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The Social Meaning of /r/ in Austrian German

A study on the resignification of the phoneme's alveolar variant

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Abstract

Bei der Verbreitung vieler sich im Gange befindenden Lautwandel wird den sich im Wandel involvierten Varianten eine soziale Bedeutung zugeschrieben (Eckert 2019). In der deutschen Sprache hat sich der Artikulationsort des Phonems /r/ zunehmend von einem alveolaren zu einem uvularen verändert. Unterdessen sind in der zweiten Hälfte des 20. Jahrhunderts Migrant/inn/en mit nicht-deutschen Erstsprachen Teil der deutschen Sprachgemeinschaft in Österreich geworden. Eine auffallende Interferenz ihrer Erstsprachen im Deutschen ist die Verwendung eines alveolaren /r/. Das führte zu unterschiedlichen sozialen Bedeutungen dieser Variante. In dieser Studie wurde die soziale Bedeutung der alveolaren und uvularen Realisierungen, gesprochen von einem jeweils jüngeren (18 Jahre) und älteren (59 Jahre) Sprecher österreichischen Deutschs, untersucht. Teil der Vorgehensweise waren zwei Experimente; eine modifizierte Version des Matched-Guise-Test und zwei Audio-Ausschnitte, gefolgt von offenen Fragen. Die Ergebnisse zeigen, dass obwohl die alveolaren Varianten die archaischen im Lautwandel sind, sie, unabhängig vom Sprecheralter, mit einer sogenannten ›migrantischen Persona‹ assoziiert werden.

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Schlagwörter: Social meaning, sound change, Austrian-German, migrant persona, Austrian persona

1 Introduction

Meaning in everyday human encounters is transferred via multiple channels, one of which is the medium of spoken language. The most evident form of such transferal might appear to be the explicit content of what we say, however, it should not be overlooked that how something is said can be at least equally socially meaningful. Social meaning then can be defined as meaning transferred in non-sentential form. It has been proposed that differences in how we say things are never 'random' or 'free', but rather governed by specific rules serving functional distinctiveness (Weinreich et al. 1968). The function of this difference then, can lie in the social sphere and, conversely, it is always through difference that social meaning arises (Irvine 2002). One case of such difference, or in sociolinguistic terms 'variation', is the place of articulation of the phoneme /r/ in Austrian German. Different places of articulation exist because of the following two reasons. First, the German /r/ has been undergoing a sound change, with an increased pace towards the end of the 20th century (Ulbrich & Ulbrich 2007), during which alveolar realizations have become archaic, and uvular and velar variants the innovative ones (Moosmüller et al. 2015). Second, during the same time, migrants with different L1s from German joined the Austrian German speech-community. Because of phonological transfers from their L1s, their speech has been described as characterized by alveolar realizations of the phoneme /r/ (Hinrichs 2013). Both of these developments from the end of the last century have potentially influenced the social meaning attached to alveolar variants in difference to uvular ones.

Therefore, this study aims to examine which social meanings the different variants of the phoneme /r/ carry in the Austrian speech-community. For this purpose, subjective evaluations of members of the Austrian speech-community were collected by carrying out a modified version of the matched-guise test (experiment I) and asking open-response questions upon listening to audio recordings (experiment II) (see section 3). Thus, the experiments' results represent attitudes which are linked to social meaning. Garrett (2010) has described language attitudes as "permeating our daily lives" and while we are "not always conscious of them […] many nevertheless are overt" (Garrett 2010: 1–2). He furthermore links language

attitudes to language variation and social meaning when he notes that "Although we may feel that there are many different ways of expressing our thoughts in our languages, language variation carries social meanings and so can bring very different attitudinal reactions, or even social disadvantage or advantage" (Garrett 2010: 2). The link between 'attitude' and 'social meaning' then is that the social meaning of the different variants of the phoneme /r/ is the set of attitudes that according to members of the Austrian speech-community these variants index (D'Onofrio 2018). This proposed definition of the terms *social meaning* and *attitudes*, as well as the link between them, serves as a basis for the theoretical and empirical investigation of this paper.

In the next section, I review the existing literature on the sound change of the German /r/, after which the notions of the 'indexical field' and the 'embedding problem' will be introduced and defined. Section 3 addresses the experimental methodology. In section 4 the results will be presented. Finally, section 5 discusses the findings before concluding in section 6.

2 Background

The following literature review discusses three interrelated topics relevant to the purposes of this investigation. Firstly, a diachronic and synchronic overview of the sound change of the phoneme /r/ in German will be provided. Secondly, the notions of 'indexical field' and 'style' will be introduced. Finally, a theory for studying the social meaning of sound changes will be presented, with a focus on the 'embedding problem' (Weinreich et al. 1968), before stating the research gap for studying the social meaning of the /r/ in Austrian German. For reasons of better readability, the variants of [r] and [ɾ] will henceforth be referred to as 'alveolar realizations', whereas uvular variants such as [ʁ], [ʀ] and [χ], and velar variants such as [x] and [ɣ] will be jointly referred to as 'uvular realizations'.

2.1 Diachronic and synchronic variation of German /r/

The existing variation of the pronunciation of German rhotics has been extensively described from a synchronic viewpoint (Hall 1993; Moosmüller et al. 2015; Ulbrich & Ulbrich 2007; Wiese 2003) and a diachronic one

(Runge 1973; Schiller 1999; Schrambke 2010 Vremšak-Richter 2010; Wiese 2003). Particular attention has been given to a sound change of the German /r/ concerning a shift from an alveolar to a uvular place of articulation for which the first observation dates to the 16th century (Schiller 1999). As this sound change was ongoing, both prescriptivist reference works and scientific publications have studied and commented on this sound change. In a reference work published in 1889 the uvular realization of the German /r/ is judged to be "adulterated, contemptible and perverted" (Runge 1973: 230). Published in 1957, another reference work called *German stage pronunciation* (Deutsche Bühnenaussprache) declared both alveolar and uvular realizations as acceptable for the first time. According to the German pronunciation dictionary (Deutsches Aussprachewörterbuch), published in 2010, there are three possible consonantal variants of /r/, namely an apical or uvular trill or velar voiced fricative and one vocalized variant (Vremšak-Richter 2010). Overall, the development of these linguistic provisions in the past century points towards a gradual acceptance of the uvular pronunciation of the German /r/. This observation can be supported by scientific publications that have aimed to describe the existing phonological variation of this phoneme. To this effect, it is worth pointing out one sociolinguistic production study from 1999 (Wiese 2003) and a variationist paper with a focus on dialectology from 2007 (Ulbrich & Ulbrich 2007).

In the study dating back to 1999, the pronunciation of /r/ among two groups of speakers in Southwest Germany was analyzed in three different phonological environments. The two groups consisted of a group of male speakers around the age of 35 and another group of male speakers with the mean age of 75. The variable of social class was controlled for by selecting speakers who had manual jobs. The results show that the uvular realization accounted for the most considerable difference in preference among both generations, being more frequent among the younger age group. The three phonological environments considered were the onset position in a stressed syllable, the onset position in an unstressed syllable and the coda position. Comparing the age groups, the latter phonological environment exhibited the highest degree of variation with more vocalizations (Wiese 2003).

In a second study carried out eight years later in 2007, the pronunciation of the /r/ in Austrian and Swiss German was compared across five different phonological environments. Since it was not a sociolinguistic study, speaker profiles were kept constant and extracts of male newsreaders' speeches were analyzed. The five conditions tested were on the one hand /r/

in onset position and on the other hand /r/ in coda position following a short vowel, following a long vowel (except [a]), following the long vowel [a] and /r/ in the coda of prefixes and suffixes. For Austrian German speakers, in all environments, a relatively small percentage of alveolar trills and taps was recorded, ranging between 1–15%. In the onset position, the most common realizations included uvular trills, taps and fricatives. In all four coda positions tested, vocalized realizations were the most common, ranging between 23–61% (Ulbrich & Ulbrich 2007).

