

Book of abstracts

**Experimental Approaches to Perception  
and Production of Language Variation  
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## **Is Low German still alive? Reflections on how to measure the vitality of lesser used languages**

Astrid Adler, Institut für Deutsche Sprache (IDS)  
Andrea Kleene, University of Southern Denmark

Low German is a regional language spoken in the Northern part of Germany. It is recognised and formally protected as well as promoted by the “European Charter for Regional or Minority Languages”. However, Low German is often said to be an endangered or at least vulnerable language. To evaluate the current status of Low German and its development one tries to provide statistics on the number of speakers. There have been three surveys so far collecting representative data on active and passive proficiency in Low German: in 1984 (cf. Stellmacher 1987), in 2007 (cf. Möller 2008) and in 2016 (cf. Adler et al. 2018). According to the respective figures Low German is in decline. But the question is what determines a language’s or dialect’s vitality? The number of speakers is most certainly an important aspect of this assessment but still, there are surely other aspects involved.

In our talk, we will present different means of how one can measure a language’s vitality. Then, we will describe our own approach. It consists of several parts. Firstly, the already mentioned representative survey provides statistics on active and passive proficiency. Secondly, this survey also supplies how current attitudes on Low German are. These two aspects are thirdly being complemented by three studies on special domains of Low German’s use, i.e. Low German on the broadcast, Low German theatres and Low German in kindergartens. The results of these three studies help shedding light on special aspects that cannot be covered by a representative survey. Finally, we will show how by connecting all these results one can assess the current status of Low German. Ultimately, this approach can/might also be used in different language contexts.

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## How to measure acceptance? On cases of doubt in German

Astrid Adler, Albrecht Plewnia, Institut für deutsche Sprache, Mannheim

To express certain concepts speakers and writers of German may be able to choose between different variants – even in Standard German. There are, for example, some prepositions that vary as to the case they govern. For instance, the prepositions *trotz* („despite“) and *wegen* („due to“) may govern the genitive (*trotz des Regens*, *wegen des Regens*) or the dative (*trotz dem Regen*, *wegen dem Regen*) (cf. Wöllstein 2016: 624). This variation can i.a. be described in terms of grammaticality and acceptability – especially as they represent very prominent instances of grammatical cases of doubt (cf. Hennig 2017, Hundt 2005, Köpcke 2011). As such they play a dominant role in discourses on correct language.

In our paper, we will present what people in Germany think about some of these variants. We will use brand new results of a national and representative survey, i.e. the Germany Survey 2018 (Adler/Plewnia 2019), that was conducted as part of the German Socio-Economic Panel (SOEP) which is a wide-ranging representative longitudinal study of private households, located at the German Institute for Economic Research (DIW) Berlin. This survey collected data i.a. on language repertoire and language attitudes of 4,339 German residents. The respondents also rated a set of linguistic variants. The variants were presented by using a methodological split (audio stimuli vs. written stimuli). The depth of the data allows for differentiation between the raters according to different aspects, for example sociodemographic factors as age and level of education – thus, a differentiation of proper laymen and linguistic professionals is equally possible; respondents can also be differentiated according to other language attitudes. In conclusion, we will compare the findings of our representative survey to those of former studies on the subject.

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## **Whereof one cannot speak: How language and capture of visual attention interact**

Ulrich Ansorge, Florian Goller, Soonja Choi, University of Vienna, Austria  
Uphong Hong, Konkuk University, Seoul, Korea

Our research addresses the question whether language influences cognition. Some researchers believe that language shapes cognition and, thus, language should influence performance in nonlinguistic tasks (e.g., Lupyan, 2012; Winawer et al., 2007). However, others argued that language should only influence cognitive performance where linguistic processing is task-relevant (e.g., Hüttig et al., 2011; Landau et al., 2010). Here, we investigated if visual nonlinguistic stimuli that correspond to concepts that are pervasively and semantically emphasized in the particular language one speaks distract the viewer's attention during visual search. Korean grammatically distinguishes between tight- (kkita) and loose-fit (nehta) containment whereas German collapses them into a single semantic category (in). Although, linguistic processing of containment was neither instructed nor necessary when our participants searched for color-defined targets (e.g., red stimuli), we found that Korean speakers were distracted by a stimulus that stood out by the grammaticalized distinction, that is, spatial fitness (i.e., a depiction of a peg surrounded by a tight-fit or loose-fit cylinder), whereas German speakers showed no distraction to the fitness feature. (Sample sizes in each language group ranged between 23 and 32 participants in each of altogether four experiments.) We pinpoint these differences to language-specific spatial grammar and semantics. We come to such conclusion by systematically ruling out other possible explanations for the group differences, for example, cultural differences in terms of a general visual processing ability (e.g., Asian holistic vs. Western analytic processing style; Nisbett & Miyamoto, 2005) or perceptual difficulty for German speakers to categorically distinguish between tight- and loose-fit. We also outline the mechanisms underlying this far-reaching language effect on nonlinguistic cognition: a higher sensitivity through language learning for features that have to be persistently discriminated for the selection of correct linguistic descriptions (cf. Lupyan, 2012).

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## The influence of algorithms on dialect classification results

Gotzon Aurrekoetxea, Lorea Unamuno, Ariane Ensunza, University of the Basque Country

In dialectology one of the most fruitful research lines is the classification of dialectal varieties and the creation of dialectal maps. With the appearance of dialectometric methods and the use of large masses of data has gained in the reliability of these classifications.

The use of deterministic cluster methods has shown that in some cases these methods present certain stability problems. On the one hand, in certain cases the change of a few data set different results. On the other hand, the use of different algorithms provides divergent results (Heeringa, Nerbonne & Kleiweg 2000).

Using data from the verbal morphology of the Basque language, results of several cluster deterministic analysis are presented in this investigation, based on different algorithms (Ward, Complete Linkage, Average Linkage), and fuzzy cluster to study the incidence of each of them in the configuration of the dialectal classification of Basque.

On the one hand, the research shows that the hierarchical analysis is reliable when we get the same or very similar classifications by using different algorithms, and when there is not difficulty to set cluster quantities. Nevertheless, when that does not occur –as with the results obtained from our data–, other analyzes need to be added. For example, Ward and Average come together with RIV measure but differ considerably with Levenshtein distance ((Goebel 1992, Heeringa 2004, Aurrekoetxea 2016). According to basque dialects, the fuzzy clustering analysis confirms that the set that separates first on the hierarchic cluster is very far from the rest and, at the same time, there are difficulties to separate the other varieties on different sets.

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## Loss of Historical Phonetic Contrast Across the Lifespan: Articulatory, Lexical and Social Effects on Sound Change in Swabian German

Karen Beaman, Queen Mary, University of London

Fabian Tomaschek, Eberhard Karls Universität Tübingen

Sociolinguistic studies of small speech communities and psycholinguistic studies of large language corpora have become the norm in investigations of linguistic change. Much less focus has been placed on longitudinal investigations of how speakers' sound systems change across their lifespans. This paper targets this deficit by analyzing the intra- and extra-linguistic factors affecting an ongoing sound change in Swabian, an Alemannic dialect spoken in southwestern Germany, through the speech of 20 panel speakers recorded in two different communities, Stuttgart and Schwäbisch Gmünd, first in 1982 and again in 2017. This study explores the extent to which phonetic environment, lexical frequency, and social factors interact and incite or retard sound change in the individual speaker. The target variable for this investigation is the modern standard German diphthong [ai] which has evolved from two different Middle High German (MHG) phonemes, /i:/ and /ei/. While these two phonemes have completely collapsed in contemporary standard German, Swabian has retained this distinction. To our knowledge, no longitudinal, sociolinguistic or psycholinguistic study evaluating the effects of lexical frequency and dialect identity has been conducted in Swabian.

We used Generalized Additive Mixed Models to investigate to what extent the F1/F2 trajectories in the vowel space differed for the two MHG variants. In addition to the effects of neighboring consonants, we find that an interaction between speech community, lexical frequency, and indexicalities of Swabian identity affect the degree to which the two diphthong variants are merging or at least becoming more similar to one another within the lifespan of one generation. By analysing individual speaker trajectories, we show how sound change is governed by the intricate interplay between internal structural factors and individual speaker notions of language ideology, social meaning, and dialect identity.

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## Individual variation in native and non-native filled pauses

Meike de Boer, Willemijn Heeren, Leiden University Centre for Linguistics

Within languages, native speakers differ in their use of the filled pauses uh and um [1]. In addition, individuals tend to be consistent in their use of filled pauses across recordings [2], which makes the feature useful for forensic speaker comparisons. We investigated to what extent individuals are consistent in their filled pauses across languages, i.e. when speaking in their native language (L1) and a non-native language (L2).

For silent pauses, [3] showed that speakers are consistent across languages in terms of the number of pauses and their durations. [4] predicted that L2 speakers transfer their filled pauses from their L1 as well. However, realizations of filled pauses are language-specific [4- 6]. This suggests that advanced learners may acquire the distribution and realization of filled pauses in their L2 as part of the acquisition process.

This paper discusses cross-language comparisons for filled pauses in spontaneous monologues of 60 Dutch females. We used recordings collected by [7] at University College Utrecht, in which each speaker spoke two minutes in their L1 Dutch, and two minutes in their L2 English. Since University Colleges select their students based on their level of English, the speakers' L2 proficiency was above average [8]. We annotated the speakers' filled pauses manually and analyzed the acoustic features duration, fundamental frequency (F0), and vowel formants (F1-3), using Praat [9]. In addition, we calculated the ratio between uh and um for each speaker.

Preliminary results show that speakers are consistent across languages in duration and F0 of their filled pauses, whereas they change the spectral realizations of the vowels in uh and um. Speakers adapted their um:uh ratio to the target language. Results are presented in a likelihood-ratio framework as adopted by [1] to quantify how well filled pauses discriminate between speakers in recordings in different languages.

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## The role of processing constraints on word order variation in German infinitival complementation

Sina Bosch, Claudia Felser, Universität Potsdam

German exhibits substantial variability regarding the linearisation of infinitive-embedding verbs and their complements. Infinitival complements can be extraposed to the right of the matrix verb (1), intraposed to its left (2), or form a discontinuous infinitival construction, the so-called 'third construction' (3) (Haider, 2010).

(1) EXTRAPOSITION

dass Fred versucht [den Hund zu streicheln]  
that Fred tries the dog to pet

(2) INTRAPOSITION

dass Fred [den Hund zu streicheln] versucht  
that Fred the dog to pet tries

(3) THIRD CONSTRUCTION

dass Fred [den Hund] versucht [zu streicheln]  
that Fred the dog tries to pet

To investigate the extent to which particular word order patterns are preferred over others by present-day German speakers, we conducted a scalar acceptability judgement experiment (N=76), a written production (N=46) and a spoken production experiment (N=44). Extraposed infinitives were preferred overall in acceptability judgements and in both written (77.4%) and spoken (91.13%) production. While intraposition and third constructions were both judged as about equally acceptable, they were strongly dispreferred in production: Intraposed infinitives were produced 20.7% of the time in the written and 5.5% in the spoken task, and third constructions could hardly be elicited at all in either production task (written: 2.17%; spoken: 3.39%).

The observed discrepancy between acceptability and production for intraposition and third constructions, and the strong preference for extraposed infinitives in production suggests that, in addition to language-internal factors such as lexical properties of the subcategorising verb, processing constraints influence performance preferences. Although all three word order variants are acceptable, using extraposed infinitival constructions (i) avoids generating difficult-to-parse centre-embedded structures by placing the relatively 'heavy' infinitival complement to the right periphery (cf. Hawkins, 2003) (ii) minimises subject-verb distance in the matrix clause, and (iii) maintains the infinitival complement's surface integrity.

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## **Pupil Dilation Reflects Increased Processing Load for Salient Variables**

Vincent Boswijk, Matt Coler, University of Groningen, Campus Fryslân  
Hanneke Loerts, Nanna Hilton, University of Groningen, CLCG

In linguistics the term salience lacks a precise definition. Different researchers use salience to refer to different phenomena, including those relating to prominence, frequency and processing load. But just how are salience and cognition related, if at all? In this contribution we consider that question, looking specifically at auditory salience. To test the hypothesis that auditory salience correlates to dilation in pupil size, which reflects cognitive load (cf. Blumenthal-Dramé et al., 2017; Ellis, 2016), we designed an experiment that measured participants' pupil sizes while they listened to stimuli in which six linguistic categories were manipulated to induce salient and non-salient variants (e.g. high intensity recordings vs. low intensity recordings, recordings with high-frequency words vs. low-frequency words, etc.). These manipulated categories were chosen across different linguistic levels to reveal the varieties of interplay between salience and cognition. We gathered data of 41 participants and analyzed outcomes using Generalized Additive Modeling (GAM) and found that pupil size significantly increased for three categories: acoustic prominence, loudness and grammatical gender. Other categories were interestingly not significantly affected. This implied increase in processing effort for some but not all categories has important implications for our understanding of the relationship between salience and cognition in general, and takes us a step closer to a working definition for auditory salience.

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## **“Gender: It’s complex”: Including non-binary gender identities in experimental linguistic research**

Leann Brown, Aron Arnold, Maria Candea, Oriana Reid-Collins, James German, Aix-Marseille Université

Explorations of the indexical nature of linguistic variation focusing on gender have traditionally been based on a binary gender paradigm and have compared women and men and/or the perception of women and men. Emerging populations with gender identities outside the gender binary, offer a unique opportunity to more holistically explore a true gender spectrum and generate more inclusive linguistic research. Our research focus is on the linguistic production, discourse, and perception of speakers whose gender is non-binary, an umbrella term, defined for research purposes as not always/exclusively/ever woman/female/feminine or man/male/masculine. This requires an iterative, reflective and conscious examination of theories of gender, of theories of social meaning making, and of suitable methodologies to explore, rather than impose, research tropes.

Our specific research questions are: What types of linguistic variation do individuals outside of traditional gender binaries produce (and is it comparable to what individuals identifying within the binary produce)? Do speakers index this variation with gender? Is this variation salient to listeners, and if so, is it indexed specifically with gender identities that align with our operating definition of non-binarity?

