



The effect of speakers' regional varieties on listeners' decision-making

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Abstract

It has been widely reported that speech provides cues to a speaker's regional background. Little is known about how such cues influence human behavior, however. In the present study we used a matched-guise design to test how speakers' regional accents affect listeners' decision-making. In three scenarios, 72 subjects from three regions in Switzerland were asked to choose either the Standard German, Bern, or Zurich German speaker when asked to select a secretary, surgeon, or travel companion. Results revealed that preferences differed depending on the scenario. We further report two results that have not been described before: (1) the Standard accent was least preferred in all scenarios; (2) in-group favoritism seems to apply only partially to the Swiss context: the Zurich variety was the most preferred variety for all listener groups. We discuss implications from the point of view of accent prestige and social identity theory.

Index Terms: sociophonetics, dialectology, decision-making, social identity, matched-guise

1. Introduction

Everyday experience tells us that differences in speech provide cues to the regional background of a person. Studies have shown that people derive personality traits such as competence and attractiveness based on accent differences alone [1-5]. Yorkshire speakers, for example, are perceived as being more honest and reliable than Londoners [5]. At the same time, judges showed accent loyalty: accents that were representative of one's own speech community were rated more favorably. Moreover, the closer to a more prestigious 'Standard' accent, the higher the ratings of competence [3, 6, 7].

Despite the fact that much is known about how regional accents are perceived in society, the degree to which these differences govern human behavior is still under-researched. [7] analyzed the effect of Standard and regionally-accented German on employability and perceived competence. On both parameters, Standard German outperformed regionally-accented speech in an audio-only condition. [8] examined the influence of foreign-accented and regionally-accented speech on the evaluation of job applicants. Midwestern US-accented speech was evaluated most positively. [9] reported that customers were more satisfied with a salesperson if he spoke with a regional accent similar to their own. In a recent study, [10] tested the effect of perceived regional accent on cooperation or competition with an interlocutor. Speakers tended to cooperate more with speakers of the same regional accent. [11] studied the effect of regional accents on the attribution of guilt. In a matched-guise design, an actor played the role of the suspect, speaking Standard and Birmingham

English. On a 7-point scale, the suspect was rated significantly guiltier when speaking with a Birmingham as opposed to a Standard English accent.

The studies mentioned were conducted on languages in which Standards are well established and regional accents are viewed as a deficient divergence by laypeople. How does a speaker's regional accent affect human behavior in a country where regional accents are the default means of communication [12] and viewed as being more prestigious than the Standard [13, 14]? Switzerland is such a case. In German-speaking Switzerland we find a diglossic situation with Standard German as the high variety and regional accents as the low varieties. The former is used in writing; the latter are primarily used in speaking [15]. Swiss German (hereafter SwG) is spoken by 4.5 million speakers (i.e. 65% of the population) on an everyday basis [16].

2. Rationale

In a matched-guise design, we recorded one actress imitating Bern SwG (hereafter BRN SwG), Zurich SwG (ZRH SwG), and Standard German (GER) in three different scenarios. In the first scenario, listeners were instructed to imagine having to fill a secretary position with one of three candidates. They were asked to listen to three sentences spoken by the actress, one sentence in BRN SwG, one in ZRH SwG, and one in GER. In the second scenario the listeners had to choose between three surgeons to perform an operation, and finally, they had to select a travel companion for a trip to Italy. Three listener groups from Bern, Zurich, and Lucerne served as participants.

The matched-guise design was selected as it reveals less monitored reactions on the part of the listeners [1]. A single speaker recorded all the sentences as differences in vocal quality can influence the attribution of personality traits, and consequently affect decision-making [10, 17]. BRN and ZRH SwG were selected as they are perceived differently in society: BRN SwG is known to be the most popular regional accent and is described as 'colorful', 'cozy', 'countryside-ish' [18-21]; ZRH SwG is much less popular and described as 'arrogant', 'cocky', and 'unsympathetic' [ibid.]. Finally, we wanted to examine in- and out-group preferences by including three different listener groups. Studies have shown that listeners tend to prefer in-group to out-group speakers in various experimental designs testing for an effect of regional accent on human behavior [4, 8, 9, 10].

Judging by this literature review, we predict that: (a) Standard German will be treated unfavorably in all three scenarios given its lack of prestige and limited domain of application and (b) subjects will treat favorably those stimuli that match their own regional accent background.