Summarizing the findings of both variationist studies, one can come to at least two conclusions. First, since for the younger speakers the phoneme /r/ more often has a uvular realization than an alveolar one, the apparent time study from 1999 gives an indication of the directionality of the sound change. This development also serves as an explanation for the comparatively low percentages of alveolar realizations in Ulbrich & Ulbirch's study conducted eight years later. In addition, this direction of the sound change, with alveolar realizations being the archaic variants and uvular and velar realizations the innovative ones, is in line with the abovementioned prescriptivist sources, which have described the innovative uvular variants as adulterated, and observations in older scientific publications which have already stated the same directionality for the sound change (Moosmüller et al. 2015; Runge 1973; Schiller 1999; Vremšak-Richter 2010). Second, there is a difference in how phonological environments are affected by the sound change. While the onset is dominated by consonantal variants with a uvular place of articulation, the coda environments exhibit a higher degree of vocalized variants. Uvular realizations can also be found in the latter environments, whereas vocalizations are exclusive to the syllable coda. Alveolar realizations were still found in both studies in all phonological environments.

With regards to the advancement of this sound change it has been noted that it has taken a particularly increased pace in the second half of the 20th century (Ulbrich & Ulbrich 2007). Because of the recency of the sound change, it has been argued that it is the only one in the German language that its present-day speakers have awareness of (Wiese 2003). A further indication of this awareness are German verbs such as *kretzen*, *lorbsen*, *lurken*, *räggen*, *rucksen* or *tschirren* that equally refer to the uvular pronunciation of /r/ and translate to unclear and slurred speech (Schrambke 2010: 56). Even though some speakers have retained an archaic alveolar place of articulation, the sound change has almost reached completion (Schrambke

2010). This last stage of the sound change has been referred to as 'free variation'. The sounds [ʀ] and [r] have been described as dialectal or idiolectal variants of /r/ (Schiller 1999). With reference to Austrian German in particular, it has been put forward that "all variants of the uvular or the alveolar trill can be used without social implications, there are articulatory free spaces in which all realizations are theoretically possible"[1] (Moosmüller 2002: 101). The findings of this study contradict this statement and suggest that alveolar and uvular variants are not in free variation but that their use indeed has a social implication.

2.2 The social meaning of sound change and the indexical field

The notions of 'free variation' and 'articulatory free spaces' seem to overlook the fact that for a sound change to spread and achieve completion, the variants involved need to display functional distinctiveness which can lie in the social sphere (Weinreich et al. 1968: 162). In a further step, it has been argued that, in fact, every sound change is rooted in a social motivation (Eckert 2019). During any sound change the archaic and innovative variants then need to take on distinct social meanings. This process of reconstructing the social meanings can also be described as the two types of variants developing new iconic links, that is links between the variants of /r/ and social concepts or categories. Iconization, then, refers to a process during which the link between a social image and a linguistic behavior or feature becomes transformed (Irvine 2002). With these newly emerging iconicities a new indexical field arises.

An indexical field describes a field or system of meanings that are linked by ideology. It has been defined as "embodiment of ideology in linguistic form" (Eckert 2008: 464). This field is fluid and everchanging since the meaning carried by linguistic variables is subject to constant reinterpretation which leads to new ideological connections. Different social indexicalities in the indexical field are shared in the mental representations of members of a given speech-community[2]. In the light of an ongoing sound

[1] Freely translated by author, original: "Im Österreichischen können alle möglichen Varianten sowohl des uvularen als auch des alveolaren Trill ohne soziale Implikationen genutzt werden, es bestehen somit artikulatorische Freiräume, in denen theoretisch individuelle Realisierungen möglich sind" (Moosmüller 2002: 101).

[2] According to Labov, a speech-community is a group of speakers which shares a set of social attitudes and has common normative values (1972).

change, the variants of the phoneme undergoing the change are socially decoded based on this indexical field (Eckert 2019; Irvine 2002; Weinreich et al. 1968). The social meaning of these variants, however, cannot be studied in isolation. It rather has to be comprehended in the context of other socially meaningful components, such as clothing or other stylized commodities, that contribute to forming a "persona style" (Eckert 2008: 456). This notion of 'style' has to be understood as a system of expressions which are exploited to create semiotic distinctiveness (Irvine 2002). In simpler terms, style can be understood as a practice through which people create social meaning (Eckert 2005).

2.3 The embedding problem

After this overview on the sound change of /r/ in German and the review about theory on social meaning and sound change, it remains to be investigated how this sound change has socially embedded within the Austrian speech-community. The 'embedding problem' is one of the five problems[3] that has been identified as necessary to be answered in order to truly understand changes in language. In a first step, it refers to how a linguistic change spreads across the larger linguistic structure, or in other words, how a specific feature spreads from an idiolect to more and eventually all speakers. In a next step, the embedding problem also refers to the question of how the social significance of the feature undergoing the change is distributed in a given society. More specifically, this issue of referring to the social dimension of an ongoing change has also been termed 'embedding in the social structure' (William et al. 1968: 185–186). So far, the social dimension of the embedding problem has not been analyzed for the sound change of the German /r/ – a research gap acknowledged in the concluding remarks of Wiese (2003). In order to tackle this gap, it seems critical to provide some context about the society in which this sound change has been embedded.

[3] In the first half of the 20th century historical linguists struggled to fully explain language change, since they were disregarding social factors (William et al. 1968: 95). In order to overcome this problem, William et al. (1968) propose a more holistic theory of language change and hold that at least five issues need to be considered. If one of them remains unanswered, one is left with the problem of not fully understanding a change in a given language. This explains the choice of word 'problem' to describe each of these five issues.

In the second half of the 20th century, Austria saw a heightened influx of immigrants, so-called 'guest-workers', following labor recruitment agreements with Turkey in 1964 and Former Yugoslavia in 1966 (Faßmann 2016). They became new members of the predominantly German-speaking community in Austria and participated in this socio-semiotic landscape through mundane linguistic and non-linguistic acts which contributed to reshaping and redefining the preexisting social meanings in this community (Eckert 2019). With their different non-German L1s migrants made phonological transfers from their native languages. For the case of Germany, their alveolar realization of the phoneme /r/ has been described as characteristic for their ethnolect (Auer 2013; Berend 2013; Wiese 2012).

Summarizing the range of occurrences of an alveolar place of articulation of the /r/, it can be noted that on the one hand it has become an archaic variant in an ongoing sound change and on the other hand it simultaneously characterizes an ethnolect. This dichotomy has also been noted in a publication on German ethnolects stating that "rolled r [alveolar /r/] can easily point to a 'migrant', even though it also is a German pronunciation variant, e.g. in Bavaria[4]. Nevertheless, the rolled r almost always sounds pretty migrant-like, because almost all migrant speeches have it"[5] (Hinrichs 2013: 161). From this literature review the question arises what the social meaning of the alveolar realizations of the phoneme /r/ in Austrian German is. Crucially, it must be considered that the people participating in the Austrian speech-community are no longer to be taken as a homogenous group of L1 German speakers as assumed in former studies (Ulbrich & Ulbrich 2007; Wiese 2003), since Austria has become a country of immigration with residents having different L1s than German (Faßmann & Reeger 2008). This novel approach raises further issues, such as whether the social meaning attributed to the realizations interacts with the listener's socio-demographic characteristics.

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4 Except for the westernmost federal state of Austria (Vorarlberg), amongst other regions, the Bavarian language refers to the German spoken in Austria (Mentrup 1980).

5 Freely translated by author, original: "Gerolltes r kann leicht auf 'Migrant' hinweisen, obwohl es auch eine deutsche Aussprachevariante ist, z.B. in Bayern. Trotzdem klingt gerolltes r immer ziemlich migrantisch, denn fast alle Migrantensprachen haben es" (Hinrichs 2013: 161).