Answering these questions requires innovative mixed methodologies, with participant discourse driven variables and definitions. We have begun to explore these questions using an audio corpus of non-binary and binary English-speaking and French-speaking individuals with read and spontaneous speech samples. Our perception experiment results indicate that non-binary speakers are perceived differently than binary speakers in terms of masculinity/femininity, supporting that there are salient phonetic cues indexed with gender. This is investigated cross-linguistically. Our preliminary phonetic analysis results suggest that binary and non-binary speakers differ in terms of vowel production. Whether vocalic cues are salient in experimental gender perception tasks remains unclear.

## How do speakers categorize sociolinguistic varieties

Laurence Buson, Jean-Pierre Chevrot, Aurélie Nardy, Emilie Charles, Lidilem - Université Grenoble Alpes

Céline Dugua, Université d'Orléans

This research attempts to understand how speakers mentally represent and categorize sociolinguistic varieties. Although it has been established that everyday utterances are heterogeneous, including standard and nonstandard variants (Coupland, 2007; Eckert & Rickford, 2001), it remains to explore how speakers are able to categorize utterances as colloquial, formal, etc. from such a mixed material.

Our experiment aims at testing at a larger scale a phenomenon incidentally observed in previous research with children aged 10-11, in semi-directed interviews (XXX, 2013). During these interviews, we observed that when children reported on formal utterances, they stated they had heard formal variants that were absent from the input but consistent with the rest of the utterance. This phenomenon suggests that high-order coherent representation influences the perception or the reconstruction of heard utterances. This phenomenon has been tested extensively with 199 children aged 8 to 12 years and 120 adults. The methodology actually relies on a repetition task of 24 utterances: 12 are stylistically homogeneous and 12 involve a variant dissonant with the rest of the utterance (sociolinguistically heterogeneous utterances). Whether homogeneous or heterogeneous, the general orientation of the utterances is either formal or informal.

Results show that the subjects replace the non-coherent variant with the variant in line with the context when they repeat the non-homogeneous utterances. The most direct interpretation of this phenomenon is that the task was influenced by coherent schemata of varieties, linking together features with a similar sociolinguistic orientation: speakers elaborate coherent cognitive schemas of sociolinguistic varieties (XXX, 2018; XXX, 2014).

Our communication will present the *sociolinguistic restoration* phenomenon, the way it has been highlighted experimentally and the results in adults and children.

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## Is there a “lesbian voice”?

Salina Cuddy, University of York

This talk will present findings from a perception survey that sought to find evidence in support of the claim that listeners perceive a “lesbian voice” in British English. The data were collected through an online survey that presented the electronically manipulated voice of a native Yorkshire English speaker. The stimuli were spoken by the same speaker and were digitally altered to either increase or decrease the speaker’s average fundamental frequency while keeping the speech rate constant relative to that of the original sample. Fundamental frequency was chosen based on earlier research on lesbian speech (Moonwomon-Baird 1997; Van Borsel et al. 2013; Waksler 2001), as well as research from my own previous study (Cuddy 2018). Listeners were asked to listen to a series of sentences and make judgements about the speaker by rating traits on a 7-point Likert scale from “Strongly disagree” to “Strongly agree”. These traits included “friendly”, “intelligent”, “feminine”, “trustworthy”, “homosexual (i.e., lesbian)”, and “low pitch”.

The key discovery of the survey was that, in most instances, the majority of participants marked “Neither agree nor disagree”, the neutral option, when asked if the stimulus sounded “homosexual (i.e., lesbian)”. However, for the other traits, participants moved away from the centre of the scale for many of the stimuli sentences. This talk will explore some potential reasons that could explain why participants stayed consistently neutral when rating homosexuality despite rating other traits in an unambiguously positive or negative way. I will also discuss the few instances in which participants did not stay neutral in their ratings and explore the phonetic properties of those stimuli that were rated as sounding unambiguously “homosexual”, as well as considering whether there were certain participants who were more likely than others to assign non-neutral ratings on the sexuality dimension.

## Accent in Northern Irish Fiction: A study of the perception of clusters of phonetics variables

Sara Díaz, Universidad de Extremadura

Despite the fact that the study of language attitudes has been around for a while, there is not much of scholarly work on language attitudes towards English as spoken in Northern Ireland (see Hickey, 2004; Millar, 1989; Milroy & McClenaghan, 1977; Zwickl, 2002). This paper contributes to filling this lacuna in language attitudes research by presenting a study of how people from Northern Ireland perceive the representation of the Northern Irish English accent in films and TV shows. Although the sounds of Northern Irish English are not exactly the same throughout Northern Ireland, there are some features common in all parts of the country as some scholars have shown (Corrigan, 2010; Harris, 1984; Hickey, 2007; Milroy, 1981) and that is why I will be referring to a 'Northern Irish English accent'.

One of the most recurrent and significant topics in language attitudes research in Northern Ireland is that of ethnic identity. The ethnic division of the country has had a profound effect on many aspects of the Northern Irish society but there has been some debate as to whether ethnicity has an influence on language. According to Milroy (1981), "there is as yet no persuasive evidence to show that the two ethnic groups in Belfast (and Ulster) can be clearly identified by differences in accent" (44). However, McCafferty (2001) stands for the opposite view and in his study of English in Derry shows that there are differences in the way Catholics and Protestants use language.

In this paper, the relationship between ethnicity and language is further explored. A questionnaire is employed to see how the two ethnic groups in Northern Ireland perceive fictional representations of Northern Irish English accent in terms of three evaluative dimensions, namely, status, solidarity and comedy. The questionnaire consists of semantic differential scales which informants use to evaluate auditory and audiovisual stimuli. These stimuli are taken from films and TV shows produced in Northern Ireland and comprise clusters of phonetic variables. The results show that a different ethnicity does not seem to bring about a different perception of the Northern Irish English accent.

Keywords: Northern Irish English accent, perception, fictional representation, ethnicity, linguistic variables.

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## Who says what? The production and perception of English /t/ in the five states in the United States

David Eddington, Earl K. Brown, Brigham Young University

The articulation of /t/ in American English varies by linguistic and extralinguistic factors. Concerning social factors, word-final /t/ glottalization is seen more among speakers of African American English (Farrington 2018), of younger speakers (Partin-Hernandez 2005, Roberts 2006), and of women (Byrd 1994, Eddington & Channer 2010).

This paper examines the production and perception of /t/ in five US states: Indiana, Mississippi, New Mexico, Utah, Vermont. For the production study, participants read a letter containing 24 prenasal word-medial /t/s (e.g., *kitten*) and 28 prevocalic word-final /t/s (e.g., *not ever*). For the perception study, 22 speakers recorded a different sentence, each of which was manipulated acoustically in order to yield both oral and nasal releases of prenasal word-medial /t/ (e.g. *button* [bʌʔən] vs [bʌʔŋ]), as well as tap and glottal stop pronunciations of prevocalic word-final /t/ (e.g. *not ever* [nɔʔevə] vs. [nɔʔevə̤]). Next, these recordings were presented to participants who rated the speakers in terms of their perceived age, friendliness, pleasantness, rurality, education level, and whether they were from the same state as the participants.

The production results for prenasal word-medial /t/ (e.g. *button*) indicate that younger speakers produced oral releases more often than their older counterparts. Age also influenced the realization of prevocalic word-final /t/ as a glottal stop (e.g., *not ever*), such that younger speakers and women produced glottal stops more often than older speakers. In the perception study, speakers who used glottal stops were viewed as less educated and less friendly. Speakers who used oral releases were perceived as more rustic and less educated.

This paper contributes to the literature documenting the production and perception of /t/ in American English and to the literature that demonstrates the usefulness of using both production and perceptual data to study language variation (e.g., Brown 2015).

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## **The perceptual dialectology of South Florida**

Katharina von Elbwart, University of Duisburg-Essen

This paper presents the findings of a study of how non-linguists view linguistic variation in Florida and follows the research paradigm of perceptual dialectology (e.g. Preston 1999).

Recent work in the field has shifted focus to individual states and thus allows for a more detailed picture of perceived dialect areas. While a few studies have investigated language regard in English-Spanish contact scenarios in the U.S. (e.g. Bucholtz et. al 2007), others have focused on the perceptions of different Spanish varieties in Florida (e.g. Lynch and Carter 2013). This paper complements research on non-linguists' beliefs about language in the linguistically (super)diverse setting Florida, which has always been a place where the old European "one-nation-one-language" assumption does not hold true. In this paper I will showcase how this heterogeneous setting has influenced the perception of varieties, how it fosters language ideologies and whether diversity plays a role in forming representations of linguistic landscapes among Floridian residents. These insights help us to further our understanding of social and cultural spaces as negotiated by language and serve as a valuable resource in (re)negotiations of (multilingual) identities.

87 undergraduate students completed Preston's draw-a-map-task to access perceptions of linguistic variation in Florida. Of these 87 maps, 84 were run and analyzed in ArcGIS to make geolinguistic spaces visible. The composite maps indicate that Florida is perceived as a trichotomy with three salient dialect areas. Perceptions among respondents of Hispanic origin vary compared to those of Anglo-Americans. Prevailing ideologies point at strong beliefs about language indicated by labels such as "broken English" or "slang" which are used to identify spaces of strong Hispanic presence and demarcate more "proper American" and traditionally white areas. Together, these results show that participants exhibit a stronger awareness of cultural and linguistic heterogeneity in settings of diversity as compared to monolingual contexts.

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## Hungarian kindergartners' attitudes towards their local dialect

Krisztina Fehér, Department of Hungarian Linguistics, University of Debrecen, Hungary

While studies of early first language acquisition in the field of cognitive psycholinguistics have focused on covert linguistic preferences in infants (e.g. DeCasper & Prescott, 1984), sociolinguists have usually investigated overt language attitudes in adults (e.g. Preston, 1998, 1999; for Hungarian Fodor & Huszár, 1998; Sándor, Langman & Pléh 1998). Though there are works covering this gap (e.g. Cremona & Bates, 1977; Kinzler & DeJesus, 2013; Kaiser & Kasberger, 2018), young children's developing linguistic preferences and attitudes are still an understudied area. This particularly applies to investigating kindergartner's subjective reactions towards social and regional dialects of their mother tongue (e.g. Kinzler, Shutts & Spelke 2012; Rosenthal, 1977; Day, 1980). Furthermore, to date, there are no studies targeting kindergartners' linguistic attitudes towards regional varieties of Hungarian.

The aim of this paper is to investigate this "terra incognita" by conducting an initial study on 5-7 year-old monolingual Hungarian children's subjective reactions towards their local dialect compared to the standard variety of Hungarian. So far, 80 kindergartners from a small town in the northeastern region of Hungary have participated in a field experiment, which was conducted using a child-friendly design called Matched-Guise Technique (MGT). The experiment was carried out in 4 test and 4 control conditions. The results point to slight preference for the standard variety of Hungarian over the local dialect as early as the age of 6. There is also evidence of an on-going development in the participants' linguistic awareness. The comments to the preference-based choices given by some children show that the covert biases of Hungarian kindergarten children of this age are already turning into overt stereotypes towards the local dialect.

In order to widen the scope of the findings, by the time of the conference further MGT-based studies are scheduled involving participants coming from various linguistic backgrounds.

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## **Sociolinguistic variation in intensifier usage in Indian and British English: The roles of gender, age, and formality**

Robert Fuchs, University of Hamburg

Previous research on gender and language in varieties of English spoken in countries where it is a Native Language has shown that, all else being the same, female and male speech differ in a limited number of ways. For example, intensifiers such as 'very' and 'really' tend to be used more frequently by women than by men (e.g. Tagliamonte and Roberts 2005, Ito and Tagliamonte 2003). However, other sociolinguistic variables can be confounding factors, and need to be analysed in conjunction with gender. Moreover, the current state of knowledge is restricted to varieties of English as Native language. The present paper will address this research gap by contrasting the sociolinguistics of intensifier usage in Indian and British English.

This study relies on the spoken parts of the Indian and British components of the International Corpus of English, with data from more than 600 speakers. A total of 29 intensifiers (boosters) were investigated. Linear regression models were used to determine which sociolinguistic factors significantly influence the relative frequency of intensifiers in spoken Indian and British English.

Adopting this robust speaker-based quantitative approach, gender, age, formality, the number of interlocutors and their relationship are shown to be significant factors. Results show that women use more intensifiers than men in informal, but fewer in formal situations. Age is also an important factor in determining intensifier frequency. While these results indicate that gender differences in intensifier usage are relatively similar in the two varieties, a difference was found in how gender and formality interact. In IndE, the female lead in intensifier frequency was greater than in BrE in private conversations, but in more formal contexts, the male lead in intensifier frequency is greater in BrE.

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## Investigating mismatch between production and perception of variation: An experimental study

Anastasia Gerasimova, Ekaterina Lyutikova, Lomonosov Moscow State University, Pushkin State Russian Language Institute

Although production and perception are historically treated as distinct processes, data from both domains is used as foundation for linguistic theories. The recent studies, however, consider production and perception to be similar not only in terms of representations that they operate with, but also in terms of cognitive mechanisms that they involve ([1], [2]). A challenge that arises when one tries to align parsing and generating processes is the mismatch between production data and acceptability judgements: either produced constructions are judged to be unacceptable, or constructions that are highly acceptable are not produced (e.g. [3], [4]).

In this paper, we investigate how variation can be manifested in these two domains of speech and present a set of experiments that aim at linking production frequencies and acceptability ratings. In particular, we examine three phenomena in Russian that demonstrate intralingual variability. For each phenomenon we conducted production and acceptability judgement experiments with the same speaker sample. We analyzed consistency of each respondent by checking whether differences in acceptability ratings could be predicted by frequencies of occurrence and obtained the following results. First, throughout the three pairs of experiments we observe that the respondents are inconsistent in production and perception. Second, in production experiments respondents demonstrate more permissibility. Third, the mismatch between production and perception can indicate the current status of the variance. In case of variation, inconsistency from respondents can be expected. The most remarkable result is that the types of this inconsistency differ, which means that the variance can be characterized from this point of view. In the talk we plan to discuss what implications our findings have for specifying the language change and how our results can be extrapolated to other language domains that do not exhibit such variability.

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## Effects of talker identity on speech intelligibility: a lifespan perspective

Adriana Hanulikova, University of Freiburg

Previous research suggests that perceived racial identity may alter comprehension and interpretation of native-accented and foreign-accented speech. Following expectation-based accounts, anticipating a talker's accent based on speaker ethnicity enhances intelligibility of speech if expectations are confirmed (e.g. [2, 4]). In contrast, bias-based accounts (e.g. [1, 3]) predict comprehension difficulties due to stereotypical attributions to speaker's appearance.