3. Methods

3.1. Varieties

The regional accents imitated in the present study are BRN and ZRH SwG, which have been reported to be different in segments and prosody. Accent identification on the basis of a few sentences alone should thus be possible. Figure 1 shows the vowel quadrilateral of ZRH (black) and BRN SwG (red).

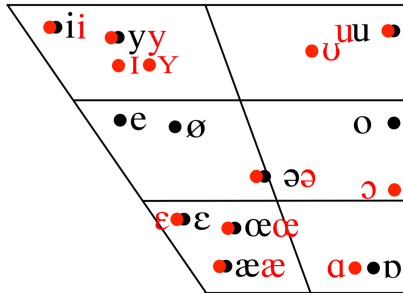


Figure 1: Vowel quadrilateral of ZRH SwG (black) and BRN SwG (red) (adapted from [22, 23]).

BRN SwG features lax near-closed near-front vowels /i/ and /y/ and a near-closed near-back lax vowel /u/. A major phonological difference is /i/-vocalization in particular contexts in BRN SwG [24]. As for GER, [25] reports 13 vowels for Northern German. In terms of f0, BRN SwG features rising ‘default accents’ contrary to the GER falling ‘default accents’ [26]. Rhythmically, BRN SwG is reported to have a lower percentage of vocalic intervals (%V) and lower consonantal duration variability [27]. When comparing results from [27] and [28], BRN and ZRH SwG speakers tend to have higher %V values than GER (bearing in mind the different designs of the studies).

3.2. Speaker

The actress, 35, was trained in musical theater in NYC where she attended courses on diction and phonetics. She also holds an MA in linguistics with a specialty in phonetics. Her native regional accent is that of Schwyz. She lived in Bern for eight years and in Zurich for three. She is familiar with both accents, having acted in both accents in previous productions. In everyday situations she speaks Schwyz SwG (hereafter SYZ SwG) but feels competent BRN and ZRH SwG.

3.3. Material

Nine sentences (three scenarios*three varieties) were given to the actress for preparation. For each scenario, the speaker attempted to convey the same emotion, attitude, and personality type in every variety. At the same time, the speaker attempted to avoid over-caricaturing the dialects. For GER, a Hanoverian German was the target; for BRN and ZRH the city variant was the target. The material was read in such a way that – for each scenario – focused constituents (shown underlined in 3.6) and overall prosodic structure were kept as similar as possible in each variety. The creation of the stimuli was conducted in one recording session as additional takes might have resulted in voice quality differences that may have affected decision-making [10, 17]. The speaker was recorded in a quiet room at her home with a Sennheiser MKH 40 P48

microphone, which fed directly into a MacBook Pro Retina, 2.8 GHz via Fireface UCX Interface (sampling rate 44.1kHz, quantization rate 16-bit). A two second 440 Hz pure tone separated each variety in every scenario. Stimuli were normalized in amplitude to 68dB.

3.4. Authenticity test

To test if the imitated varieties were authentic we performed a listening test with ten ZRH, ten BRN, and ten GER listeners. All listeners claimed to speak the variety on a daily basis. They rated their own variety’s stimuli for authenticity on a 6-point scale (1=not authentic, 6=very authentic). The BRN and ZRH listeners were a subset of those participating in the main listening experiment. The rating took place after the main experiment.

3.5. Subjects

We tested a total of 72 listeners: 24 from BRN, 24 from ZRH, and 24 from Lucerne. Lucerne (hereafter LCN) subjects were selected as they are geographically located between the two regional accents, see Figure 2. Subjects were mostly university students, speakers of the respective regional accent, and aged between 20 and 35. 57% of the subjects were females (n=41), 43% were males (n=31). None of the subjects reported significant problems with hearing or sight. Figure 2 shows the regional distribution of varieties, subjects, raters, and speaker of the present experiment. The GER coat of arms is placed in the South of Germany for illustration purposes only.

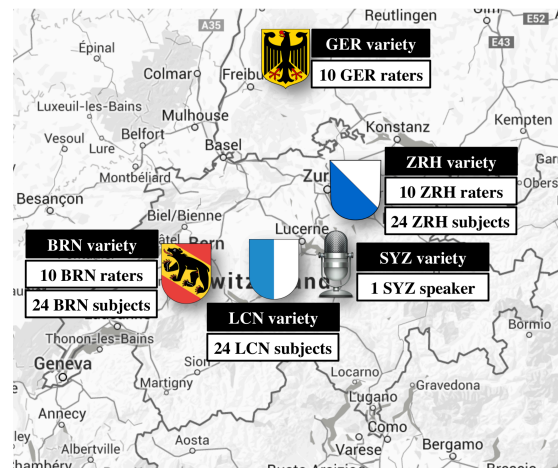


Figure 2: Regional distribution of varieties, subjects, raters, and speaker in the current study.