2.4 Predictions

Since the sound change from an alveolar to a uvular place of articulation for the German /r/ is almost completed, the association of the alveolar place of articulation is expected to be stronger for elderly speakers than for young speakers. In addition to age, ethnic background is also expected to play a role since German ethnolects are characterized by an alveolar realization of the /r/. A third social variable, which is gender, has not been discussed yet and needs some elaboration. Males are expected to attract stronger associations with both a possible 'old Austrian' persona and 'migrant persona'. The expectation of a stronger association with the 'old Austrian' persona can be explained based on the observation according to which women are more "status-bound" than men which means that they will tend to converge more to what is considered to be a prestigious variant as compared to men in order to gain upward mobility (Eckert 1989: 256). In a situation of an almost completed sound change then, in which the innovative variant has become the standard and is more prestigious than the archaic variant, the latter can be expected to evoke stronger associations when pronounced by male speakers. The second expectation for a higher effect of males and a 'migrant' persona, is due to a male dominance in both, labor migrants in the 60s and 70s (Faßmann & Reeger 2008) and present-day refugees and asylum-seekers in Austria (Expertenrat für Integration 2018). Given this additional information about the variable of gender, associations concerning the pronunciation of the alveolar realization of the /r/ evoked by male speakers can be expected to be more salient.

Having discussed the social variables of age, ethnic background and gender, at least two hypotheses can be proposed. First, in the Austrian speech-community, a young man with a migrant-background[6] will spark stronger associations with alveolar realizations of the phoneme /r/ than a young Austrian man without a migrant background. This is because respondents are expected to associate the transfer of the alveolar realizations of /r/ from the first language of the young man with a visible migrant-background, which they are not expected to do for the case of the young man with no visible cues that point to having a migrant background,

[6] The term 'migrant background' here is a translation of the German 'Migrationshintergrund' and refers to an individual who was either born in a country other than Austria or was born in Austria but has parents who were not (Bundesanstalt Statistik Österreich 2008).

(see section 2.3, paragraph 2). Second, among elderly men this difference between ethnic backgrounds is expected to be weaker than among young men. This is because elderly 'Austrian-looking' [7] males may also be associated with alveolar realizations of the /r/ and since the sound change has not reached completion yet and the archaic variants correspond to the alveolar realizations. In addition, one may hypothesize that characteristics other than looks such as hobbies or everyday objects also become socially meaningful in forming the indexical field of the 'Austrian' and 'migrant' personae. Altogether, these potentially socially meaningful variables, including linguistic and non-linguistic ones, contribute to forming a 'style'.

Variation in the perception of these styles is also expected on the grounds of social profiles of the respondents. Elderly respondents born in Austria are expected to have stronger associations with an alveolar pronunciation by an elderly speaker and an Austrian persona than young respondents. This is because the former are believed to be more in touch with people of their own demographics and therefore also with elderly Austrian male speaker with alveolar realizations of the /r/. Finally, because relative to other Austrian federal states, more people with a migration background live in Vienna (Bundesanstalt Statistik Österreich 2019), respondents socialized in the capital are expected to behave differently from those participants residing in the rest of the country.

3 Methodology

The experimental design included a modified version of the matched-guise test, an indirect experimental methodology first carried out to determine language attitudes in Montreal (Lambert et al. 1960). In a matched-guise test speakers read out text passages in two different guises in which all but one linguistic feature remain constant. Listeners are aware that their attitudes

[7] Since a person with any type of physical traits can be Austrian the distinction employed in this study between 'Austrian-looking' and 'migrant-looking' might seem controversial or at least contradictory at first glance. However, if this distinction is not made for the purposes of this study, then unequal and potentially even discriminatory treatment on the basis of looks will go unnoticed and unstudied. Therefore, it is important to name this difference in the first place to be able to study it in a next step. This allows for testing this study's hypothesis, namely that this distinction on the basis of looks will be reflected in the respondents' answers.

are elicited, however, they are not told that they hear the same person twice in different guises and which linguistic feature the experiment investigates, which is why this technique has an 'indirect approach' (Garrett 2010). Typically, in such experiments, questionnaires (Mendes 2016) and open-response questions (Drager et al. 2019) or both in combination (Loureiro-Rodriguez et al. 2013; Pharao et al. 2014) are used. For this study, a combination of both quantitative and qualitative methods was employed in the form of a picture selection task for the matched-guise test and open-response questions respectively. Gathering qualitative data in an experimental study is advantageous since it allows for individually formed answers and therefore might provide richer results for a better understanding of the indexical field.

3.1 Stimuli

The experiment consisted of two parts followed by a demographic questionnaire. Recordings were only made for the first experiment.

3.1.1 Stimuli: experiment I

The first part of the experiment was a matched-guise test. It contained recordings of 40 words, of which half were experimental items and the other half fillers. The experimental items were all single words, including nouns (n = 12), verbs (n = 4) and adjectives (n = 4), which had an /r/ in onset position. The phonological environment of the onset was chosen because the coda position is dominated by vocalized variants of /r/, which is why any consonantal variant in this position could be perceived as excessively marked or even unnatural compared to the syllable onset. In the onset position half of the items was preceded by a consonant, also referred to as 'second member of the onset' (Davis & Baertsch 2011), and the other half was not and consequently occurred either word-initially or was preceded by a vowel. Recordings were initially made with five male individuals of which the two best-fitting sets of recordings were selected. This was decided on the basis of a clearly distinguishable younger and older sounding voice and the most natural sounding realizations of the phoneme under investigation. The two male native-speakers of Austrian German selected were 18 and 59 years old at the time of recording. They were recruited through personal contacts

and functioned as actors. Prior to the study, a pilot group of five individuals was asked to rate the ages of both speakers and they were approximately guessed their age, ranging from 20 to 25 and 50 to 60 respectively. Each of them was recorded reading 10 experimental items. They were instructed to pronounce half of them with an alveolar variant of /r/ and the other half with a uvular one. They received 12€ as compensation. Altogether, by crossing the variables of age and place of articulation as binary treated, one can distinguish four conditions (Table 1).

Tab. 1: Overview of Conditions

Independent Variable	*Condition I*	*Condition II*	*Condition III*	*Condition IV*
Place of realization of /r/	alveolar	uvular	alveolar	uvular
Age of speaker	younger	younger	older	older

Because the alveolar realization of the /r/ is a marked pronunciation, in the perception part of the study, it had to be avoided that the participating listeners understand that the experiment is investigating the pronunciation of the phoneme /r/ in specific. This is why half of the filler items were instructed to be read with marked realizations of other phonemes. These included the monophthongization of diphthongs, /l/-vocalization and /l/-darkening, typical for the Viennese dialect (Moosmüller & Brandstätter 2014; Moosmüller et al. 2015). Another set of marked fillers was instructed to be pronounced with a coronalization of the velar fricative ([ç] + [coronal] → [ʃ]), voicing of word-initial unvoiced /s/, and an epenthesis, the insertion of an additional vowel in onset consonant clusters. The last three phonological markers are characteristic for 'migrant speech', in original: 'Migrantensprache' (Hinrichs 2013). The remaining fillers (n = 10) were not pronounced in a marked manner and were read by the actors without specific instructions. A list of the experimental items and unmarked fillers and marked fillers be found in the appendix (Appendix A).

3.1.2 Stimuli: experiment II

The second part of the experiment contained two audio excerpts of 30 seconds (BeuysKanal 2012: 17:38) and 26 seconds (SagsMulti 2012: 0:44) each, which were retrieved from the internet. The former audio stems from a commentary by an at the time 39 years old Austrian art historian, artist and curator, raised in Upper Austria, during a round table on Austrian television. The latter audio is taken from a high school student's speech during a nation-wide speech competition to be held in one's native language and German. At the time of the recording the student is 20 years old and his native language is Serbian. In both recordings the speakers produce alveolar /r/s. Unlike in audios of single words, in the longer naturalistic speech extracts prosody and linguistic variables other than /r/ were not controlled for. This is why different from a matched-guise method, the second experiment is designed to reveal the more detailed associations concerning the persona style of a younger 'migrant-like' and an elderly 'Austrian-like' sounding man, both with marked alveolar realizations of the /r/. Here 'migrant-like' and 'Austrian-like' refer to any linguistic variety that is characterized by a set of linguistic variants indicative of a migrant persona and an Austrian persona. A list of the transcriptions of both audio excerpts can be found in the appendix (Appendix B).