In this study, this apparent contradiction is examined by asking a) how perceived ethnicity shapes speech comprehension across different varieties, and b) how effects of speaker identity on speech comprehension develop across the life span. Given that stereotypes and biases tend to be more difficult to suppress with increasing age, talker effects on speech comprehension may increase as well.

High-school children (n = 78, mean age 14.1; range 12-15), older adults (n = 50; mean age 77.6; range 70-92), and young adults (n = 50, mean age 35.9, range 30- 45) listened to nonsense utterances (e.g. the old helmet is fishing) that were embedded in speech-shaped noise at 0 SRN. Utterances in Standard German, a regional (Palatinate) dialect, and a foreign (Korean) accent were presented over speakers along with photographs of white Caucasian or Asian women displayed on a computer monitor. Children were asked to write down and adults to repeat what the ostensible speaker said. Responses were scored based on % correct key word repetitions. Additional data on comprehensibility, accent ratings, working memory and hearing ability (for adults) were collected.

Overall, the results show that social and linguistic information interact across the lifespan, however, effects of talker ethnicity are only reliable in degraded speech such as foreign-accented or regional varieties. Both theories thus seem to explain different aspects of speaker identity integration. Bias-based theories account well for metalinguistic and postperceptual processes, while expectation-based theories are accounted for using more direct methods assessing listeners' comprehension.

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## Re-assessing the role of vowel formant dynamics in speaker-dependent information

Willemijn Heeren

An important source of variation in speech originates from the speaker. Earlier research on speaker-dependent information in speech acoustics has investigated speaker information carried by different segments [e.g., 1,2], and by different speech styles [3,4]. This work has for instance shown that vowels tend to carry more speaker-dependent information than consonants. A recent study showed that a single segment within one speech style may vary in speaker-dependent information as a function of the word class it appears in: the vowel /a/ contained more speaker-dependent information when sampled from content than function words [5].

In this study on /a/, however, dynamic formant information did not aid speaker classification, whereas earlier studies of speaker-dependent vowel acoustics named it an important predictor [e.g., 6,7]. In contrast with the earlier work, (1) the /a/ study used spontaneous rather than lab speech, yielding contextual phonetic variation for the vowel /a/, and (2) the vowel /a/ is not inherently dynamic, whereas vowels in earlier work tended to be. Therefore, the present research was aimed at addressing the role of formant dynamics in speaker-dependent vowel acoustics, using a vowel that is often realized inherently dynamically. Also, the study sought to replicate the finding of differential speaker information by word class.

The vowel /e/ (often produced as [ei ]) was segmented from spontaneous telephone conversations, spoken by sixty Netherlandish, Standard Dutch, male speakers (~60 tokens/speaker). POS tags and right phonetic context were annotated. Various acoustic measurements were taken, including average and dynamic formant measurements. Preliminary results show that the linguistic-phonetic effects of context and word class are present (assessed through mixed-effects models), and that speaker classification improves when formant dynamics are added (assessed through linear discriminant analysis). This suggests that formant dynamics' contribution to speaker specificity varies by vowel.

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## **The effect of instruction language on academic achievements in Dutch higher education**

Penny Heisterkamp, Hanneke Loerts, Anja Schüppert, Center for Language and Cognition Groningen

Many higher education programmes in the Netherlands are currently entirely English-taught. This enables students from all over the world to study in the Netherlands, thereby fostering transnational collaboration. However, little is known about costs and benefits of EMI for European societies in the 21st century, as empirical investigations of students' academic achievements language proficiency and preparation for the labour market are scarce. Our study aims at collecting some of these data by expanding conventional approaches within this research field (discourse analysis, classroom observation) to using experimental designs. In addition to the influence of language of instruction and proficiency, this study looks at the effect of language-learning aptitude on academic achievements, which has not yet been investigated in the context of EMI. Moreover, this will be the first EMI study that uses eye-tracking to establish the effect of instruction language on students' focus points in class.

DMI and EMI lectures recorded for this purpose serve as stimulus material. The recordings consist of two pairs of mirrored lectures in Dutch and English given by two native speakers of Dutch. A Latin-square crossed-design is employed to normalise for difficulty differences across lectures while ensuring that all participants are tested in a pairwise setup in DMI and EMI. Eye-tracking data is collected while students watch the lectures, after which academic achievements are elicited by means of a mock-exam. Language-learning aptitude (LLA) is quantified for all participants using LLAMA (Meara, 2005). The participants' English proficiency is measured using the LexTale test (Lemhöfer & Broersma, 2012).

The outcomes of this project identify the effect of instruction language on students' attention during lectures and on their academic achievements. It will also establish how LLA interacts with this effect. Thereby the project elicits data that is highly relevant for the development of sustainable language policies in higher education.

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## **Stimmen: Sociolinguistic Research with Smartphones in Minority Language Areas**

Nanna Haug Hilton, Hanneke Loerts, University of Groningen

This paper presents a tool for citizen science and sociolinguistic research: the smartphone application 'Stimmen' (Voices in Frisian). The app is inspired by language documentation efforts that rely on the public as collectors of speech recordings and translations. To give users an incentive to partake 'Stimmen' includes a gamified perceptual dialectology task that guesses where the user is from (within the Netherlands), on the basis of answers about their own dialect (cf. Leemann et al. 2016). Additionally, a picture naming task is available in the app, designed specifically to collect speech data from lesser-used and oral languages. The picture-naming task consists of 88 different pictures (without text) that must be named by the user (in the language of their choice).

'Stimmen' was launched in 2017. More than 15,000 users have provided data so far, and more than 46,000 speech recordings have been made. This paper presents results from the perceptual dialectology task as well as the picture naming task. The discussion focusses on our Frisian data and the changes within the minority language in the Netherlands. Two main findings are discussed: the fact that stereotypical regional features have relatively stable isoglosses; and that in our data language loss and regional dialect levelling cannot be sufficiently teased apart. The latter finding shows how important triangulation is for understanding linguistic change, and indicates that crowd-sourced data, e.g. from citizen science projects, must often be enriched with additional qualitative sociolinguistic studies. We end with some comments about the value and future outlook of citizen science for studies of language variation and change.

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## **How do ethnolects mark ethnic identity? An experimental approach**

Michol Hoffman, York University

Naomi Nagy, University of Toronto

Ronald Beline Mendes, University of São Paulo

James Walker, LaTrobe University

Changes in immigration have increased ethnic and linguistic diversity in Canada's cities. Immigrants are expected to acquire to an official language, but language shift is often mitigated by settlement in 'ethnic enclaves,' where heritage languages (HLs) continue to be spoken. Canadian-born children of ethnolinguistic groups often live in these areas, reinforcing their ethnic identity. More attention is being paid to the sociolinguistic consequences of urban ethnolinguistic diversity, but the origins and social meanings of ethnolects are not well understood and their role in marking ethnic identity untested. HL maintenance is adduced as a cause of 'ethnolects' (ethnically marked ways of speaking the majority language), which may result from the transfer of HL features into English as part of long-term bilingualism and/or serve as a way of marking ethnic identity. Other linguistic features may also mark ethnicity. Anecdotal remarks and media attention point to Canadians' awareness of ethnically marked ways of speaking English but despite public interest, sparse research exists on perceptions of different ways of speaking.

This paper reports the results of a pilot project addressing perceptions of ethnically-marked ways of speaking English in Toronto, Canada's largest and most ethnically diverse city. To test Torontonians' ability to identify native speakers of Toronto English from different ethnic groups, we ask 100 participants to listen to speech excerpts by 20 Torontonians from five of the largest ethnic groups (British/Irish, Chinese, Italian, Portuguese and Punjabi). Speakers are stratified by degree of orientation to their ethnicity. Following each excerpt, we ask participants to identify the speakers' ethnic backgrounds. Results confirm that Torontonians are aware of ethnically marked ways of speaking and are better able to identify speakers who affiliate more strongly with their ethnicities (reflected in a previously-conducted survey). This work contributes to our understanding of the sociolinguistic consequences of ethnolinguistic diversity on social identity.

## Perception of Voice Onset Time by German and Austrian listeners

Petra Hödl, University of Graz

Standard German exhibits a two-way phonemic contrast between “voiced” (/b, d, g/) and “voiceless” (/p, t, k/) stops. However, in word-initial position this phonemic contrast is usually realised as an aspiration contrast rather than a “true” voicing contrast. Hence, phonetically we deal with different durations of positive voice onset time (VOT) ([1]). Accordingly, we distinguish between voiceless lenis plosives (with a short-lag VOT) and voiceless aspirated fortis plosives (with a long-lag VOT).

This is certainly true for the pronunciation of stops by North German speakers (see e.g. [2]). However, for speakers of some (Southern) varieties of German, such as Austrian German, the situation might be different. According to the literature, these varieties exhibit a reduced degree of aspiration or even show a total lack of it – this has especially been claimed for bilabial and alveolar stops (see e.g. [3], [4], [5]).

The aim of the proposed study is to investigate the possible perceptual consequences of this regional variation in stop production. In particular, we compared the perception of VOT by German (n = 47) and Austrian listeners (n = 33). Categorization abilities of these two listener groups were tested by means of a forced-choice identification experiment and semimanipulated speech stimuli that varied in their VOT duration as well as in their burst/vowel characteristics. For each participant, identification functions and perceptual boundaries were calculated.

Results showed significant individual differences regarding the shape of the identification curves. However, the locations of the perceptual boundaries were about the same in both listener groups. Results also suggest that VOT duration is not the only relevant voicing cue for German-speaking listeners but that the perception of voicing is strongly affected by the burst/vowel characteristics of a given stimulus.

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## **Effect of topic on front vowel realization in L1 and L2 mono-and bidialectal speakers**

Sandra Jansen, University of Paderborn

Ksenia Gnevsheva, ANU

Anita Szakay, Macquarie University

Research shows that bilingual and bidialectal speakers vary in production by topic (Gnevsheva, 2015; Walker, 2014) but we do not know whether bilingual speakers vary when they have been exposed to two dialects. We address the question whether the topic of a reading task, when heavily associated with a particular dialect area, can influence how L1 and L2 mono- and bidialectal speakers realize a linguistic variable. This will provide us with information about the processing of indexical information.

Forty-five participants varying in native language (first language [L1] English vs. L1 Russian / second language [L2] English) and their previous English dialect exposure (monodialectal Australian [first dialect, D1] vs. bidialectal American D1 / Australian second dialect [D2]), were grouped as follows: L1D1, L1D2, L2D1, and L2D2. The participants were audiorecorded reading a text on a neutral topic, one about the USA and one about Australia. F1 and F2 formants were extracted for all monophthongs and normalized. Linear mixed effects models were fit to the data with the normalized F1 and F2 for KIT and DRESS as the dependent variables.

The results show that L2 speakers produce fronter KIT (more Australian-like) vowels in the Australian text passage (than the L1 speakers). All groups show a trend for a lower DRESS (more American-like) production in the American text passage and a fronter DRESS (more Australian-like) realisation in the Australian text passage. The results suggest that an indexical link exists between vowel production and topic for all four speaker groups and that the indexical link between KIT and topic is stronger than between DRESS and topic. The results are important as they show that indexicality operates similarly for L1 and L2 mono- and bidialectal speakers on the phonetic level while anonymous (submitted) show that weaker indexical ties exist for L2 speakers on the lexical level.

## The roles of familiarity and similarity in children’s developing accent awareness

Ella Jeffries, University of Essex

The current categorisation task tests 5-9-year-olds (N=34) in York on their ability to group speakers according to regional accent distinctions. The experiment involves grouping speakers together according to their native, home accent (Yorkshire) vs. one of three other accents (Standard Southern British English (SSBE), North Eastern, Scottish).

The design and analysis of the task aims to address the inconsistent results from previous studies investigating this question, (e.g. Floccia et al., 2009 vs. Jones et al., 2017), by focussing on three key aspects: children’s familiarity with the accents, the similarity of the accent features, and the children’s individual exposure to regional accent variation in their input. Findings indicate that the interplay of these three factors affects the children’s performance. The children are better at grouping together speakers in the Yorkshire vs. SSBE round (average 77%, see figure 1). This is interpreted as being due to both the familiarity of the children with the standard accent, as well as the phonological features themselves being the most phonetically distinctive from their home accent. Furthermore, the children who have regular exposure to regional accent variation are better at accurately grouping the speakers throughout the experiment (see figure 2); this finding highlights the importance of variation in children’s input for their developing sociolinguistic awareness.

Following an exemplar model of indexical learning (Foulkes 2010), it is hypothesised that the grouping of speakers by regional accent follows a developmental process. This process starts with the recognition of familiar speakers and the storing of social information in exemplars of their speech. It then progresses to the grouping together of speakers whose exemplars activate similar social information. Overall, therefore, it is anticipated that as children encounter more variation, they are better able to analyse and abstract over this variation appropriately in order to categorise speakers by their accent.