3.6. Procedure

In a rapid and anonymous format, we presented listeners with three scenarios. Each scenario contained three stimuli (BRN, ZRH, and GER) provided by the actress. Listeners were asked to select either the first, second or third stimulus in each scenario. Subjects were not informed about the three varieties, as this would have affected the listeners’ judgments [29].

Scenario 1 (Job): You are part of HR and you are hiring someone new for administration. You can choose between the following three applicants. Who will you choose?

GER: Ich habe eine fünfjährige Ausbildung in dem Bereich und ich könnte die Stelle so schnell wie möglich antreten.

ZRH SwG: Ich han ä foif jöhrigi usbildig i dem Beräich und ich chönt die Schtell so schnäl wie möglich ooträtte.

BRN SwG: *Ig han e fünf jährigi Usbiudig i dem Bereich u i chönnt die Schteu so schnäu wie mögloch aaträtte.*

English translation: *I have five years of training in this field and I could fill the position as soon as possible.*

Scenario II (Operation): *You have torn your ligaments playing soccer. You can choose between the following three doctors. Who will you choose?*

English translation: *I would recommend surgery and I would like to perform the surgery myself.*

Scenario III (Travel): *You have won a trip to Italy and you can bring someone along. You can choose between the following three travel companions. Who will you choose?*

English translation: *My name is Fiona, I am twenty-five years old and I would love to travel to Italy with you.*

Listeners were tested in quiet rooms at the Universities of BRN, ZRH, and LCN. The experiment lasted between three and five minutes. Subjects heard each stimulus once through high-quality headphones. Stimuli were fully randomized: every situation equally appeared in first, second, and third position. The stimulus order in each scenario was randomized, so that every listener heard a different combination of scenarios and varieties. Following stimulus presentation, subjects told the experimenter the stimulus, i.e. speaker, of their choice. Subjects were debriefed after participation and compensated with a chocolate egg. All data were analyzed using JMP [30] and R [31].

4. Results

4.1. Authenticity test results

Figure 3 shows the results of the authenticity test. Each chart covers one scenario on a scale from 1 (not authentic) to 6 (very authentic) as indicated by BRN, GER, and ZRH raters.

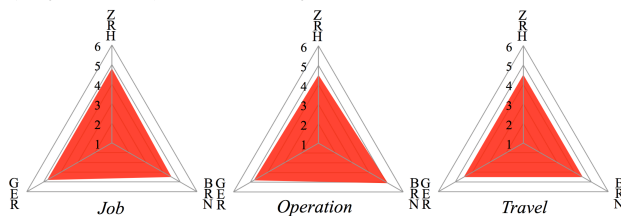


Figure 3: Authenticity rating by situation.

A fully-colored triangle in Figure 3 would entail 100% authenticity. The operation scenario was rated most authentic ($M=4.8$, $SD=1.0$), followed by the job scenario ($M=4.7$, $SD=.91$), and the travel scenario ($M=4.5$, $SD=1.1$). This difference was not significant (linear mixed effect model). In the job scenario, ZRH ($M=4.8$, $SD=.91$) and GER ($M=4.8$, $SD=.78$) were rated equally well; BRN was rated less authentic ($M=4.5$, $SD=1.08$). In the operation scenario, BRN was rated most authentic ($M=5.1$, $SD=.99$), followed by GER ($M=4.8$, $SD=.63$), and ZRH ($M=4.5$, $SD=1.3$). In the travel scenario, all three imitations were rated equally well ($M=4.5$, ZRH $SD=1.17$, BRN $SD=1.08$, GER $SD=1.17$). None of these differences were significant (linear mixed effect model).

4.2. Perception results

Preliminary analyses tested whether subjects' gender had an effect on the response. No main effect or interactions were found (nominal logistic regression model). All data were thus collapsed across gender for the main analyses.

4.2.1. Effect of scenario

Figure 4 shows the preferences for the BRN variety (blue), GER variety (green), and the ZRH variety (pink) by scenario, pooled across all subject groups (BRN, LCN, ZRH).