3.2 Procedure

The online experiment was designed on the software *Qualtrics* and overall took 20 to 30 minutes to be completed. The order of the items in both parts of the experiment was randomized. The entire experiment was in German.

3.2.1 Procedure: experiment I

Participants were first presented with recordings of 40 words, pronounced by the two guises. Along with each recording, they were presented pictures of four men and were asked to match the voice to the picture. The pictures included a young 'migrant-looking' man with dark hair, a goatee without moustache, prominent eyebrows and chest hair, a young 'Austrian-looking' man holding a laptop, with blond hair, no facial hair and horn-rimmed

glasses, an elderly 'Austrian-looking' man wearing a traditional Austrian costume holding a beer stein, and an elderly 'migrant-looking' man standing in front of a taxi with a circle beard and dark eyes. The pictures include deliberate allusions to stereotypes in Austria, such as in the latter picture described with a taxi in the background. The profession of the taxi driver is often associated with migrants (Figure 1).

Picture a (Roffey 2006) | Picture b (Millenial 2018) | Picture c (Vacasa) | Picture d (Zweygarth 2016)

Figure 1: Pictures used in Experiment I

3.2.2 Procedure: experiment II

Since the social information that is transmitted by these pictures is limited to the visual, in the experiment's second part, participants were asked to answer four open-response questions (Table 2), two of which (Question 1, Question 2) were drawn from the study of Drager et al. (2019).

Tab. 2: Questions of Experiment II

Question 1	What three words would you use to describe this person's personality?
Question 2	Where do you think this speaker is from? (Please be as specific as possible)
Question 3	How do you imagine this person to look like? (e.g. age, skin color, hair color, facial hair, clothing, …)
Question 4	How do you imagine this person's character to be? (e.g. intelligent, unintelligent, modern, conservative, educated, uneducated, hobbies, …)

The questions aimed at capturing more generally what other social variables members of the Austrian speech-community associate with alveolar /r/s. Participants were instructed to evaluate the speaker's voices rather than focusing on the content of the speech sample. Lastly, because variation in the perception of the speakers' styles is expected on the grounds of respondents' social profiles (see section 2.4), the latter were asked to state their age, the gender they identify with, their length of residence in Austria, the Austrian state they have lived in the longest and their first language.

3.2.3 Participants

A total of 70 participants took part in this study. They were recruited via personal contacts and Facebook groups, which is why the sampling method was convenience sampling, while the only criterion to participate was to have lived in Austria for at least 10 years. Among them 43 self-reported as women and 23 as men, one participant identified as 'other' and 3 participants preferred not to answer. Their ages ranged from 18 to 75, with a mean age of 37.2. Based on Austrian generation research (Kolland et al. 2015), they were then classified into 3 age cohorts, namely 'generation y' (aged 18–33; n = 32), 'generation x' (aged 34–47; n = 17) and the 'baby boom generation' (aged 48+; n = 21). Of the respondents, 34 were L1 speakers and 36 were L2 speakers of German. They had lived most of their lives in the federal states of Vienna (n = 57), Lower Austria (n = 6), Tyrol (n = 3), Vorarlberg (n = 2), Burgenland (n = 1) and Styria (n = 1). The length of residence was in a further step organized in 3 categories (whole lifetime in Austria, and more or less than half of the lifetime in Austria). Respondents were given vouchers worth €6 as compensation.

4 Results

4.1 Results: experiment I

The quantitative part of this study aimed to investigate whether respondents select different pictures for the two guises of the younger and elderly speaker if the only changing linguistic variable is the realization of the phoneme /r/. In order to model the best predicting variables and their interactions for the selection of the pictures, the method of recursive

partitioning was employed to draw a random forest by using the 'party' package in R. The advantage of this non-parametric technique is that for data with few observations, many variables and complex interactions can be modelled (Tagliamonte & Baayen 2012). An overview of the picture selection of all respondents is shown in figure 2. In this visualization each of the four nodes with bar plots corresponds to one condition (Node 3 – Condition I [alveolar/younger], Node 7 – Condition II [uvular/younger], Node 4 – Condition III [alveolar/elderly], Node 6 – Condition IV [uvular/elderly]; see p. 50). The letters a, b, c and d refer to one of the 4 pictures used in the experiment (see p. 52). This first model, which takes into account the age of the speaker (elderly, young) and the pronunciation (alveolar, uvular), shows a significant difference between alveolar and uvular pronunciation for both age groups ($p < 0.001$). Furthermore, there is a clear preference for one picture in each condition. In the conditions with alveolar realizations, the pictures with the migrant-looking men were selected most often (Condition I: Picture a, Condition III: Picture d), whereas in the conditions with uvular realizations, the most selected pictures show 'Austrian-looking' men (Condition II: Picture b, Condition IV: Picture c). This indicates that despite the alveolar /r/ having been the standard pronunciation in Austria prior to the sound change, the variant's social meaning indexing elderly Austrians is weaker than its association with a migrant persona.

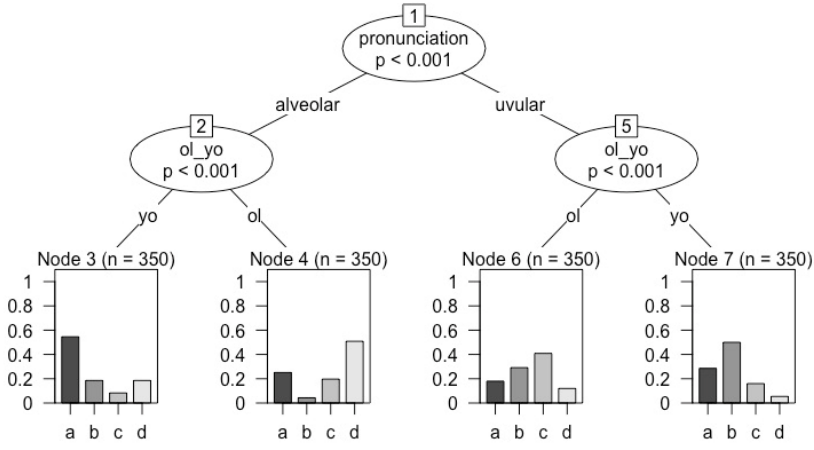

Figure 2: Conditional inference tree for pronunciation (alveolar, uvular), age (old [ol], young [yo]); scale from 0 to 1, 0 meaning picture was not selected, 1 meaning picture was selected by all 70 participants

In a next step, the importance of all predictors considered in this experiment was modeled with a permutation-based algorithm from the 'party' package in R (figure 3). The most important predictor for the picture selection is 'Condition' (see p. 50), which includes the 4 possible combinations of the two variables of speaker pronunciation and speaker age, which are listed as second as third most important predictors. Since the predictor of 'Pronunciation' (2 levels: alveolar, uvular) is higher than the one for 'Age' (2 levels: younger voice, older voice), the former has more predictive power for the picture selection than the latter. The social variables included in rank of predictive power are, from high to low, the respondents 'Generation' (3 levels: x, y, baby boom), their 'Length of residence' in Austria (3 levels: all their life, more than half, less than half), their 'First language' (2 levels: German, not-German), their 'Gender' (4 levels: female, male, other, no answer), the 'State in Austria' they have been residing in for the longest time (9 levels: the 9 Austrian federal states) and whether during the time living in Austria, they have mostly lived in 'Vienna' (2 levels: yes, no). Lastly, the model considers the linguistic variable of the 'Phonological environment' of the /r/ in onset position (2 levels: post-consonantal, not post-consonantal). In sum, apart from the two variables 'State in Austria' and 'Vienna', which as illustrated by the vertical grey line do not contribute to statistically significant effects, the remaining eight variables have some predictive power.