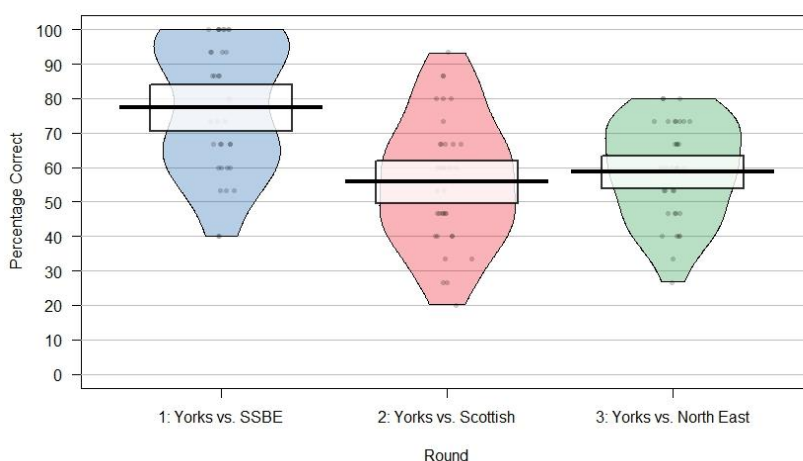
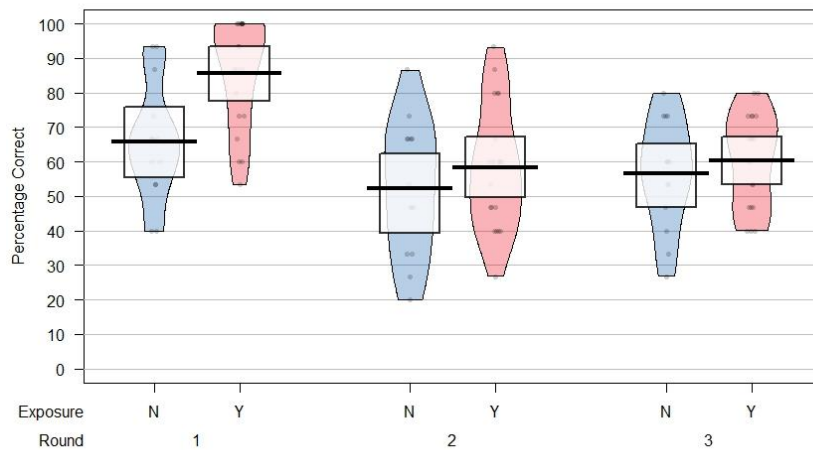


Figure 1. RDI plot: All results across the different rounds of the experiment



**Figure 2. RDI plot: All results across the different rounds of the experiment, divided by exposure. (Y= regular exposure to regional variation, N = no regular exposure to regional variation)**

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## Muslims as a Target of Hate Speech on “Social” Media

Andrea Kleene, University of Southern Denmark, Odense

Hate speech is a growing source of concern. Particularly in online contexts, increased incidences of hate speech, especially about ethnicity, nationality, and religion, have been observed (cf. Foxman and Wolf 2013 among others). Yet, the very notion of hate speech remains highly controversial, lacking consensus about its definition, impacts, and the motivations and justification for its criminalisation and regulation, being inexorably caught between the need to protect the human rights of equality and dignity and the civil liberty of freedom of expression (cf. Herz and Molnar 2012 among others). Even more striking is that still relatively little is known about the linguistic and communicative mechanisms underlying the expression of hate speech, particularly in online communication (cf. Assimakopoulos et al. 2017), and even less is known about how such mechanisms are perceived by ordinary language users.

After providing a brief overview of the methods on how to detect hate speech, the talk aims to shed some light on Hate Speech towards muslims. In many tweets or posts on Facebook and Twitter they are defamed, e.g. by the use of slurs (like Kanake), dehumanising metaphors (like Kanalratte ‘sewer rat’) or stereotypes (like Sozialschmarotzer ‘welfare scrounger’). Besides this, there is a wider range of subtle mechanisms for expressing hate speech, focusing on morphological, syntactic and discourse levels. These comprise, for instance, the different lexical uses of nouns denoting ‘Muslim’ in German (Muslim, Moslem, Mohammedaner, Muselmann, Musel), the formation and use of compounds (e.g. Scheiß-X ‘bloody X’), typical collocations with attributive adjectives (e.g. dumm ‘stupid’), and syntactic constructions containing adversative expressions (like ‘I am not against Muslims, but ...’). The qualitative and quantitative analyses are based on corpuses constructed from data on Facebook and Twitter (cf. Bick / Didriksen 2017–).

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## **Assessing listener sensitivity to spatially highly localized accent features using the Geographical Association Test (GAT)**

Carmen Llamas, Dominic Watt, Peter French, Almut Brown, Duncan Robertson, University of York

Although perceptual dialectology has a relatively long history in sociolinguistic enquiry, research in this area has tended to focus on the identification and delimitation of accents as more or less unitary objects. Less work has investigated the geographical associations that specific phonological features may have among listeners. This paper presents findings from an experimental perception task designed to test such associations, which forms part of the TUULS project ('The Use and Utility of Localised Speech Forms in Determining Identity: Forensic and Sociophonetic Perspectives'; UK ESRC ES/M010783/1).

The larger project focuses on phonological variation and change in three urban centres in the North East of England: Newcastle, Sunderland and Middlesbrough. Both inter- and intra-accent variation are investigated, the effects of informants' mobility (routinised mobility vs. relative immobility) on their usage of highly localised speech forms being a particular area of interest. Production data were taken from 120 informants (40 per locality) and perception tests were subsequently run on a subset of these (10 per locality).

In this paper we present findings from one of the perception tasks used, the Geographical Association Test (GAT). Over 50 stimuli containing key features of interest were presented to listeners in the form of audio recordings of single-word utterances recorded during the production interviews. Via an on-screen drag-and-drop task, the participants indicated on a map of northern England the places with which they would most closely associate a pronunciation. Here we examine how the perceptual data correlate with those from the production strand, and what differences are apparent across the three localities. We also consider differences between mobile and non-mobile participants to see how finely resolved their knowledge of the geographical ranges of localised forms is, and how it is influenced by (lack of) exposure to and interaction with speakers of other, closely related varieties.

## **The impact of semantic relations on grammatical alternation: An experimental study of proper noun modifiers and determiner genitives**

Julia Kolkmann, University of York

In this paper we investigate the role of semantic relations in the grammatical alternation between the proper name modifier construction, e.g. *the Obama government*, and the determiner genitive, e.g. *Obama's government*. Rosenbach (2007) suggested that these constructions can in principle alternate, but that the alternation is constrained by semantics in so far as proper name modifiers can express a wider range of semantic relations than determiner genitives. To date, however, Rosenbach's suggestions remain untested empirically. Through the use of an experimental study in which participants were asked to rate the naturalness of the two constructions in 20 attested natural language contexts and provide paraphrases of the semantic relations in question, we tested when the two constructions alternate and whether either construction expresses semantic relations that block alternation. Our main finding is that none of the relations we studied is categorically associated with only one of the constructions but that certain relations – notably possession and name – are far more preferentially associated with determiner genitives and proper noun modifiers respectively. Despite these “default” associations, participants nevertheless identified a range of possible interpretations for many of the examples, a result which points towards the semantic underspecification of both constructions. More generally, our study shows the value of an experimental approach as a corrective to researcher intuitions about the identification of semantic relations in context.

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## Real-Time Evaluations of Accent and Professional Competence

Erez Levon, Devyani Sharma, Yang Ye, Queen Mary University of London  
Amanda Cardoso, Dominic Watt, University of York

Differences in the perceptual evaluation of British regional accents have been widely reported (e.g., Giles 1971; Garrett et al. 1999; Coupland & Bishop 2007). Yet we have limited information on how these evaluations emerge over the course of an utterance, or how offline holistic judgments of accents relate to listeners' online assessments of speech in real-time (e.g., Watson & Clark 2015; Montgomery & Moore 2018). In this paper, we report the results of an experiment designed to investigate dynamic evaluations of accent differences, focusing on how the moment-to-moment trajectories of perceptual responses contribute to the overall evaluative profile of a speech variety.

Data are drawn from a verbal guise experiment in which listeners (n=160) were asked to evaluate the performance of two "candidates" for a trainee solicitor position at a corporate law firm in the UK. The candidates were native speakers of 2 English accents: Received Pronunciation (RP) and Multicultural London English (MLE). Listeners heard audio responses to two interview questions for each candidate. During each recording, listeners provided real-time evaluations of the candidate's performance via an online graphical sliding scale. After hearing both recordings for a candidate, listeners also provided global assessments of the candidate's hireability.

Analyses reveal systematic perceptual variability along three main axes: broad-based differences across the two accents, differences as a function of specific listener characteristics, and differences in the relative contextual salience of particular accent features. Results of generalised additive modelling of real-time judgments indicate that while both speakers are ultimately evaluated favourably, the upward trajectory of the MLE speaker's ratings starts later than those of the RP speaker, indicating an enhanced "burden of proof" for the MLE candidate. Further analyses demonstrate that this effect is conditioned by listener age and reported motivation to control prejudice, and by the presence of enregistered accent "shibboleths" in the stimuli.

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## The acquisition of sociophonetic variation: a production and perception experiment with Italian schoolchildren

Chiara Meluzzi

The acquisition of sociophonetic variation has been a major topic in variationist research [2, 3, 4, just to name a few], but very little work has been carried out for Italian. In this work, we aim at investigating the emergence of sociophonetic variation in production and perception of vowels by 100 Italian pupils aged between 6 and 10 years old in the Alpine area of Biella (Italy). Vowel variation is a strong marker for sociolinguistic identity, and it is strongly associated to speaker's origin [1].

Pupils participated in a production and a perception experiment. Pupils participated in a picture naming task and in a semi-structured interview with the researcher. All recordings were transcribed in ELAN and annotated in PRAAT with respect to stressed vowels: F1 and F2 values of the stressed values were extracted on 5 different points through a script. In the perception test, pupils listened to 5 different Italian regional varieties reading a story, and they have to give some information about the speaker, using a questionnaire with pictures; later, they comment their answers in a further recording session. Moreover, sociolinguistic questionnaire on dialect use within family were compiled by children, with the assistance of the researcher, and by children's parents and, when possible, grandparents; these data also indicated who is children's primarily caregiver at home.

Mixed model analysis have been performed in SPSS to determine the impact of the different variables. Preliminary results show that a difference in front vowels starts to be determined by gender in older pupils rather than in the youngest ones [4]. Moreover, the dialectal background seems to play a role more on perception rather than in production of middle vowels. This also confirms that linguistic stereotypes are present also at a very young age [5].

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## **The mutual intelligibility of a Kurdish and a Zazaki dialect spoken in the province of Elazig, Turkey**

Fatih Özek, Charlotte Gooskens, Bilgit Saglam

We present the first results of a large project concerned with the mutual intelligibility between Zazaki and Kurdish dialects spoken in Eastern Anatolia. There is an ongoing debate on the classification of Kurdish and Zazaki as separate languages or as dialects of the same language (Aratemür 2011). In Turkey, TRT6, a state owned multi-lingual TV channel, broadcasts in Kurdish and Zazaki. The Turkish Ministry of Education (MoE) has published Kurdish and Zazaki books to be used in elective courses at primary school. However, there is no scientific study of how well Kurdish and Zazaki speakers can understand these publications and TV programmes. The present project intends to contribute to these debates and to inform the relevant institutions policy makers by providing them with empirically obtained data.

For the present pilot investigation we tested the mutual intelligibility of Kurdish and Zazaki speakers by means of a word translation task and we also asked the participants to estimate how well they could understand the other language variety. The 69 participants came from villages situated on each side of the border between the Kurdish and the Zazaki language area on the northern and southern border of the lower part of the Keban dam. The results showed that overall the mutual intelligibility is rather low. There was a significant interaction between the effects of gender and language. Zazaki males identified more words correctly than Kurdish males while Kurdish females had higher intelligibility scores than Zazaki females. We suggest linguistic (lexical distances) and non-linguistic (attitudes and amount of exposure) explanations for the intelligibility results.

## Lexical effects outrank phonological biases in Hungarian morphophonological variation

Fanni Patay, Péter Rebrus, Research Institute for Linguistics, Hungarian Academy of Sciences  
Péter Rácz, University of Bristol & Eötvös Loránd University & RIL Hungarian Academy of Sciences  
Miklós Törkenczy, Eötvös Loránd University & Research Institute for Linguistics, Hungarian Academy of Sciences

The trade-off between lexical and phonological effects on morphophonological variation has been the subject of a long-standing debate (cf. Hay & Baayen 2005). One example comes from Hungarian vowel harmony, where disharmonic stems, containing a neutral vowel following a back vowel, differ in their transparency depending on the height of the neutral vowel (e.g. *papi:r-nak* (\**papi:r-nək*) ‘paper-DAT’, but *hotelnek~hotel-nak* ‘hotel-DAT’). Hayes et al. (2009) claim that stem-final consonants also phonologically condition this variable behavior, and that sibilant-/sonorant-final disharmonic stems prefer front-suffixes. We test this claim by looking at three categories of nouns in the Hungarian Webcorpus (Halácsy et al. 2004) and in an online experiment.

We define the three categories based on stem endings: (i) our baseline category is [ɛf]/[ɛt]-final, (ii) the [ɛl]/[ɛn]-final category is phonologically conditioned to prefer front-suffixes, and (iii) the [ɛr]/[ɛs]-final category is lexically motivated to prefer backsuffixes (since [-ɛr] and [-ɛs] coincide with diminutive suffixes with a consistent backpreference), but phonologically conditioned to prefer front-suffixes. Final consonants were selected to make sure that the categories do not overlap with other, irrelevant morphological patterns.

Based on Hayes et al. (2009), we expect phonologically conditioned forms to prefer front-suffixes. In the webcorpus, we only find that lexically motivated forms prefer back-suffixes. We ran a pre-registered 1 online experiment in which participants had to pick the front or back variant of suffixed pseudowords. The results reflect the patterns in the webcorpus in that the lexical category has a significant preference for back-suffixes ( $p < .05$ ), but the phonologically conditioned category has no preference for front-suffixes.

Both our corpus and experimental results support the primacy of lexical effects on Hungarian harmonic variation, suggesting that any phonological bias is primarily mediated through the lexicon instead of playing an active role in shaping variation.

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## Processing words in a different accent: the role of tonal contours in lexical access

Nicolai Pharao, University of Copenhagen

The perception and mental representation of non-standard pronunciations of words has received increased attention in recent years as part of the debate about levels of abstraction in the mental lexicon (Kraljic, Brennan & Samuel 2008, Sumner & Samuel 2009, Sumner & Kataoka 2013). The majority of this work focusses on the processing of variable word forms where the variation is segmental. This paper studies the role of the shape of the tonal contour associated with stress in Danish in lexical access and representation. This contour is known to vary across accents, with Copenhagen-based Danish having a low-high tonal pattern and Aarhus-based Danish having a high-low tonal pattern associated with stress.

In a series of lexical decision tasks, 32 listeners from Copenhagen and 32 listeners from Aarhus responded to disyllabic words with both Copenhagen and Aarhus segmental variants. All stimuli were realized with the high-low tonal pattern. Mixed-effects regression analysis of the response times showed no effect of segmental variant but also that listeners from Copenhagen were slower to respond than listeners from Aarhus ( $p = 0.024$ ). In a subsequent lexical decision task, the same participants heard some of the same words produced by a different speaker, but again with the high-low tonal pattern. This task was conducted to explore effects of long-term priming as previously used in Sumner & Samuel (2009). We only found a priming effect for the listeners from Aarhus, never for the Copenhagen listeners. Taken together, the results indicate that an unfamiliar tonal contour slows down lexical access regardless of the segmental make-up of the words, and that it effectively blocks long-term priming of words with the same tonal contour, suggesting that listeners do not store words spoken in an unfamiliar accent.