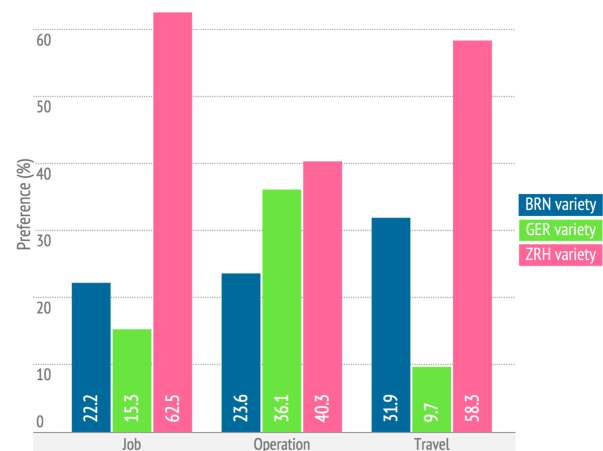


Figure 4: Preferences (%) by scenario.

Preferences for a variety differed significantly between the scenarios (nominal logistic regression model with *scenario* and *subject's variety* as model effects, $R^2=.07$, $p=.013^*$); there was no interaction of *scenario*subject's variety*. In the job scenario, subjects preferred the ZRH variety (62.5%) the most and the GER the least (15.3%). A post-hoc chi-square test showed these differences were significant ($X^2=28$, $p<.0001^*$; Bonferroni adjusted α for *scenario* ($.05/3$)= $.017$). In the operation scenario, 36.1% selected the GER variety, while ZRH remains the preferred variety. Least preferred was the BRN variety. A post-hoc chi-square test revealed these differences were not significant. In the travel scenario, 31.9% of the subjects opted for the BRN variety. The ZRH variety was treated even more favorably, with 58.3%. Least favored was the GER variety (9.7%). A post-hoc chi-square test showed these differences were significant, $X^2=25.5$, $p<.0001^*$ (Bonferroni adjusted α for *scenario* ($.05/3$)= $.017$). It is particularly the subjects in LCN that contribute to these differences in relative proportions, see Figure 5.

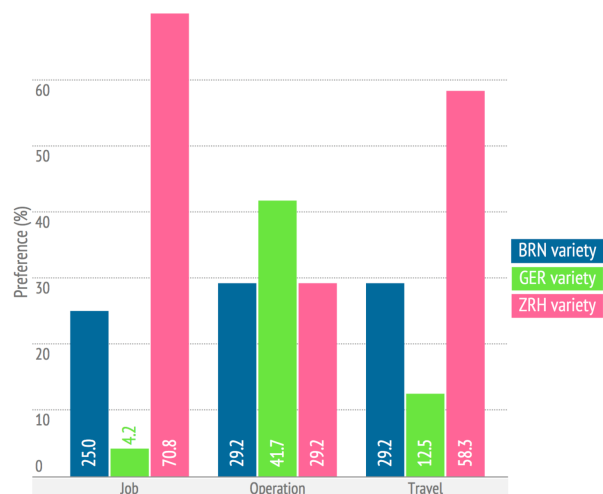


Figure 5: Preferences (%) by scenario (LCN subjects only).

For LCN subjects, preferences strongly varied between the scenarios (nominal logistic regression model with *scenario* and *subject's variety* as model effects, $R^2=.1$, $p=.007^*$; Bonferroni adjusted α for *subject's variety*, $0.05/3=.016$). LCN subjects strongly disfavored the GER variety in the job scenario (4.2%), while strongly preferring the ZRH variety instead (70.8%). The GER variety stands out positively in the operation scenario (41.7%). For the travel condition, LCN subjects preferred a ZRH companion (58.3%) while the GER companion was favored least (12.5%).

4.2.2. Effect of in-group favoritism

Figure 6 shows the relative proportions of preferences for the BRN variety (blue), GER variety (green), and the ZRH variety (pink) by subject group, pooled for all three scenarios (job, operation, and travel).

