This model was highly significant (Adjusted $R^2=.422$, $p<0.001$) and CONTACT was the only significant predictor variable with a standardized beta value of $-.676$ ($p<0.001$). No correlation between AOA and CONTACT was evident in this regression, and the maximum VIF was 1.0. This final regression suggested that for both second language groups, the less contact participants had with their native German language, the more likely they were to be perceived as having foreign accented native speech.

4. DISCUSSION

The primary aim of this study was to determine whether German native speakers who immigrated to either Anglophone Canada or the Dutch Netherlands are perceived to have a global foreign accent in their native speech. Although in future studies a larger control group is desirable, the fact that FAR was significantly higher in the experimental group was consistent with previous studies which suggest that specific phonetic elements of a native language system may be susceptible to first language attrition, even in adult second language learners ([2], [5], [8]). Furthermore, because only 14 consecutive bilinguals were clearly assessed to be non-native speakers of German ($6.0 \geq \text{FAR} \geq 4.5$), first language attrition at the level of global foreign accent was not revealed to be necessarily an *a priori* consequence of immigration. More sociophonetic research investigating specific phonetic elements, both at the segmental and suprasegmental level, may reveal which aspects of native speech are likely to be influenced by the second language and which of these aspects are perceived by native speakers.

The second question which this study addressed was whether one group of second language learners was more likely than the other to be rated as having a foreign accent in their native German speech. No significant difference was revealed between the FAR of English L2 and Dutch L2 speakers. Still, further research may indicate that different second languages do have different effects on the same native language. Moreover, future studies with larger sample groups may

substantiate the speculation that it is more difficult for listeners to differentiate between regionally accented and foreign accented speech when languages are used whose dialect borders overlap, as do those of the Netherlands and Germany.

The final aspect of this study investigated the impact of AOA, LOR, and CONTACT on the outcome variable of FAR. The problems associated with, or perhaps impossibility, of quantifying the amount of contact an immigrant has with his or her native language should be emphasized at this point. There are numerous ways for an immigrant to maintain or lose contact with his or native language, and to reduce a portion of these to a single number may be misleading. Still, the results of the present study suggest that contact to the native language was more successful at predicting global foreign accent in native speech than age of arrival or length of residence. More specifically, in immigrant populations with a late AOA (here only those who immigrated after 22 years of age), the effects of CONTACT became more substantial, whereas AOA and LOR were insignificant. In essence, this is to say that immigrants who immigrate later, and who have more contact with their native language, are less likely to be perceived as having a foreign accent in their native speech than immigrants who similarly immigrate later, but have less contact with their native language.

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