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## Accent recognition in the Netherlands

Anne-France Pinget, Uil OTS, Utrecht University

There is a long tradition of defining standard Dutch pronunciation as accentless. However, in Pinget et al. (2014) it was shown that Dutch natives are quite successful in recognizing the regional background of speakers of the standard variety. This study aims at refining these insights and investigating how listeners' background influences the identification of regional accent variation.

This paper presents the first results of a large-scale study in which data were collected by means of a Limesurvey-based application linked with a geographical map provider (Google Map). 1627 native speakers of Dutch listened to short extracts of telephone or real-life conversations from the Spoken Dutch Corpus (*Corpus Gesproken Nederlands*, CGN) (Dutch Language Union, 2004) and tried to identify the speakers' region of origin. The speakers were forty speakers of standard Dutch with a mild regional accent, coming from ten different regions in the Netherlands.

The data were fitted with mixed-effects linear regressions including listeners' and speakers' factors. Firstly, we discuss the listeners' effects of age, gender, geographical knowledge and region of origin on accent recognition. Secondly, we present the speakers' factors and discuss the periphery/edge effects. Finally, we review both the advantages and the new methodological challenges the use of a geographical map provider poses for the study of accent recognition.

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## A Perceptual Study of Bristol English

Ferrer Portillo, University of Bristol

This case study approaches, from a quantitative perspective, perceptual dialectological analysis of Bristol English, a variety lacking in diatopic production and perception studies (Coates, 2018; Montgomery, 2007; Wakelin, 1986), and perceived as significantly dissimilar from north to south Bristol by its speakers (Purvis, 2016; Ashcroft, 2016; Hardingham, 2013). Therefore, acoustic analysis with PRAAT software, alongside conventional methods for Perceptual Dialectology (PD), namely, the 'draw-a-map task' (Preston, 1982) and the 'ranking and voice placement method' (Preston, 1999a), are used to obtain evidence for viability of different Bristol English categories.

Although an exhaustive progression of the aforementioned three-way methodology cannot be unfolded in a 20-minute talk, in this presentation, evidence is presented of how using GIS (Geographical Information System) software to analyse the information from 'draw-a-map' tasks (Preston, 1982), helped to aggregate, process and display, graphic and well-defined PD data (Montgomery & Stoeckle, 2013).

Thus, this paper discusses the use of five GIS tools to analyse results of the draw-a-map sub-study (Montgomery & Stoeckle, 2013): The Georeferencing tool, used to assign geographical coordinates to 109 hand-drawn maps, containing informants' depiction of the dialect areas they believe exist in Bristol (draw-a-map task); the Editor tool, which allowed digitization and aggregation of 415 dialect areas contained in the aforementioned maps into one single GIS file; the Union and Frequency tools, which show the overlapping rate of the perceptual dialect areas and their scope; and the Conversion tool, which enabled a nuanced, multi-coloured and smooth depiction of both the superimposed and non-convergent areas.

The results show that the use of these tools for the draw-a-map task analysis, facilitated the elaboration of a composite map, confirming a north-south perceptual division of Bristol English, although, subdivided into four sub-areas (northwest, central-north, and two central south).

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## **A variationist approach to subject pronoun expression (SPE) in Spanish second-language learners (L2ers)**

Ana de Prad Pérez, Maynooth University

Nick Feroce, University of Kansas

This paper compares the effect of *perseveration* (or priming) on first (1sg) and third person singular (3sg) subjects in Spanish L2 SPE. Spanish SPE is subject to the effect of functional linguistic factors (e.g. switch reference, ambiguity, etc.) as well as the mechanical factor perseveration. Variationist analyses along these lines are abundant in general but scant in second language acquisition (SLA). We expand on this research by examining perseveration, as well as functional factors, in Spanish L2 learners of different proficiencies.

A total of 29 Spanish L2ers (15= higher, 14= lower proficiency) and 8 Spanish controls (native speakers living in the US) were recorded during a sociolinguistic interview. A total of 5,269 1sg and 3sg conjugated verb forms with a referential animate subject were extracted, coded for functional linguistic variables, perseveration, and speaker proficiency level, and submitted to statistical analysis using Rbrul.

The analysis revealed all speaker groups used more overt subjects in 3sg than 1sg (controls= 31.1% vs. 23.1%; higher = 39% vs. 16.7%; lower = 64.4% vs. 40.9%). Additionally, learners differed more from the control group in 3sg than in 1sg in terms of rates of overt subjects. In terms of patterns of use, as instantiated in the variables regulating the distribution, the learners were more similar to the control group in 3sg. Lastly, the control group exhibited perseveration with null subjects and interspersions with pronominal subjects (Otheguy, 2014). The L2ers, in contrast, exhibit more interspersions with null subjects in 3sg. We provide a functional explanation for our data: Null subjects are largely used as the default option and pronominal subjects are used when needed (switch reference contexts). L2ers, however, do not seem to have acquired null subjects as the default form in 3sg.

## Is there social evaluation of syntactic variation? Two perception studies of word order variation in English

Mary Robinson, New York University

This paper presents perception studies of floating quantifier placement and verb-particle ordering in American English (AmE) that suggest that syntactic variation is unlikely to carry social meaning, consistent with the long-held view that syntactic variation is less likely to be socially evaluated than phonetic variation (Eckert & Labov 2017).

Wh-all Experiment: (1) shows different ways of expressing a plural question in AmE:

- (1) a. Who was at the party?
- b. Who all was at the party?
- c. Who was all at the party?

AmE speakers (n=505) participated in a pseudo-matched guise perception experiment that asked them to rate three 'characters' from a new television show on Intelligence, Friendliness, Formality, Attractiveness, Age, and Likeability, and guess where the character was from. It was expected that (1b) would index the South, and (1c) would index the Upper Midwest (DARE; Tilleson 2018). Characters perceived as Southern were predicted to be rated as less intelligent and less formal (Fridland 2008).

Verb-Particle Experiment: A "newscast paradigm" experiment (Labov et al. 2011) investigated the verb-particle alternation in English (e.g. I took the trash out ~ I took out the trash). Participants (n=296) heard two news stories: the first contained no particle verbs, while the second contained 5 sentence-final particle verbs. Half of participants heard verbs in their verb-particle-object order, and the other half heard them in their verb-object-particle order. Participants rated professionalism on a scale of 1 to 7. It was predicted that participants would favor the verb-particle-object order, as it adheres to prescriptive norms disfavoring sentence-final prepositions (Kroch & Small 1978).

Results: In both experiments, it was not possible to correlate any of the syntactic conditions to non-linguistic judgments about the speaker. These results suggest that word order variation is less salient than phonetic variation, even when participants are specifically asked to evaluate a speaker's language.

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# The particle placement alternation in World Englishes: an experimental validation of probabilistic corpus models

Laura Rosseel, Benedikt Szmrecsanyi, KU Leuven, Belgium  
Jason Grafmiller, University of Birmingham, UK

Within the probabilistic grammar framework, the methodology of choice is usually to build regression models based on corpus data to explain the variability in usage of a linguistic alternation. However, to validate these models of probabilistic linguistic knowledge external experimental evidence is necessary. In this paper, our focus is on the probabilistic knowledge of syntactic variation, specifically of the particle placement alternation in World Englishes (see (1)-(2)). More particularly, we set out to experimentally validate the finding reported in [AUTHORS] (2018) that the length of the direct object is a more important predictor of this alternation in L1 varieties of English compared to L2 varieties of English (see Figure 1).

- (1) Kim put the bins out.
- (2) Kim put out the bins.

In order to do so, we designed a slider bar rating task experiment inspired by Bresnan & Ford (2010) in which participants rated how natural either variant of the particle placement alternation sounds to them in a series of randomly selected corpus items. These corpus items were intermixed with the same amount of filler items to distract attention from the construction under study. The experiment was completed by a sample of native speakers of British English and Indian English (N = 120).

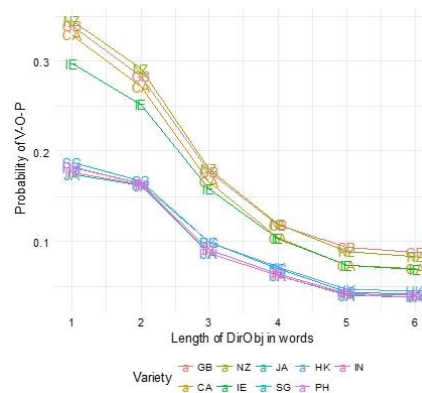


Figure 1 - Random forest partial dependence plots of the interaction of Variety with direct object length (L1 varieties: British English (GB), New Zealand English (NZ), Canadian English (CA), Irish English (IE); L2 varieties: Jamaican English (JA), Hong Kong English (HK), Indian English (IN), Singapore English (SG), Philippine English (PH))

The results for the British participants show that experimental ratings closely correlate with the predictions from the corpus model and confirm direct object word length as an important predictor of the particle placement alternation. It is expected that the ratings currently being collected from the Indian English respondents will yield similarly high correlations, however with direct object word length as a less important predictor. In addition to an overview of the results, the paper will discuss the implications of this type of validation experiments for corpus data and how a combination of both methods may corroborate the validity of the results of each approach.

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## Where does variation start? Examining frequency effects in language processing and production

Eleonore Schmitt, University of Bamberg

This talk is concerned with the question of how grammatical variation is linked to token frequency. In German corpora, strong (irregular) verbs that are not token-frequent show variation between strong and weak (regular) conjugation (Nowak 2013). This empirical finding can be explained theoretically with respect to cognitive constraints: the strong conjugation forms past tense and past participle with ablaut (geben – gab – gegeben ‘give – gave – given’). The ablaut pattern is barely linked to phonological structure (Köpcke 1999) so that the pattern has to be memorized for each strong verb individually. Hence, strong verbs have to be token-frequent to keep the cognitive costs at a manageable level (Bybee 1985). In contrast, the weak conjugation has low cognitive costs as every verb forms the past tense and past participle with -t(e) (lach-te, ge-lach-t ‘laugh-ed’). Infrequent strong verbs therefore tend to change their inflection class and enter the weak paradigm (Nowak 2015). As the decrease of token frequency is directly linked to a cognitive disadvantage of strong forms, it is hypothesised that this disadvantage is mirrored in processing before it is observable in language production.

The present study tests this hypothesis with the help of a self-paced-reading task (spr). In addition to the spr-task, an elicitation task was conducted in order to compare language production and processing. In the spr-task, four verbs with high token frequency (14-20 tpm) and nine with low token frequency (0-4 tpm) are used. Five of the low-frequency verbs already vary in corpora (e.g. gequellt/gequollen ‘swelled’); the other four still show stable strong conjugation (e.g. gefochten ‘fenced’). The reading times of high- and low-frequency verbs are compared in order to test the influence of token frequency and to evaluate whether the low-frequency verbs will elicit comparable reading times of weak and strong forms independently of their use in language production.

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## **The effect of language-learning aptitude on academic achievements in higher education EMI settings**

Anja Schüppert, University of Groningen

Many higher education (HE) programmes in Europe are currently entirely English-taught, enabling students to move freely within Europe and thereby fostering transnational collaboration and inclusiveness. Wilkinson (2013) confirmed that the use of English-medium instruction (EMI) rather than Dutch-medium instruction (DMI) in the Netherlands was generally motivated by idealistic and educational motivations during the 1980s and 1990s. However, the currently vastly increasing number of EMI programmes in the Netherlands (and the decreasing number of DMI programmes) appears to be driven mainly by economic considerations (Wilkinson 2013). Similar trends can be observed in many other European countries, such as the Nordic countries.

Generally, students from the Nordic countries are assumed to have few problems comprehending lectures taught in English, particularly when the lecturers themselves are native speakers of a Nordic language: Firstly since the interlanguage speech intelligibility benefit (Bent & Bradlow 2003) enhances mutual intelligibility of non-native speakers sharing a native language, and secondly because non-native English proficiency in the Nordic countries is among the highest in the world (EF Education First 2018).

Importantly, however, individuals differ in their language-learning aptitude (LLA). LLA has been identified as a central predictor for L2 proficiency (Abrahamsson & Hyltenstam 2008, Dörnyei 2005). This suggests that students with particularly low LLA might encounter obstacles in EMI programmes they would not face to the same extent in native-language programmes. This study investigates the role of English language proficiency and language-learning aptitude for native Swedish-speaking students' academic achievements in Swedish-medium instruction (SMI) and EMI-settings. Mirrored (same topic, same lecturer) SMI and EMI lectures serve as stimulus material. The recordings consist of four lectures taught by two native Swedish-speaking lecturers. Academic achievement is measured using comprehension questions, English proficiency is quantified using the LexTale test (Lemhöfer & Broersma 2012) and LLA is assessed using the LLAMA test (Meara 2005).



## The distribution of speaker-specificity in fricative /x/ acoustics

Laura Smorenburg, Willemijn Heeren, Leiden University

This study aims to investigate the distribution of speaker-specificity, i.e. the ratio of between-speaker to within-speaker variation, over the speech signal in acoustic features of fricative /x/ in Standard Dutch. Previous research has shown that some segments contain more speaker-specific information than others; Dutch fricatives rank below vowels and nasals, but above /r/ and plosives [4]. However, it is not yet clear how speaker-specificity varies within one segment. Our main focus is whether speaker-specificity depends on within-speaker factors ‘contextual labialization’ and ‘syllabic position’.

Both between-speaker and within-speaker factors have been shown to pose variation on fricatives. Between speakers, place of articulation for /x/ ranges from velar [x] to uvular [χ], which is claimed to vary idiolectally [5] and regionally [2, 3] in standard Dutch in the Netherlands. Additionally, uvular fricatives may be produced with “scrape”, i.e. uvular trill, which also shows regional variation [2, 3].

Within speakers, anticipatory labialization has repeatedly been shown to affect fricative spectra [e.g. 6, 8]; labialization lengthens the anterior cavity, lowering resonance frequencies in fricatives. There might also be an effect of syllabic position on acoustic features in fricatives [9], but reports are not consistent [cf. 1].

Using spontaneous telephone conversations from the Spoken Dutch Corpus [7], the present study extracted 3,492 /x/ fricatives and adjacent segments in different linguistic contexts from 57 male speakers of standard Dutch (aged 21 – 50). Several spectral and temporal features were extracted for each fricative, including dynamic spectral features.