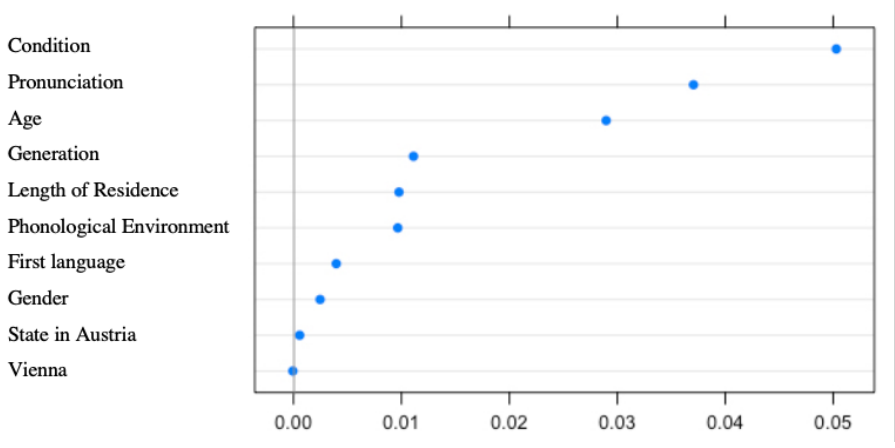

Figure 3: Variable importance of all predictors considered; x-axis = variable important scores (as indicated by blue dots*), y-axis = predictors (ranked from most to least significant [top to bottom])*

After modelling all predictors considered in this study in rank of importance, their interactions as a function of picture selection remain to be presented. For this purpose, the variables 'State in Austria' and 'Vienna' were excluded from the analysis because of their near-zero predictive power. The resulting interactions from this model are displayed below (Figure 4) and will be summarized by condition. For the alveolar pronunciation of the younger voice (Condition I), participants with German L1 patterned significantly different in their selection of pictures compared to participants with non-German L1 ($p = 0.045$). The former group selected 'Picture a' more often than the latter (0.6 vs. 0.5), which instead selected 'Picture b', the younger 'Austrian-looking' man, proportionally more often (0.25 vs. 0.1) (see section 5 for discussion). In case of the alveolar pronunciation of the older voice (Condition III), among the respondents who have not lived all their life in Austria, generation x (aged 34–47) behaved differently in their picture selection from the youngest (18–33) and the oldest generation (48+) ($p = 0.018$). The former generation selected 'Picture d', the elderly migrant-looking man (0.7), more often than the latter two (0.35), which preferred 'Picture a' (0.2 vs. 0.14), 'Picture b' (0.1 vs. 0.02) and 'Picture c' (0.35 vs. 0.14) (see section 5 for discussion). In Condition III, the older alveolar speaker, a further significant difference has been detected for L1 and non-L1 speakers of German ($p = 0.005$). However, this difference seems to concern the perception of the speaker's age, rather than the perception of their 'migrantness', since the sums for 'Picture a' and 'Picture d' for both groups are the same (0.85). For the uvular pronunciation of the older voice (Condition IV), a generational significance was detected, according to which the younger generations y and x estimated the voice to be older ($c = 0.45$, $d = 0.15$) and the older baby boom generation (bb) the voice to be younger ($a = 0.25$, $b = 0.4$). Compared to the two younger generations (x, y), the latter generation (bb) selected the pictures showing migrant-looking men (Picture a, Picture d) proportionally more often than those showing Austrian-looking men (Picture b, Picture d) ($0.3 < 0.35 = a+d(x,y) < a+d(bb)$). As far as the younger voice and the uvular pronunciation (Condition II) is concerned, there were no significant differences in responses by participants within this condition.

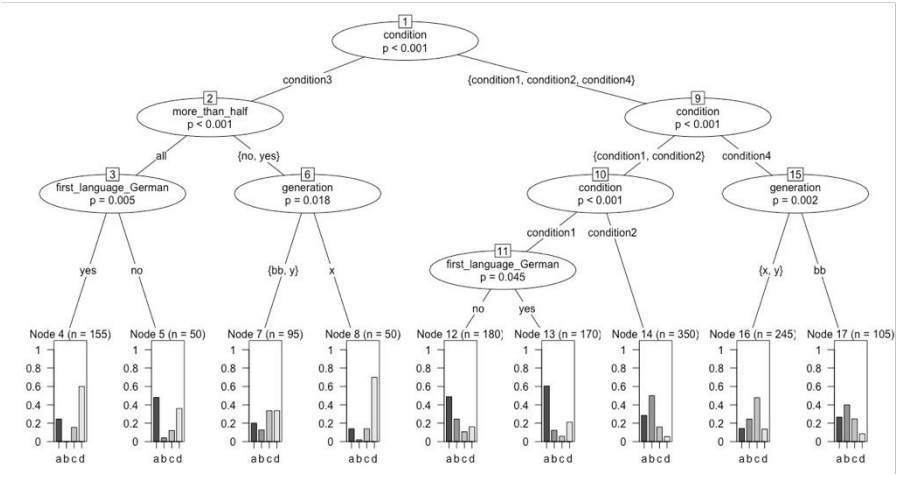

Figure 4: Conditional inference tree for condition (1–4), pronunciation (alveolar, uvular), age (old, young), generation (bb, x, y), length of residence (whole, more than half or less than half of life), phonological environment (post-consonantal, not post-consonantal), first language German (yes, no) and gender (f, m, other, no answer); scale from 0 to 1, 0 meaning picture was not selected, 1 meaning picture was selected by all 70 participants

4.2 Results: experiment II

The results of this study's qualitative data collection are graphically presented in the form of tag clouds. Previously employed in sociolinguistic research (Drager et al. 2019), this form of visualization reminds of a 'field' and therefore seems particularly suiting to highlight socially meaningful variables which form an indexical field. More specifically, this illustration contributes to answering the question which iconic links exist in the Austrian speech-community between an alveolar pronunciation of the phoneme /r/ and social concepts and categories. This question will be answered for two social profiles, namely a young man with a different L1 than German and an elderly man with German as L1. For both audio samples, the answers to the set of four questions were summarized in a single figure. The fifty most frequently mentioned keywords are displayed. Having said that, some very detailed comments which were only stated by single respondents will nonetheless be mentioned. Similar descriptions were grouped together under a representative umbrella term. For example, words

such as 'restless', 'agitated', 'tense' and 'hectic'[6] were grouped under the term 'hectic'[8]. It has to be noted that the examples for types of physical traits in question 3 and the adjectives for personality traits in question 4 have primed respondents to use these types and adjectives in their open responses. Finally, it has to be noted that respondents were explicitly instructed to assess the speakers' voices only, rather than focusing on the content of their speeches. This has the limitation that in this second part of the experiment respondents' answers were elicited under heightened consciousness and presumably filtered through what they thought was appropriate or inappropriate to write.

4.2.1 Younger voice

In the first audio a 20-year-old man with a Serbian L1 and German L2 can be heard (Figure 5). Respondents mostly believed the speaker to be between twenty and thirty years old. Most of them assumed he was from Turkey, followed by Germany and a migrant background from Former Yugoslavia on a par, the Balkans and Vienna on a par and Austria. One respondent even remarked that because of his pronunciation of the /r/ he certainly is a migrant. More respondents imagined the speaker to have a dark complexion, dark hair and dark eyes rather than a lighter complexion and fair hair, indicative of a migrant background from Western Asia. In terms of style, listeners believed him to have a polished and well-groomed appearance, wearing stylish and sportive to casual clothes. The sportswear brand 'Adidas' was explicitly mentioned by two respondents. Concerning his hobbies, mainly two common themes stand out, namely an interest in sports and cars. He is described as a dynamic and sportive person who likes to play football. Four respondents had the association with the automobile brand 'BMW', of which one of them specified that he has a preference for white and low BMWs. Next to the association with this particular brand, three respondents also mentioned that he is working as a car mechanic. With regards to his mental capacities, he is described with the adjectives intelligent and educated, both of which were included as examples in the questionnaire. Some respondents furthermore specified that he is, however,

[8] Original words in German as stated by respondents: unruhig, aufgeweckt, unentspannt, hektisch.

not receiving university education and some others proposed that he is in vocational training.