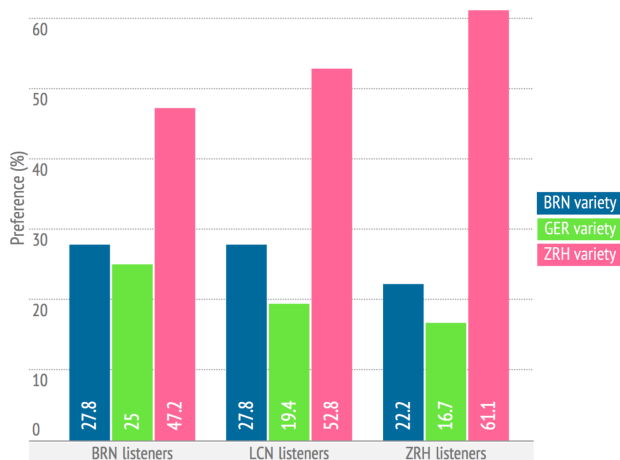


Figure 6: Preferences (%) by subject group.

Preferences for a variety did not differ between the subject groups (nominal logistic regression model with *scenario* and *subject's variety* as model effects). In all three groups, there was a general tendency that the ZRH was preferred the most, BRN the second most, and GER the least. This trend is most evident in the ZRH subject group: 61.1% prefer their own variety. In BRN, too, the ZRH variety was the preferred variety (47.2%).

5. Discussion & Conclusion

5.1. Effect of scenario

The results of the current study corroborated the first prediction that Standard German would be treated unfavorably in all three scenarios. Subjects predominantly opted for either the ZRH or BRN variety. This result has not previously been described: [3, 6-8, 11] reported that Standard accents are treated more favorably in similar experimental designs. This finding may be explained in that regional accents are the natural means of communication in Switzerland: when asked about the language spoken at home and at work, the majority indicates 'Swiss German' (66% at work, 60% at home) [16]. Regional accents enjoy high prestige in Switzerland, which is unique for German-speaking Europe [32].

The GER variety was rated relatively high in the operation scenario. An explanation may lie in the high number of German doctors in Swiss hospitals. The chances of being

treated by a GER-speaking doctor are 16.9% [33]. A preference for a GER-speaking doctor was particularly prevalent in the LCN subject group (41.7%, a post-hoc chi-square test revealed these differences were significant ($X^2=13$, $p=.0015^*$; Bonferroni adjusted α for *subject's variety* and *scenario* ($(.05/3)/3=.005$), cf. Figure 5). A number of subjects informed us that in Lucerne, in particular, the density of German-speaking doctors is high. Statistics do not corroborate such claims, however: at the cantonal hospital in LCN, 32% of the doctors are GER-speaking. This figure is higher at the University Hospital in BRN (34%) and even higher in the University Hospital in ZRH (39%) (personal communication HR representatives).

5.2. Effect of in-group favoritism

Social identity theory suggests that individuals tend to augment their self-image by strengthening the prestige of their own in-group [9]. As a consequence, raters tend to attribute more positive judgments to members of the in-group [4, 8-10]. While the ZRH subjects' result is in line with this trend, the surprising finding was that BRN subjects preferred an out-group variety in all three scenarios – thus refuting the second prediction stated earlier. The reason for this is not clear. Previous literature on how the ZRH variety is perceived reports attributes such as 'arrogant' or 'unsympathetic' [18-21]. The studies mentioned go back 20-37 years, however. Is it possible that the ZRH variety would no longer be perceived so unfavorably if these studies were replicated today? During the debriefing, few of the BRN or LCN subjects reported that they disfavored the ZRH variety. Zurich and its urban region is the largest economic center in Switzerland, featuring a high density of banking and law professions. Perhaps this translates to the BRN subjects' opting for the ZRH speaker in the job and operation scenario, attributing the ZRH speaker more trustworthiness and competence.

A number of findings that emerged in this study remain puzzling and need further research. One, despite the fact that BRN SwG is viewed most positively in Switzerland, BRN subjects chose the ZRH travel companion (47.2%). Two, the LCN subjects' distinct preference for ZRH SwG is difficult to interpret as well. It is conceivable that LCN listeners falsely identified the ZRH variety as LCN variety, as informally reported by some LCN subjects. Segmentally, the LCN variety features more similarities to ZRH SwG than to BRN SwG (e.g. lack of /l/-vocalization for most speakers, cf. [24]). These perceived similarities may have created a sense of interpersonal attraction that may have led to more favorable evaluation of ZRH SwG [8]. Also, the actress who imitated the sentences grew up in SYZ, which is geographically and linguistically closer to LCN and ZRH than it is to BRN (see Figure 2). Perhaps there were traces of the actress' L1 in the imitated material that may have confounded LCN subjects' judgments.

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