Preliminary results indicate that there are large effects of both anticipatory and perseverative labialization on spectral measures in /x/, but no effects of syllabic position. In the work presented here, between-speaker and within-speaker variation will be more closely examined using linear mixed-effect modelling, to determine whether speaker-specificity of /x/ varies as a function of contextual labialization and syllabic position.

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## Hebrew speakers' perception of sociolinguistic variation

Philipp Striedl, LMU München

Sociolinguistic variation in Modern Hebrew (MH) and its perception have received little attention (Schwarzwald 2013). I am using the theoretical framework of Perceptual Variationist Linguistics (Krefeld & Pustka 2010) to investigate Hebrew speakers' (HS) outlook on variation in MH. Accordingly, I understand the speaker's own classifications as *declarative knowledge* about language, which is organized in the HS' "social stock of knowledge" (Berger & Luckmann 1967:42).

My study tackles similar research questions as outlined by Preston (2011: 4): Which kind of linguistic *standard* do HS have in mind and what shapes these ideas? Which deviations from the *standard* are most significant to the speakers? Which attitudes do speakers express towards these variables? Because MH only displays a small degree of diatopic variation (Schwarzwald 2001:3), I am investigating primarily group-specific variation.

In the first research stage, I conducted and recorded Sociolinguistic Interviews with more than 30 speakers from different social environments. I asked if they can make inferences about a speaker's social environment, considering only the way someone speaks Hebrew. They differentiated between *correct* or *educated* Hebrew and less *correct* Hebrew or *slang*. Furthermore, they made categorizations on the basis of HS' religious affiliation and different countries of origin – Israel has constantly been receiving large numbers of immigrants (cf. Central Bureau of Statistics 2017).

I asked about characteristic variables for different social environments as well. To cite one example, conservative Jews (Haredis) linked the following construction to their own social environment. Non-Haredi speakers were usually not familiar with the metaphorical meaning 'to be at' of *ohez* (literally 'grasp').

*eyfo at ohez-et ba-sefer*  
where 2SF grasp.PRS-F.SG in.the-book  
'Where are you in the book'

In the second research stage, I am going to investigate the usage of certain variables with a quantitatively usable questionnaire and expand the investigation on speaker's attitudes with perception experiments.

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## **Investigating co-textual and contextual effects on phonological intelligibility in ELF communication: an experimental approach**

Veronika Thir, University of Vienna

English as a lingua franca (ELF) users come from a vast range of different linguacultural backgrounds and so exhibit a particularly high level of diversity with regard to their accents. Phonological intelligibility has thus concerned ELF researchers for quite some time now (e.g. Jenkins 2000, Deterding 2013). However, most studies in this respect have been based on qualitative analysis of relatively small sets of naturally-occurring data, whereas quantitative, experimental research that allows for generalizations to a larger population of ELF users has remained relatively scarce. One assumption based on qualitative research, but which has never been confirmed by a large-scale investigation, is that co-textual and contextual effects only play a minor role for phonological intelligibility in ELF interactions, since many non-native ELF users fail to draw on co-textual and contextual cues to resolve ambiguity in the phonological code in the form of another speaker's accent (Jenkins 2000).

This paper presents an experimental approach developed to test the effect of different types of co-textual and contextual cues on phonological intelligibility in ELF communication in a large number of listeners. Non-native ELF listeners from a variety of different L1 backgrounds were presented with target words in English spoken with an Austrian accent under four different conditions: (1) in isolation (2) embedded in semantically 'neutral' syntactic co-text, (3) embedded in semantically meaningful syntactic co-text and (4) embedded in syntactic co-text, with a certain situational context in addition. Phonological intelligibility was measured by the number of target words correctly transcribed by the listeners. Data from a pilot study (n=106) revealed statistically significant differences in intelligibility scores across the four conditions. The paper reports on the challenges in the development of the test items and on the experiment's success in revealing different types of co-textual and contextual effects on phonological intelligibility for non-native ELF users.

Key words: English as a lingua franca (ELF), intelligibility, pronunciation, phonetics/phonology, listening

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## **Analysing the L2 perception-production relationship longitudinally: evidence from native English university students' high rounded French vowels**

James Turner, University of Southampton

Bilingual speech models such as the SLM (Flege, 1995) and L2LP (Escudero, 2005) agree that learners' production of vowels in their foreign language (L2) is somehow constrained by their perceptual accuracy. However, the precise nature of this perception-production link remains unclear and few studies investigate this relationship longitudinally.

The present research addresses this gap by analysing data from 10 British English intermediate learners of French, before and after their second year of their French degree. Given that both French vowels /y/ and /u/ assimilate to English /u/ (Flege, 1987), this paper focuses on learners' ability to form separate phonological categories for these vowels.

Vowel tokens (/y/, n=402; /u/, n=669) were elicited through L1-L2 oral translations, carrier phrases and word lists. During the second phase, participants also carried out a perceptual test which targeted their discrimination of naturally-spoken minimal pairs containing /y/ (n=150) and /u/ (n=150). In line with the aforementioned speech models, it was hypothesised that for each vowel, high accuracy in the perception task would correlate with extent of tongue advancement in production.

Analysis of F2 vowel production data showed improvement across the time points in /y/ but not /u/. Perception data, however, revealed higher accuracy for /u/ than /y/. Furthermore, the extent to which an individual fronted their /y/ production was not correlated with accurate perception rates of the same vowel. Instead, it was found that learners' perceptual accuracy of the contrasting vowel, /u/, correlated positively with the amount of /y/-fronting.

More broadly, this supports the notion that there is a link between perception and production but that this relationship is not always intravocalic, but sometimes between vowels that are contrasted phonologically. These findings question the reliability of perception-production analyses of a segment in isolation and suggest that L2 phonological category formation occurs at a systemic level.

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## Does exposure to rap music affect implicit language attitudes?

Astrid Uneken, Hanneke Loerts, Nanna Hilton, University of Groningen

A fairly robust finding in sociolinguistic studies has been that standard accents are favoured over regional and/or foreign accents in speech evaluation tasks (e.g., Dragojevic, Giles, Beck & Tatum, 2017). In the Netherlands, one particular group that is regularly discriminated against on the basis of their accent are speakers of Dutch with a Moroccan accent (NTR, 2016). The present study examines speaker evaluations towards Moroccan-accented Dutch by assessing native Dutch speakers' implicit attitudes. Interestingly, many young people in the Netherlands are exposed to Moroccan-Dutch accents through the medium of rap and hip hop music (Nortier & Dorleijn, 2008). On the basis of existing literature one can assume that that an increased exposure to a language variety can lead to changes in attitudes towards said variety (Fang, Singh & Ahluwalia, 2007). Therefore, our study additionally examines the influence of this exposure on listeners' attitudes towards Moroccan-accented Dutch.

In our study, 32 participants performed a matched-guise Implicit Association Test (IAT; Greenwald, McGhee & Schwartz, 1998) to assess whether they show a bias towards standard Dutch as compared to Dutch with a Moroccan accent. Subsequently, participants completed a music background questionnaire to explore their liking for and frequency of exposure to Dutch rap and hip hop music. The IAT results suggest that participants indeed harbour more negative implicit attitudes towards a Moroccan accent as opposed to standard Dutch. Furthermore, correlation analyses reveal that these implicit attitudes towards Moroccan-accented Dutch are more pronounced in participants who are more often exposed to Dutch rap and hip hop music. Our findings imply that exposure towards foreign accents, specifically through expressions of arts and culture, can affect the listener's perception of and attitudes towards that foreign accent. This has substantial implications for language planning and policy making for fighting discrimination in multilingual contexts.

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## **Investigating the effects of instruction on the acquisition of L2 sociolinguistic competence: A longitudinal study into translation trainees' receptive and productive sensitivity to grammatical (in)formality in English as a foreign language**

Jim J. Ureel, Ella Diels, Isabelle S. Roberts, Iris Schrijver, University of Antwerp (Antwerp, Belgium)

As enablers of intercultural communication, translators are foreign-language (L2) learners who are constantly faced with the challenges of comprehending and producing language that is sociolinguistically acceptable in various linguistic and cultural contexts. The participants under investigation in this study are Dutch-speaking L2 learners of English enrolled as translation trainees at the University of Antwerp (Belgium). As future language professionals, they must acquire advanced levels of sociolinguistic competence in English. Such advanced levels include the acquisition of finetuned sensitivity to stylistic appropriateness. A marker of sociolinguistic competence is accommodative competence, which Giles (2016) defines as the ability to adapt language to make it appropriate in various communicative settings. While research in L2 sociolinguistics has burgeoned (e.g., Geeslin, 2014), academic studies into the effects of instruction on the acquisition of (sensitivity to) linguistic formality and accommodative competence are limited. Studies that investigate linguistic formality focus, for example, on L2 French (Etienne & Sax, 2009), on English as a lingua franca (Durham, 2014) and on other contexts where formality in English is investigated from other perspectives (Keppens, 2015; Labov, 1972). In this paper, we aim to bridge this gap by presenting results from an experimental study that investigates if and how L2 learners detect and correct problems related to grammatical formality as their proficiency in English increases. We conducted a longitudinal study and collected quantitative and qualitative data from a group of 45 translation trainees over a three-year period. The main research question was if and how – in tasks related to stylistic revision – L2 learners' receptive and productive sensitivity to grammatical formality in L2 English developed as a result of instruction. In this paper, we present the quantitative results, which show four trends with regard to the acquisition of sensitivity to grammatical formality: partial sensitivity, detection–correction imbalances, outperformance and stagnated performance.

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## **Judgement and cognitive organization of the sociolinguistic variables in Second Language Acquisition**

Gabriela Viana dos Santos, Laurence Buson, Jean-Pierre Chevrot, Université Grenoble Alpes

Second Language Acquisition studies have shown that learners use more formal sociolinguistic variants than native speakers. For explaining this difference, certain works in the framework of Schemata theory argue that learners have incomplete schemata in the target language. In order to explore this hypothesis, it is important to know how learners memorize and categorize the sociolinguistic variants of the target language. As a first step, the present study examined organization and judgement of sociolinguistic variants of French in language learners from two origins: English and Chinese native speakers.

First, we carried out the Sociolinguistic Repetition Task (Buson et al., 2018) in 66 students (English and Chinese native speakers). The participants listened and repeated 24 utterances: 12 sociolinguistically mixed utterances (e.g. a standard variant in a formal linguistic context) and 12 sociolinguistically homogeneous utterances (e.g., a non standard variant in a formal linguistic context). Moreover, we observed the social judgment using a subjective reaction in 81 students (English and Chinese native speakers), based on the judgment questionnaire of Campbell-Kibler, (2008). The participants listened and judged 12 formal and informal homogenous utterances according to 6 social categories: femininity, speech flow, extroversion, accent, education and intelligence.

The results show that, like natives, students modify more often the heterogeneous utterances than the homogeneous utterances during the Repetition task, suggesting that coherent schemata of the varieties influence the task. They replaced the variants that are not compatible with the context with the compatible ones, making the utterances more homogeneous. The results of the judgement task showed that students have more difficulty than natives to explain their judgement, and that the judgement varies with the student's origin. In sum, our results suggest the existence of complete sociolinguistic schemata among learners of foreign languages. However, their origin changes the schemata structure and the social judgements.

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## How does variation lead to change? The role of individual differences in adults' acquisition of sound change

Cesko Voeten, Leiden University

There is agreement among linguists that historical sound changes are due to the reanalysis of synchronic variation [1,2]. The process by which this happens is well-known in children [3], but not in adults. Regional variation has successfully been used as a proxy for real-time acquisition (e.g. [4]), but in vivo studies of sound change are rare.

A unique opportunity in this respect is offered by Dutch. Dutch is currently undergoing a vowel shift whereby /e:,ø:,o:/ are becoming diphthongs /ei,øy,ou/, but only in the Netherlands: the Dutch-speaking part of Belgium lacks this change [5]. 'Sociolinguistic migrants' from Belgium into the Netherlands thus allow a unique window into the adult acquisition of sound change.

I report a cross-sectional experiment comparing 45 Netherlandic Dutch ('ND') speakers, 45 Flemish Dutch ('FD') speakers, and 18 FD migrants who have lived in the Netherlands for a long time (mean = 18.71 years, SD = 11.18 years). Production (word-list) and perception data (phoneme decision along a continuum) were collected. For the production data, cluster analyses on the random slopes of a mixed-effects model reveal that the FD and ND groups pattern together, and that six of the eighteen FD migrants have adapted to ND, a difference which is significant. For the perception data, the same approach fails to identify clusters in the 108 individuals (replicating [6]), but robust fixed effects are identified at the group level.

The differences between individuals and between the tasks have implications for the evolution of language variation into language change. The differences between participants in the production task suggest that some participants are more susceptible to sound change than others; a principal-components analysis of participants' background questionnaires suggests a role for 'sociability'. The differences between the tasks imply that production works differently than perception (cf. [6]), which has theoretical and methodological implications.

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## Does 'American' prime 'CANDY'? Exploring the use of semantic priming experiments to access below-awareness accent recognition

Hielke Vriesendorp, University of Sheffield

Sociolinguistic research has provided increasing evidence that a good deal of sociolinguistic processing occurs below awareness (Hay et al. 2006, Campbell-Kibler 2012). However, in most sociolinguistic research informants are asked to engage with sociolinguistic meaning in an above-awareness way. In matched guise experiments listeners are instructed to explicitly evaluate a speaker's social identity, while other sociolinguistic speech processing research asks listeners to explicitly engage with sounds or linguistic variation (this was even the case with Campbell-Kibler's (2012) Implicit Association Test).

This paper describes a pilot study for a project which aims to use semantic priming experiments to access below-awareness activation of socio-indexical meaning without explicitly asking informants about either social meaning or linguistic variation. The aim of the larger project is to investigate which linguistic cues (individual segments or word-based exemplars) set off activation of socio-indexical meaning, and which potential indexical meanings are activated in what contexts, testing Eckert's (2008) notion of the indexical field.

To explore this, I present data from a masked priming experiment which investigated whether it was possible for names for broad perceptual concepts of varieties of English (*American, Irish, Australian, Geordie, Yorkshire, Cornish*) to prime a wide range of target words relating to stereotypes of those varieties (e.g. LOUD, HAMBURGER, GUNS), and whether it was possible for lexical items with a socio-indexical meaning strongly associated to the stereotype (*y'all*) to do the same.