Figure 5: Tag cloud for open-response answers for young speaker with alveolar /r/ and non-German L1

4.2.2 Older voice

The second naturalistic audio extract with an alveolar /r/ stems from an elderly German L1 speaker, who has retained the archaic realization of the phoneme. Participants were asked the same set as questions as in the first audio of experiment two. One respondent's answers were excluded since he surprisingly recognized the art historian's voice and stated his name in the answer. The visualization of the associations shows that compared to the formerly discussed younger speaker, in this case, the respondents were shorter in their answers, which is why key words that were only mentioned three times are also shown (Figure 6). The speaker that can be heard is 39 years old and is estimated to be slightly older by the majority, namely between forty to fifty years old or even older than fifty. As for place of origin,

participants have mostly indicated Vienna and Austria, followed by Germany, Austrian with a migrant background and Carinthia. They mostly imagine him to have fair skin and grey or dark hair, no facial hair and to weigh more than average. By some he is perceived as confident and ambitious and by others as arrogant and bossy. The adjectives *hectic*, *nervous*, *fast* and *unclear* refer to the prosody which is characterized by a high speech tempo and short pauses. Lastly, three descriptions in particular are worth highlighting since they are noticeably detailed. Concerning his clothing, respondents specified that the speaker is wearing cloth pants, answers including 'brown corduroy trousers' and 'suit trousers', and a 'partly unbuttoned shirt'. Four responses included the word 'alteingesessen', which can be translated as 'native resident', 'old-established' or 'indigenous'.

Figure 6: Tag cloud for open-response answers for elderly speaker with alveolar /r/ and German L1

5 General discussion

The main objective of this study was to understand what the different social meanings associated with alveolar realizations of the /r/ in difference to uvular ones are in the Austrian speech-community. A subsequent question was whether these associations vary within the speech-community, and if they do, what demographic factors this variation depends on. This section will first aim to answer the main research question and the initial predictions. Subsequently, connections between some noteworthy responses of the experiment's open-response questions will be related to the literature on 'style as distinctiveness' (Irvine 2002) and 'the indexical field' (Eckert 2005, 2008). Before concluding, the answer to the initial research question will be discussed against the background of the sound change of /r/ in German.

In line with one of the main predictions, the results of the matched-guise test demonstrate that a young male will be associated stronger with a migrant persona if he has alveolar /r/ realizations instead of uvular ones. Contrary to the initial prediction, the results for the elderly male speaker do not demonstrate that alveolar /r/ realizations are being associated equally between an Austrian persona and a migrant persona. They rather indicate, similar to the younger speaker, stronger associations with the migrant persona. Given these results for the older speaker in the matched-guise test, it seems particularly interesting to highlight comments on the origin of the elderly speaker with German L1 and alveolar /r/ realizations in the second experiment with open-response answers. Overall, fifteen respondents did not think him to be a native speaker of German, but instead to have roots in Eastern Europe or Western Asia. This association, taken together with the results of the matched-guise test, might be an indication that an alveolar realization of the /r/ has more generally become a variable indexing 'migrantness'. In this respect, the results of the open-response answers seem to be in line with the findings of the matched-guise test.

Responses to the younger speaker with alveolar realizations in the experiment's second part add another nuance to indexing 'migrantness'. The speaker has a Serbian L1 and German is his L2. The majority of the respondents did not believe him to be born in Austria, however, their opinions were split with regard to his place of origin. While fifteen respondents thought he was a first or second generation immigrant from the Balkans, thirteen of them stated that they believed him to be from Turkey.

Thus, although the speaker is a second generation immigrant from Serbia, almost half of the respondents believe him to be from Turkey. This raises the question whether there are further linguistic markers, other than the alveolar pronunciation of the /r/, that help to construe a generic 'migrant persona' in the Austrian speech-community, a hypothesis very much in line with Eckert's (2008) indexical fields. In addition, one might ask whether the perceptual link between alveolar /r/ and a Turkish migrant persona is stronger than between the former and the Former Yugoslavia migrant persona.

It should be brought to the reader's attention that both experiments in this study analyzed different variants of the phoneme /r/ as pronounced by male speakers, with the reasoning that if there was to be found a significant effect, the best chances were to find one among male speakers. Since the results of experiment I show a significantly higher association between male speakers and a migrant persona when the former realize alveolar variants, another study to test this effect for female speakers would be necessary. At the same time, this would also allow for testing this study's presupposition, namely that for female speakers in the alveolar guise the association with a migrant persona will be overall weaker than it is for men in the same condition.

With regard to predictions concerning the respondents' social profile, elderly respondents who were born in Austria did not select the Austrian-looking elderly man more often when they heard the older speaker with alveolar /r/ realizations (Condition III). In the same condition, however, a significant generational difference was detected among the respondents who have not lived all their lives in Austria. Respondents aged 34 to 47 selected the migrant-looking elderly men standing in front of a taxi more often than younger or older respondents. This points to a generational difference among respondents who were not born in Austria. One might hypothesize that is because 34- to 47-year-olds have spent more time working in the Austrian job market than the younger and older generation. Compared to the former they potentially have spent more years being part of the workforce and compared to the latter they have done so for a longer period of time in Austria. This might indicate that they are more familiar or confronted with migrants being employed in the taxi industry. The second prediction was not confirmed either. Whether people had lived most of their lives in Vienna or in another Austrian state was not a predictive variable. According to the quantitative experiment's results then, geographically

speaking, the Austrian speech-community seems to be homogenous. It should be noted, however, that this data is based on 70 participants out of whom only 13 were from elsewhere than Vienna.

Although the two predictions concerning the interactions between the respondent's social profile and a potentially different patterning in picture choice were not confirmed, a noteworthy interaction was found by the statistical model. In the case of the younger speaker with alveolar /r/ realizations (Condition I), the picture of the migrant-looking man was matched more often to it by respondents with German L1 than by respondents with a different L1 than German. This might be an indication for the alveolar realization being a stronger marker for 'migrantness' for non-migrants. One might hypothesize that this is because first or second generation immigrants with a non-German L1 have a more differentiated and inside-group view on the group of 'migrants' than non-migrants. In other words, for the former, the alveolar /r/ might be less of a generic marker of 'migrantness', but only characteristic for some migrant speeches.

After discussing respondents' social profiles, the notions of 'persona style' (Eckert 2008) and 'style as distinctiveness' (Irvine 2002) seem particularly helpful to understand what is meant by the notion of 'migrantness'. Hereto the responses to the Serbian L1 speaker are revealing. Respondents explicitly used the word 'style' ('Stil' in German), to describe him as someone with a stylish look and stylish hair. Stylistic elements furthermore included the answers 'sportive look', 'designer stubble' and 'BMW', all of which were mentioned multiple times. Comparatively specific responses referring to non-physical characteristics included him not having a university education but instead receiving vocational training, him playing football and being a macho. Combining these physical and non-physical traits, a distinct combination of elements emerges which becomes socially meaningful in the indexical field of the migrant persona as these elements are practiced and reenacted in everyday life (Eckert 2005). Thus, it is a combination of the alveolar realization of the /r/, potentially other characteristic linguistic variables and the abovementioned non-linguistic variables which altogether form a style characteristic for the 'migrant persona'.

Having applied the notion of style to this case study, the results remain to be interpreted in the context of a near complete sound change in which alveolar variants have become archaic. This will help to understand how the variants have socially embedded in the speech-community. The first records

of the sound change dating to the 16th century and its advancement in the 20th century predate the arrival of so-called guest workers which peaked in the mid-1970s and subsequent family reunifications peaking in the 1980s (Faßmann 2016). In this light, the results furthermore indicate that the social meaning of the alveolar realization of the /r/ has changed over time within the Austrian speech-community. This is because for the sound change to have already advanced before members with non-German L1s entered the speech-community, the alveolar variants [r] and [ɾ] must have already taken on a social meaning. This change of social meaning over time underpins the idea of indexicalities as a dynamic, in that they originate from a specific point in time and are subject to change (Eckert 2008). The question remaining open is whether this social resignification of the alveolar variants to becoming markers for 'migrantness' has influenced the pace of the ongoing sound change. One might hypothesize that there is a causative relationship between the arrival of the guest workers in the 70s and the particular acceleration of the sound change towards the end of the 20th century as described in the literature (Ulbrich & Ulbrich 2007). This, however, is only a speculative explanation.