Results reveal a strong priming effect between variety names and a wide range of related targets, and an unclear picture about whether orthographically presented *y'all* primes its stereotypically related targets. To further test the potential of using semantic priming experiments for accessing below-awareness I will conduct a new experiment with auditory primes.

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## The effect of language attitudes on short-term phonetic convergence

Cao Wenling, University of York

Speech convergence refers to a process whereby a speaker changes the way he or she speaks to be more similar to the other speaker. Previous studies showed that convergence is affected by social factors such as attitudes (Babel 2010, 2012; Pardo et al. 2012) and speaker's gender/sex (Namy et al. 2002). The present study aims to explore whether Hong Kong English (HKE) speakers' attitudes towards Received Pronunciation (RP) and General American English (GenAmE) would affect their convergence.

Nineteen HKE speakers interacted with an RP speaker and a GenAmE speaker for 1 hour respectively. The percentage of their production of rhotic words was calculated before, during and after their interactions. To elicit their language attitudes, the participants listened to 8 recordings of different English varieties (i.e. RP, GenAmE and HKE) and gave their ratings to 21 traits such as friendliness and education. The matched-guise method (Lambert et al. 1960) and Principal Component Analysis were used. If language attitudes play a role in speech convergence, the participants would converge more towards the accent they prefer.

The results did not support the hypothesis. The HKE participants were found to significantly converge towards the native interlocutors on rhoticity. Surprisingly, their language attitudes towards RP and GenAmE did not predict the degrees of convergence.

It could be that speakers' attitudes towards the INTERLOCUTOR matter more than their attitudes towards the ACCENT of the interlocutor in convergence, as both Pardo et al. (2012) and Babel (2012) found evidence of people converging more towards the interlocutor they liked. To activate the effects of attitudes on a speaker's production, he/she would have to recognize an accent first, and then retrieve his/her pre-established associations between the accent and social/emotional labels during perception and/or production. This process might be too challenging for the HKE participants who are non-native speakers of English.

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## Individual differences in later lexical development and family-specific naming patterns

Anne White, Steven Verheven, Gert Storms, KU Leuven

This study proposes a new perspective on later lexical development. So far, previous research regarding later lexical development has identified the developmental patterns in children's naming behavior of different ages on a group level (Ameel, Malt, & Storms, 2008). Little work has been done regarding individual differences over the course of development in children. This study aimed to account for the variation observed in different age groups by identifying family-specific naming patterns. First we aimed to answer the question whether family members' naming patterns are more similar as compared to non-family members of the same age group. Second, we identified objects that are named in a family-specific way, i.e. idiosyncratic naming patterns of a specific family as compared to the average naming pattern. To this end we collected free naming data in 30 different Dutch-speaking families with children between the age of 5 and 14. The set of stimuli consisted of nearly 200 pictures of household objects. We present a quantitative method to describe the influence of word use in the home environment on the naming patterns of an individual child. For every participant we constructed a matrix containing ones and zeros, indicating whether that participant named a pair of objects with a different or the same name, respectively. This matrix represents the naming pattern of the full stimulus set. Subsequently, we calculated all possible correlations between naming patterns of individual participants followed by a comparison of different categories of relations within and between families, for example children versus siblings. First, we found that children displayed more variation between individuals than adults and describe systematic differences in variation between children and adults. Further, we related individual variation in later lexical development to family specificity in naming patterns. Within families, naming patterns were more similar as compared to non-family members of the same age group. We conclude that a part of the individual variation we observe in developmental naming studies originates from idiosyncrasies learned in the home environment. Currently, individual differences are often being related to variables such as age, socio-economic status and education level. However, this study shows that studying language-input in the home environment might be an important aspect to take into account in studying individual differences in children.

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## **Auditory Semantic Priming: how can we use it to study linguistic variation?**

Yosiane White, University of Pennsylvania

In order to study the effect of phonological variation on semantic processing, many studies employ an auditory semantic priming (SP) paradigm in which response times to targets preceded by semantically related words (e.g. cat - DOG vs table - DOG) are facilitated (i.a. Sumner & Samuel, 2005). However, SP was developed as a tool for studying visual word recognition, and is notoriously susceptible to participants' use of task-related strategies (such as target-prediction) for improved performance. This muddies the measurement of semantic priming facilitation (Neely, 1991). Besides this, it is unclear how the different time-course for auditory (incremental) vs visual (holistic) word processing affects the parameter settings in auditory SP, and interpretation of results. It is therefore reasonable to be cautious drawing conclusions about the influence of variation on semantic processing from an auditory SP dominant literature.

This study aims to test the above methodological questions with the goal of developing an auditory SP paradigm suitable for studying the effect of phonological variation on semantic processing. Experiments 1-4 test whether 272 participants employ task-related strategies by varying the inter-stimulus interval (ISI) and proportion of related pairs (RP) in the experiment, in both between and within-subjects designs. Contrary to visual SP studies, we find that varying the ISI and RP do not yield different SP effects, as would be expected if strategy use were at play. Using linear mixed effects regression models, we find robust ~60ms SP effects across short ( $t=-19.46$ ) and long ISIs ( $t=-22.1$ ), and low and high RPs. This suggests that in auditory SP, participants are not employing strategies to improve their performance, eliminating this confound for the use of auditory SP as a tool for studying variation. Accordingly, experiment 5 introduces a /t/-glottalisation variable into our stable auditory SP paradigm.

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## **An acquisitional perspective on language perception: the social meaning of borrowing**

Eline Zenner, Laura Rosseel, Dirk Speelman, KU Leuven

Situated on the intersection of contact linguistics and developmental sociolinguistics, this paper aims to validate the widely accepted, but largely unverified, idea that prestige plays a role in the borrowing process (see e.g. Matras 2009). Furthermore, we contribute to current sociolinguistic research on the acquisition of prestige: if a variety is considered prestigious by a speech community, when do emerging L1 learners adopt this social meaning (e.g. De Vogelaer & Katerbow 2017)? Specifically, we present an experiment on the perception of English loanwords by 212 Dutch speaking primary school children of three age groups that aims to answer the following questions: (1) are primary school children sensitive to the prestige of English loans in Dutch?; (2) if so, what are the attitudinal dimensions shaping that sensitivity, and how do they develop with age?

The experiment combines the matched guise technique (Lambert et al. 1960) with an onomasiological perspective on lexical borrowing (Zenner et al. 2012). A newly created cartoon hero is presented in two guises: a Dutch-only guise and a version with English alternatives for fifteen Dutch lexical items (e.g. *koekjes/cookies*). In addition to this speaker evaluation task, participants completed two further tasks verifying whether they understood the English and Dutch words presented in the cartoon and whether they recognized the English loans as being English.

Our results reveal clear differentiation between age groups: where the youngest group has no clear preference for either guise, the oldest group strongly prefers the English guise. Moreover, factor analyses indicate that an underlying structure of children's attitudes only emerges in the older groups. Echoing previous work (e.g. De Vogelaer & Toye 2017), these results seem to suggest that the social meaning of language variation develops gradually with age. Furthermore, our data suggests a strong link between language awareness and the prestige of loanwords.

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## Children's perception and production of variable agreement in Brazilian Portuguese: naturalistic and experimental approaches

Christina Azalim, Mercedes Marcilese, Universidade Federal de Juiz de Fora - Brazil

Variable number agreement patterns in Brazilian Portuguese (BP) have been extensively investigated in Sociolinguistics literature [1]. However, most research in this area has focused on the variability on adults' speech and only few studies have examined child production data. [2]. Since we share the idea that language acquisition plays a relevant role both in the maintenance and in the linguistic change of a linguistic community [3], this study focuses on the acquisition of variable agreement rules by children acquiring BP. In particular, we examine the effect of the linguistic factor phonic salience in the acquisition of variable number agreement rules within the determiner phrase (DP), based on the articulation of naturalistic data and experimental methodology. First, we analyzed samples consisting of 22-hour-recording of spontaneous speech of six children aged from 3 up to 6 years old from different social classes. The distribution of the variable number agreement rules in children and their adult caregivers correlates with phonic salience principle: a bias for the absence of the plural morpheme in less salient items (regular plural forms formed by the addition of a morpheme /-s/ (e.g. menino-meninos [me.'ni.nu - me.'ni.nus] 'boy(s)' in relation to the more salient ones (for which the plural is formed with an allomorpheme or with root changes (as in coração-corações [ko.ra.'sẽw - ko.ra.s'õj s] 'heart(s)'). Phonic salience is typically measured from scales that take into account the morphological processes of plural formation, the stress pattern and the number of syllables of the items [4-5]. However, previous experimental data [6-7] suggest differences between the behavior identified in the children and adults' perception and production. In order to find a better explanation for the conflicting results, a new semi-structured elicited production experiment was conducted with 20 children and 21 adults, in which other dimensions of the phonic salience variable were investigated (namely, number of syllables in nouns and syllable stress). The elicited data were submitted to the same distributional analyses as the naturalistic data, namely, by calculating how many redundant and non redundant DPs were produced in each experimental condition. When compared to the naturalistic approach, experimental methodology exhibits a greater potential to the construct of a more granular account to the phenomenon.

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## **Native and non-native speaker perception of variable aspiration in Spanish – a pupillometric study**

Karolina Brós, Jan Wołfejko, Adam Sikorski, University of Warsaw

/s/ aspiration is a phonetic process encompassing a variety of Spanish dialects (Lipski 1996, Hualde 2008). Typically, syllable-final /s/ is weakened to [h] or its voiced counterpart [ɦ], and can be fully elided. Complete deletion is problematic as it can lead to comprehension problems in communication. Although the grammatical/semantic context usually helps in perception, there are cases of ambiguity as to whether a word is used in the singular or plural (nouns), or in the second or third person (verbs). Thus, it is worth examining the relative perceptibility of weakening in such contexts.

In this study, we set out to establish the accuracy of native and non-native speakers in distinguishing various levels of aspiration and the threshold at which the grammatical status of a word becomes impossible to determine. We are also interested in the influence of the native language or dialect on the perception of aspiration strength. To answer these questions we designed an eye-tracking perception study in which three groups of participants – native speakers of an aspirating dialect of Spanish (20), native speakers of a non-aspirating dialect (20) and non-native speakers of Spanish – were confronted with a series of stimuli differing in phonetic structure and grammatical category. Two nouns and two verbs, each with a different final vowel preceding the weakened /s/ were used in 5 conditions differing in the duration of aspiration, from full aspiration to zero. We measured RTs, accuracy scores and pupil dilation to see how much difficulty was involved in each version of the task.

Our preliminary results show that varying the degree of aspiration affects perception and that different groups of speakers are differentially attuned to aspiration cues, which can translate into comprehension problems in communication and in L2 acquisition.

## **A study on the perception of consonants in Mandarin VCV utterances**

Rongru Chen, Maolin Wang

In continuous speech, formant transitions play an important role in the perception of consonants, and it was reported that listeners are capable of recognizing a consonant just by formant transitions in the vowel portion when the consonant was cut off ('t Hart & Cohen, 1964). This gating technique, i.e., to cut the utterance at various temporal positions and only portions of the utterance are presented to listeners for identification, was adopted by later researchers for the perception of consonants in languages like English (Grimm, 1966; Kurowski & Blumstein, 1987; Smits, 2000), Swedish (Ohman 1966), and Japanese (Furui, 1986).

In the present study, gating technique is used on the perception of Mandarin consonants, and utterances are gated both forwardly and backwardly. In forward gating the initial part of an utterance is presented, and in backward gating the final part is presented.

The original utterances are 11 VCV nonsense sequences, where the initial and final vowels are always /a/, and the intervocalic consonants include six stops /p, p', t, t', k, k'/, two nasals /m, n/, two fricatives /f, h/ and a lateral /l/. For both the forward- and backward-gated stimuli the cutoff points are at -80, -40, 0, 40, and 80 ms relative to the closure and release points, thus creating five forward-gated stimuli (closure stimuli) and five backward-gated stimuli (release stimuli) from each original utterance. The aim is to find the correct identification rate at various cutoff points for different consonants.

Thirty-three subjects, who were all native speakers of Mandarin Chinese, participated in the experiments. They were instructed to listen carefully to the gated utterances, and choose the correct consonants from a list of eleven choices. Each subject took part in ten experimental sessions, five for recognizing closure stimuli and five for release stimuli, so each gated stimulus were classified five times by each subject. Results show that for both closure and release stimuli, the recognition of nasals and stops are better than that of fricatives and lateral. For gated utterances 40 ms before closure point or 40 ms after release point, the performance for fricatives and lateral gets very poor. This is because that good fricative and lateral recognition requires at least some frication noise, while for good nasal and stop recognition, some of the formant transitions plus the neighboring vowels generally seems to be enough.

Key words: perception, consonant, Mandarin

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## Linguistic and nonlinguistic processing of Figure and Ground in motion events: Evidence from German and Korean

Soonja Choi, Florian Goller, Jeong-Ah Shin, Hongoak Yun, Alexandra Kroiss, Ulrich Ansorge, University of Vienna

Comparing between German and Korean speakers, we investigate variations in linguistic description and nonlinguistic behaviors (eye-gaze and memory) for motion events. In motion events (e.g., putting a cup on the table), the moving object (e.g., cup) is the Figure and the reference object (e.g., table) is the Ground. The two elements have distinct perceptual properties and assume conceptually asymmetric roles: Figure(F) is the entity moving along a trajectory (e.g., onto, into) whereas Ground(G) is the non-moving reference frame. We investigate (i) the degrees to which German and Korean speakers differentiate between F and G semantically (spatial terms) and syntactically (grammatical roles: subject, object) and (ii) their eye-gaze and memory patterns of F and G.

In the linguistic study, participants described dynamic video events involving two objects that systematically switched their F-G roles (e.g., put cup(F) on table(G) and put table(F) under cup(G)). German speakers used distinct spatial terms (e.g., auf, unter) for opposing F-G relations, thus encoding the F-G asymmetry. In contrast, Korean speakers used the same terms (e.g., kkita 'fit tightly') and the same syntactic constructions regardless of the switches in F-G roles. These crosslinguistic differences were more evident for Non-typical events (put table under cup) than for Typical events (put cup on table), showing that linguistic encoding interacts with speakers' everyday experiences of motion events. The differences also reflect language-specific spatial semantics and language-specific viewpoints of the Figure-Ground relation.

German and Korean speakers also differed in nonlinguistic behaviors: German speakers looked longer at the Figure particularly in Non-typical events (compared to Typical events), but Korean speakers showed no such difference. In the memory test, German speakers were better than Korean speakers in remembering which object moved, i.e., the Figure. We relate these nonlinguistic differences between German and Korean speakers to their differences in linguistic representation of Figure and Ground.

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## **Do visual cues to interrogativity vary between language modalities? An insight about Portuguese (Sign Language)**

Marisa Cruz, Sónia Frota, University of Lisbon

Marc Swerts, Tilburg University

In spoken European Portuguese (EP), eyebrow raising was considered to be a question marker, as it is the dominant visual cue for questions across varieties (Cruz, Swerts & Frota 2015). In Portuguese Sign Language (LGP), questions are conveyed by a specific facial (and body) expression (Amaral et al. 1994), and non-verbal correlates for intonation are conveyed by the face, head and upper body (Morais et al. 2011), but no detailed information on the prosodic role of non-manuals is available. For other sign languages, it was shown that eyebrow movement is a question marker that varies across question types. In most sign languages studied, however, wh-questions are marked by eyebrow lowering (Pfau & Quer 2010, Dachkovsky & Sandler 2009).

The present study explores the role of non-manuals in conveying interrogativity in LPG. Native signers were videotaped while performing an adapted version of the Discourse Completion Task for LGP. We selected 4 statements, 5 information-seeking yes-no questions and 4 information-seeking wh-questions, produced by 5 signers. A total of 65 LGP productions were annotated in ELAN, with detailed information on eyebrow and head movements, time-aligned with manuals.

Results showed that eyebrow lowering is the dominant non-manual conveying interrogativity (Figure 1), but head can also play this role together with eyebrows. Interestingly, besides the interrogative pronoun manually articulated, wh-questions differ from yes-no questions in the head movement type: up in the former and, if present, up-down in the latter (Figure 2). Thus, in contrast with other sign languages, eyebrow movement does not vary across question types in LGP. However, similarly to most sign languages, wh-questions are marked by lowered eyebrows. Finally, interrogativity in LGP is conveyed by the same visual element as in spoken EP, but with opposite movements, which suggests its grammaticalization in both language modalities.

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## Morphosyntactic variation in the L2 English of LGBTQ+ Polish migrants

Nathaniel Dziura, The University of Sheffield

Acculturation is a speaker's involvement and immersion in the culture associated with their second language (L2). Acculturation level can influence adoption of native speaker-like qualities in L2 learners (Schumann, 1986). Individual migrants' motivations and attitudes can also affect production of native-like L2 morphosyntactic variants (eg. Howley, 2015; Ryan, 2018). Research on language and social meaning has suggested that, in interpersonal communication, speakers use language to facilitate identity creation and achieve this by articulating particular social stances and personae (eg. Bucholtz & Hall, 2005; Podesva, 2007). However, it is not entirely clear to what extent intersecting social identity factors - for example, sexuality and gender - might influence production of different variants. Given all of this, it follows that the attitudes and motivations associated with LGBTQ+ community membership might impact LGBTQ+ migrants' production of native-like L2 morphosyntactic variation.

My ongoing study explores the interplay of these factors in Polish L2 English-speaking migrants within the UK. Participants will be adult native speakers of Polish who are advanced L2 English speakers. Given cultural and political differences between Poland and the UK, usage of native-like morphosyntactic variation will be compared alongside participants' British acculturation levels, and their attitudes towards Polish and British culture.

In this ethnographically-motivated participatory methodology, participants will be split into two groups: 9 LGBTQ+ Polish migrants, and 9 non-LGBTQ+ Polish migrants, respectively. Each group will meet weekly to socialise and generate resources for prospective migrants, advising them about navigating their respective identit(ies) within the UK. This research will primarily be informed using auditory production data collected during these meetings. This will be supplemented with data collected from perceptual matched guise tasks, map tasks, and grammaticality judgement tasks, which will enable more controlled examination of participants' linguistic usage and perceptions. My poster will outline the methods and preliminary findings obtained from pilot research.

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## Language attitudes in adolescence – A cross border study into the perception of standard language and dialect among secondary education pupils

Christian Gewering

Research on language attitudes has shown the importance of adolescence as a key period of attitudes changes. Especially the increasing orientation towards the own peer-group seems to have a big impact on the language attitudes of adolescents. In 2017 a cross-border study was conducted in the German-Dutch border region, aiming to examine the changes happening during adolescence. Secondary education pupils between 11 and 18 were tested using a speaker evaluation test based on the mixed-guise technique. The informants listened to different standard and vernacular varieties and rated them by means of 13 variables (e.g. intelligence, trust, humour etc.). This presentation will give an overview of some of the most important results of the study by focussing on the age factor.

The data was reduced by applying Principal Components Analyses (PCA), showing the well-attested distinction between prestige and solidarity in the overall results. However, an examination of the age factor reveals clear changes between the different age groups which can often be related to the (psycho)social development of adolescents. These changes include a peak in peer-group orientation in the age groups 13-14 and 17-18 (e.g. shown in covert prestige for the vernacular varieties), and an increasing appreciation of the standard language of the respective neighbour country as the children grow older. Furthermore, the results reveal interesting differences between the Dutch and German informants, as the Dutch adolescents generally seem to have a stronger preference for prestigious varieties.

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## Dialogue with Artificial Intelligence: Methods in Human-Computer Interaction Research

Netaya Lotze, Anna Konstantinova WWU Münster

AI-based assistants like Apple's *Siri* or Amazon's *Alexa* are entering our everyday life, chatbots and social bots like Twitter-bot *Tay* are influencing public discourse, and interactive toys equipped with dialogue function are bringing the youngest generation to interaction with AI. This is a completely new form of dialogue and we hardly understand how it works.

The poster stand consists of three posters created to demonstrate different methodological approaches to study human-computer interaction (HCI) (see Figure 1). The posters contribute to the following topics: 1) Field studies in human-computer interaction research (Dr. Netaya Lotze), 2) Experimental research design in human-computer interaction (Anna Konstantinova), and 3) Practical implementation of the findings: Dialog design and usability studies (Vera Neufeld). We believe that using various methods of data collection and analysis will allow us to provide the first description of this new form of dialogue, including phonology, lexis, syntax, semantic, dialogue coherence, user-perception and media linguistic factors.

The first poster presents two mixedmethod studies (Conversation analysis/Corpus linguistics) on written HCI, where the users' linguistic behavior during communication with a) Chatbots (Lotze 2016) and b)'Social Bots' is analyzed. Results of the study suggest that HCI cannot be described as a homogenous form of interaction, and it depends on such factors as application context and user type. The second poster displays the methods of analyzing experimentally elicited spoken data, namely dialogues between users and Amazon *Alexa* Echo (Intonation/Topic-Focus relation/Dialogue-repair strategies). This poster provides a glimpse into the data from the pilot study and shows some preliminary trends in the way subjects deal with miscommunication. Finally, the third poster is aimed at demonstrating the scenario of implementing the basic principles and findings to program linguistically sensitive Chatbots (e.g. *Naviki*, Lotze & Neufeld). Based on the analysis, we suggest that the major findings from the field and experimental studies are applicable to dialogue design in chatbots, e.g. in *Naviki App*.

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## Cross-dialectal perception of lexical stress: evidence from Indian English

Olga Maxwell, University of Melbourne

Robert Fuchs, University of Hamburg

Previous research on cross-dialectal speech processing indicates that listeners familiar with a particular source of variation have both processing benefits (e.g. better sensitivity to unfamiliar contrasts; Cutler 2012) and processing costs (competition among variable multidialect representations; Clopper 2014). It has been shown that in British and Australian English (BrE/AusE), lexical stress provides important cues for lexical activation (Cooper et al. 2002, Mattys & Samuel 2000). However, little is known about the processing of lexical stress in post-colonial Englishes.

The present study examines the perception of lexical stress in disyllabic words by adult speakers of Standard Indian English (IndE), a variety that is underresearched with regard to stress production and perception and is thought to have greater variability in stress assignment in comparison to BrE/AusE. 28 proficient, educated speakers of IndE were presented with 21 truncated word pairs with segmentally identical first syllable and different lexical stress location (replicating Cutler et al. 2016). One member of each pair had primary stress on the first, while the other had stress on the second syllable (e.g. syllable car- in CARTon vs carTOON). Participants heard only the first syllable and had to decide which syllable was stressed.

Results show that in iambic words (second syllable stressed), participants perform at about 54% accuracy, regardless of social background. In trochaic words, participants with private schooling perform significantly better (60% accuracy;  $p < 0.05$ ) than those with a government school background, approaching the level of accuracy reported for Australian English listeners (Fig.1). Our results suggest that processing of the commonly occurring trochaic condition is easier for participants from private schools, while processing of the rare iambic pattern is not eased by such experience. L1 background and onset of learning English show no systematic effect on participants' performance, suggesting that variability in Standard Indian English is shaped mainly by schooling.

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## Reversed Conceptual Transfer of Gender Concepts in German/Dutch Bilinguals

Joanna Porkert, Hanneke Loerts, University of Groningen  
Dietha Koster, WWU Münster

This project investigated whether different underlying gender concepts arise based on different grammatical and lexical gender in German and Dutch. The way gender is represented in language seems to have an impact on general gender conception: Backer & Cuypere (2012) demonstrated that related languages can show differences in how masculine occupational and non-occupational nouns are perceived as rather including only male persons (German) or as being of generic nature (Dutch). Boroditsky et al. (2003) detected that the semantic perception of inanimate objects is influenced by different grammatical gender categorization in Spanish and German.

This project aimed at replicating this study by Boroditsky et al. (2003) with German and Dutch nouns of different grammatical gender (e.g. der Apparat vs. het apparaat). However, the results showed clearly that no grammatical gender categorization effects emerged.

Furthermore, a self-paced reading task was performed which can display longer processing times of readers when processing something unexpected (Jegerski, 2014). With this on-line method, it could be demonstrated that an occupational noun in masculine form like der Arzt/de arts ('the doctor') evoked different expectations in terms of the referent's gender for Dutch L1 and German L1 speakers.

Both tasks were not only performed by Dutch and German L1 speakers, but also by Dutch L1 learners of German and German L1 learners of Dutch of different proficiency levels. The results suggest that being a highly proficient speaker of an L2 that differs in lexical gender has an influence on general gender concepts in the L1 (comparable to findings of Athanasopoulos et al., 2015 on motion event cognition). By employing a psycholinguistic method, this study showed that there are no categorization effects based on grammatical gender, however that learning a typologically different L2 might impact general cognition in the L1 and that masculine generic nouns do not exist in German.

Keywords: grammatical gender – lexical gender – bilingualism – transfer effects

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## Transcription-independent measurement of pronunciation difference

Caitlin Richter, University of Pennsylvania

We calculate an overall acoustic pronunciation difference between comparable samples of speech. When listeners judge ‘how different’ an accent sample is from their own, judgements correlate to the computed difference between phonetic transcriptions of the relevant accent pair using Levenshtein distance (1) and/or distributional information.(2,3) Our speech-based measure may match judgements better than existing minimally-transcribed methods, (1,4) without the labour and information loss of transcription.

**Measure.** The difference measured between samples is their dynamic time warping cost; this optimally aligns two recordings of different lengths, and returns their length-normalised difference along the alignment path. Speech is represented as frames of Mel frequency cepstral coefficients from HTK, using cepstral mean-variance normalisation (CMVN; z-scoring) per speaker, with silence (detected with HTK) automatically trimmed. Because CMVN did not neutralise gender variation, we compute same-gender sample pairs only, following improved results (1,4) with this separation, and final score was adjusted for gender by a linear regression model.

**Validation framework.** Measurements are compared with perceptual data (2) from US English native-speaker participants rating nativeness↔foreignness of test paragraphs read by various global speakers. Our method is validated in the experimental setup originally devised for a transcribed measurement.(2) A test recording’s foreignness-to-US-speakers is the average of its difference from each of a set of US English reference recordings. This aggregate ‘listener’ model illuminates general patterns while minimising idiosyncratic features, important in acoustic comparison with imperfect speech signal normalisation.

**Results.** Our measurement finds correlation  $r = -0.66$  ( $p < 0.001$ ) with human-judged nativeness, fitting perception better than acoustic methods with word-level transcriptions on other datasets.(1,4) It falls short of today’s best fully-transcribed methods with the same English data, (2,3) and we continue to work towards measuring only relevant variation in speech. Current results establish that automated transcription-independent pronunciation difference merits development, and is already an effective addition to available low-cost measurements.

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## **The impact of cross-cultural contact on behavioural and linguistic taboos in Igbo and Anaañ boundary localities**

Ememobong Udoh, Department of Linguistic and Nigerian Languages, University of Uyo, Nigeria  
Nsidibe Usoro, Department of Sociology and Anthropology, University of Uyo, Nigeria

It is natural for some form of change to occur in any system that experiences co-habitation or contact at some point in time. In this case, when people of two different cultural backgrounds get in (consistent) contact overtime, there is a possibility for cultural adaptation on either or both sides. It is a known fact that taboos, which are deeply rooted in the culture and traditional religion of the African societies, have been a vital component of African religion and culture. Based on proximity-induced cultural contact between the Anaañ people of Akwa Ibom State, South-south Nigeria, and Igbo people of Abia State, South-east Nigeria, we investigate the differences that exist between the linguistic and behavioural taboos in the boundary communities of Anaañ and other communities of Anaañ not located at the boundaries with Igbo. This is aimed at ascertaining whether these areas of differences constitute the areas of similarities with the taboo practices of the Igbos. By so doing, we hope to establish the points of convergence and divergence in the traditional religion and culture of Anaañ and Igbo. Data for the study were collected using stratified sampling to study preponderantly elders of both cultures in different boundary communities – Ikot Uko Ika in Akwa Ibom State with neighbouring Azumini in Abia State, and Ikot Umo Essien in Akwa Ibom State with neighbouring Ngwa in Abia State. The analysis of findings is done using the Intercultural Communication Theory. Preliminary findings show that some linguistic taboos are common to boundary communities in Igbo and Anaañ but strange to other non-boundary (especially polar) communities that share the same language. Ongoing investigation is on the state of behavioural taboos as well as other linguistic taboos in these contact communities.

**Key words:** Boundaries, culture, cross-cultural contact, linguistic taboos, behavioural taboos.