6 Conclusion

This study can be viewed as an example for how the social significance of linguistic variables can take on different social meanings over time. The way in which the sound change of the linguistic variable /r/ has been socially embedding in the Austrian speech-community is apparent in the innovative variants, since they have become unmarked. The social meaning of the archaic variants in the sound change, however, has changed over time, introduced by non-L1 speakers of German with linguistic transfers from their L1s. The results indicate that an alveolar place of articulation of the phoneme /r/ in the syllable onset as pronounced by male speakers is a marker for 'migrantness' in the Austrian speech-community.

References

Auer, Peter. 2013. Ethnische Marker im Deutschen zwischen Varietät und Stil. In Arnulf Deppermann (ed.), *Das Deutsch der Migranten*, 9–40. Berlin & Boston: De Gruyter.

Berend, Nina. 2013. Varietätenwandel im Kontakt: Die Entwicklung des Sprachgebrauchs deutschsprachiger Minderheiten im bundesdeutschen Kontext. In Arnulf Deppermann. (ed.), *Das Deutsch der Migranten*, 81–112. Berlin & Boston: De Gruyter.

BeuysKanal. 2012. Joseph Beuys im 'Club 2' (1983) [Video file]. *Youtube.com* (12 July). *https://www.youtube.com/watch?v=J6pS7H_24CE&t=7430s* (accessed 20 December 2020).

Bundesanstalt Statistik Österreich. 2008. *In Österreich leben 1,4 Mio. Menschen mit Migrationshintergrund*. http://www.statistik.at/web_de/presse/032181.html (accessed 20 December 2020).

Bundesanstalt Statistik Österreich. 2019. *Bevölkerung mit Migrationshintergrund nach Bundesländern (Jahresdurchschnitt 2018)*. https://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bevoelkerung/bevoelkerungsstruktur/bevoelkerung_nach_migrationshintergrund/033241.html (accessed 20 December 2020).

Davis, Stuart. & Baertsch, Karen. 2011. On the relationship between codas and onset clusters. In Charles E. Cairns & Eric Raimy (eds.), *Handbook of the syllable*, 71–98. Leiden & Boston: Brill.

D'Onofrio, Annette. 2018. Personae and Phonetic Detail in Sociolinguistic Signs. *Language in Society* 47(4). 513–539. doi:10.1017/S0047404518000581.

Drager, Katie, Kate Hardeman, Rachel Schutz & Ivan Chik. 2019. Perceptions of Style: A focus on fundamental frequency and perceived social characteristics. In Lauren Hall-Lew, Emma Moore & Robert J. Podesva. (eds.), *Social Meaning and Linguistic Variation: Theorizing the Third Wave.* Manuscript submitted for publication. Cambridge: Cambridge University Press.

Eckert, Penelope. 1989. The whole woman: Sex and gender differences in variation. *Language Variation and Change* 1. 245–267. doi:10.1017/s095439450000017x.

Eckert, Penelope. 2005. Variation, convention, and social meaning. Paper presented at the Annual Meeting of the Linguistic Society of America, Oakland CA, 7 January 2005.

Eckert, Penelope. 2008. Variation and the indexical field. *Journal of Sociolinguistics* 12(4). 453–476. doi:10.1111/j.1467-9841.2008.00374.x.

Eckert, Penelope. 2019. The individual in the semiotic landscape. *Glossa: A journal of* general *Linguistics* 4(1): 14. 1–15. doi:10.5334/gjgl.640.

Expertenrat für Integration. 2018. *Integrationsbericht 2018: Zahlen, Trends und Analysen – Integration von Frauen im Fokus*, 1–109. Vienna: Bundesministerium für Europa, Integration und Äußeres. www.bmeia.gv.at/integration/integrationsbericht (accessed 20 December 2020).

Faßmann, Heinz & Ursula Reeger. 2008. Austria: From guest worker migration to a country of immigration. *IDEA Working Papers* 1. 1–39.

Faßmann, Heinz. 2016. Zuwanderung nach Österreich. Integrationspolitische Herausforderungen. *Österreichisches Religionspädagogisches Forum* 24(2). 9–15. doi:10.25364/10.24:2016.2.2.

Garrett, Peter. 2010. Introduction. In Peter Garrett (ed.), *Attitudes to Language: Key Topics in Sociolinguistics*, 1–18. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511844713.003.

Garrett, Peter. 2010. Main approaches to the study of language attitudes. In Peter Garrett (ed.), *Attitudes to Language: Key Topics in Sociolinguistics*, 37–52. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511844713.003.

Hall, Tracy Alan. 1993. The Phonology of German /R/. *Phonology* 10(1). 83–105. doi:10.1017/S0952675700001743.

Hinrichs, Uwe. 2013. *Multi-Kulti-Deutsch. Wie Migration die deutsche Sprache verändert*. München: C.H.Beck.

Irvine, Judith. T. 2002. "Style" as distinctiveness: The culture and ideology of linguistic differentiation. In Penelope Eckert & John R. Rickford (eds.), *Style and Sociolinguistic Variation*, 21–43. Cambridge: Cambridge University Press.

Kolland, Franz, Anna Wanka, Christian Bischof & Sophie Psihoda. 2015. *Von den Baby Boomern zur Generation Y: Tipps für erfolgreiches Generationsmanagement.* Wien: Wirtschaftskammer Wien.

Labov, William. 1972. *Sociolinguistic Patterns*. Philadelphia: University of Pennsylvania.

Lambert, Wallace E., Richard C. Hodgson, Robert C. Gardner & Samuel Fillenbaum. 1960. Evaluational reactions to spoken Languages. *Journal of Abnormal and Social Psychology* 60. 44–52. doi:10.1037/h0044430.

Loureiro-Rodriguez, Veronica, May M. Boggess & Anne Goldsmith. 2013. Language attitudes in Galicia: using the matched-guise test among high school students. *Journal of Multilingual and Multicultural Development* 34(2). 136–153. doi:10.1080/01434632.2012.729591.

Mendes, Ronald Beline. 2016. Nonstandard Plural Noun Phrase Agreement as an Index of Masculinity. In Erez Levon & Ronald Beline Mendes (eds.), *Language, Sexuality, and Power: Studies in Intersectional Sociolinguistics*, 105–129. New York: Oxford University Press.

Mentrup, Wolfgang. 1980. Deutsche Sprache in Österreich und in der Schweiz. In Hans Peter Althaus, Helmut Henne & Herbert Ernst Wiegand (eds.), *Lexikon der germanistischen Linguistik* 2, 527–531. Tübingen: Niemeyer.

Moosmüller, Sylvia. 2002. Der Stellenwert der phonologischen und phonetischen Variation in der Spracherkennung. In Angelika Braun & Herbert R. Masthoff (eds.), *Phonetics and its Applications*, 97–109. Stuttgart: Steiner.

Moosmüller, Sylvia & Julia Brandstätter. 2014. Phonotactic information in the temporal organization of Standard Austrian German and the Viennese dialect. *Language Sciences* 46. 84–95. doi:10.1016/j.langsci.2014.06.016.

Moosmüller, Sylvia, Carolin Schmid & Julia Brandstätter. 2015. Standard Austrian German. *Journal of the International Phonetic Association* 45(3). 339–348. doi:10.1017/S0025100315000055.

Pharao, Nicolai, Marie Maegaard, Janus S. Møller & Tore Kristiansen. 2014. Indexical meanings of [s+] among Copenhagen youth: Social perception of a phonetic variant in different prosodic contexts. *Language in Society* 43(1). 1–31. doi:10.1017/S0047404513000857.

Runge, Richard M. 1973. The Phonetic Realization of Proto-Germanic /r/. *Zeitschrift für Vergleichende Sprachforschung* 87(2). 228–247.
SagsMulti. 2012. Samir Jukić, Serbisch [Video file]. *Youtube.com* (10 February). https://www.youtube.com/watch?v=IRjCmUVCWLo (accessed 20 December 2020).
Schiller, Niels O. 1999. The phonetic variation of German /r/. In Matthias Butt, Nanna Fuhrhop, Friedhelm Debus, Ulrich Knoop, Wolfgang Putschke, Ludwig E. Schmitt & Herbert E. Wiegand (eds.), *Variation und Stabilität in der Wortstruktur: Untersuchungen zu Entwicklung, Erwerb und Varietäten des Deutschen und anderer Sprachen*, 261–287. Hildesheim: Georg Olms.
Schrambke, Renate. 2010. Realisierungen von /r/ im Alemannischen Sprachraum. *Dialectologia et Geolinguistica* 18(1). 52–72. doi:10.1515/DIG.2010.004.
Tagliamonte, Sali A. & R. Harald Baayen. 2012. Models, forests, and trees of York English: Was/were variation as a case study for statistical practice. *Language Variation and Change* 24. 135–178. doi:10.1017/S0954394512000129.
Ulbrich, Christiane & Horst Ulbrich. 2007. The Realisation of /r/ in Swiss German and Austrian German. *Proceedings of ICPhS* 16. 1761–1764.
Vremšak-Richter, Vanda. 2010. Unterschiede zwischen den deutschen Aussprachewörterbüchern: Großes Wörterbuch der deutschen Aussprache (1982), Duden. Aussprachewörterbuch (2005), Deutsches Aussprachewörterbuch (2009). *Za Tuje Jezike* 2(1–2). 93–99.
Weinreich, Uriel, William Labov & Marvin I. Herzog. 1968. Empirical Foundations for a Theory of Language Change. In Winfred P. Lehmann and Yakov Malkiel (eds.), *Directions for Historical Linguistics: A Symposium*, 95–188. Austin: University of Texas Press.
Wiese, Heike. 2012. *Kiezdeutsch: ein neuer Dialekt entsteht*. München: C.H. Beck.
Wiese, Richard. 2003. The Unity and Variation of (German) /r/. *Zeitschrift für Dialektologie und Linguistik* 70(1). 25–43.

Images

Millennial, Buro. 2018. [Online image: Untitled illustration of young man using a laptop]. *Pexels.com. https://www.pexels.com/photo/selective-focus*-photo-of-man-using-laptop-1438081/ (accessed 5 May 2019).
Roffey, C. 2006. [Online image: Working men in Istanbul – three]. *Flickr.com*. https://www.flickr.com/photos/charlesfred/227002453 (accessed May 5 2019).
Vacasa. [Online image: Untitled illustration of man holding a beer stein]. *Pinterest.at.* https://www.pinterest.at/pin/40813940353153753/ (accessed 5 May 2019).
Zweygarth, Achim. 2016. [Online image: Talip Özdemir fährt seit zwölf Jahren in Stuttgart Taxi]. *Stuttgarter-nachrichten.de.* https://www.stuttgarter-nachrichten.de/inhalt.kriselnde-branche-in-stuttgart-taxifahrer-kaempfen-mit-vielen-problemen.41ea5942-275f-4da4-800a-fd3d8affea27.html (accessed 5 May 2019).

Appendix A: Items used in Experiment I

Experimental Items

Condition I			
Word	*IPA (as in experiment)*	*Post-consonantal*	*Translation*
Beratung	bə.'ra:tʊŋ	no	counseling
Brücke	'brʏ.kə	yes	bridge
Problem	pro.'ble:m	yes	problem
bringen	'brɪn.ŋən	yes	to bring
krank	kraŋk	yes	sick
Condition II			
Word	*IPA*	*Post-consonantal*	*Translation*
Grund	gʀʊnt	yes	reason
Richter	'ʀɪç.tɐ	no	judge
Rucksack	'ʀʊk.zak	no	backpack
überreden	y:bɐ.'ʀe:dən	no	to convince
richtig	'ʀɪç.tɪk	no	right
Condition III			
Word	*IPA*	*Post-consonantal*	*Translation*
Beruf	bə.'ru:f	no	profession
Charakter	ka.'rak.tɐ	no	character
Risiko	'ri:zi.ko	no	risk
befragen	bə.'fra:gən	yes	to ask sb
zurück	tsu:'ʀʏk	no	back
Condition IV			
Word	*IPA*	*Post-consonantal*	*Translation*
Bereich	bə.'ʀaɪç	no	area
Krippe	'kʀɪ.pə	yes	nursery
Strand	ʃtʀant	yes	beach
schreiben	'ʃʀaɪ.bən	yes	to write
zufrieden	tsu.'fʀi:dən	yes	satisfied

Fillers

Younger speaker			
Word	*IPA*	*Pronunciation*	*Translation*
Kind	kɪnt	unmarked	child
Küche	'kʏ.çə	unmarked	kitchen
Suppe	'zʊ.pə	unmarked	soup
lernen	'lɛɐ̯ .nən	unmarked	to learn
aufmerksam	'ɑo̯f.mɛɐ̯ k.sa:m	unmarked	attentive
Haus	hɒ:s	monophthongization	house
Feier	'fæ:ɐ	monophthongization	celebration
kaufen	'kɒ:fən	monophthongization	to buy
Sonnenlicht	'zɔ.nən.lɪʃt	coronalization of velar fricative	sunlight
spät	ʃə'pɛ:t	epenthesis [ə]	late
Older speaker			
Word	*IPA*	*Pronunciation*	*Translation*
Fenster		unmarked	window
Pflanze	'pflan.tsə	unmarked	plant
lesen	'le:zən	unmarked	to read
suchen	'zu:xən	unmarked	to search
gefährlich	gə.'fɛɐ̯ .lɪç	unmarked	dangerous
Auto	'ɒ:to	monophthongization	car
Leiter	'ɬæ:tɐ	monophthongization, dark /l/	ladder
außerhalb	'ɒ:sɐ.hɔɐ̯p	monophthongization, /l/-vocalization	
Schnitzel	'ʃə.nɪ.tsəl	epenthesis [ə]	schnitzel
Teppich	'tɛ.pɪʃ	coronalization of velar fricative	carpet

Appendix B: Transcriptions of audio excerpts used in Experiment II

These are the excerpts used in the experiment's second part with open-response questions. They were annotated in Jeffersonian transcription. The r's with greyed shading indicate alveolar realizations of the phoneme /r/ in onset position, which includes the sounds [r] and [ɾ].

Audio 1 [26'']: Younger 'migrant-sounding' speaker
einige Menschen fühlen sich in der Natur frei wenn sie durch den Wald gehen (.) andere hingegen verstecken sich jeden Tag in ihren schönsten Kleidern (.) schminken und stylen ihre Haare auf und spazieren durch die Stadt (.) aber sie wissen (.) wenn sie wieder nach Hause kommen erwartet sie der Alltag (.) doch in den paar Stunden in denen sie draußen sind fühlen sie sich frei (.) einfach nur frei (.) doch waren wir nicht als kleine Kinder frei (.) wir rannten herum spielten stritten machten dreckig und es war uns egal wer was sagte

Audio 2 [30'']: Elderly 'Austrian-sounding' speaker
a: hh na (.) der Runge na (.) dessen Bilder versteht heute keiner mehr na (.) weil der hat eine derartige Farbsymbolik gehabt dass und mit (Lilien) und so weiter dass heute (.) die Bilder sieht man (.) man versteht sie nicht (.) man muss auch hier wiederum .hh lernen was die Farbsymbolik bedeutet (.) .hh Abend (.) Mittag (.) .hh a Früh (.) .hh die verschiedenen Farben (.) rot blau und so weiter (.) wie das dem Gott zugeordnet ist den Engeln und solche Dinge na (.) also diesen Konflikt (.) .hh den Sie .hh hier ansprechen (.) die andere Darstellung der Realität durch den Künstler (.) .hh das ist ein kruzialer Fakt na (.) und .hh darauf- und daraus kommt auch dieses Unbehagen was manche Leute haben dann na

Jeffersonian Transcription System

(.)	brief interval (0.08'' – 0.2'')
:	prolonged vowel or consonant
.hh	inbreath
(word)	indicates an uncertain word