Language External Factors as Predictors in Language Processing (Poster)

Stefanie Jannedy[1], Felicitas Kleber[2] & Melanie Weirich[3]

[1] *Leibniz-Zentrum Allgemeine Sprachwissenschaft, Berlin,* [2] *Universität München,* [3] *Universität Jena*

jannedy@leibniz-zas.de, kleber@phonetik.uni-muenchen.de, melanie.weirich@uni-jena.de

It is assumed that prediction based on probabilistic inferences is a characteristic feature of language processing. Yet, audio-visual integration work shows that language processing can be manipulated and altered through real but also suggestive evidence like the presence of an experimenter speaking a different dialect than the tested person (Brunelle & Jannedy 2013) and co-occurring visually presented information (Hay & Drager 2010) evoking concepts or prejudices. Thus, information present in the ambient environment influences sound processing and contributes to the probabilistic inferences drawn. Moreover, there are individual differences in the probabilistic inferences drawn based on personal experiences, cultural differences and social factors. In our work, we have investigated the influence of language external factors such as shared social knowledge about gender, regional and social variation on language processing.

Jannedy & Weirich (2014) showed that co-presented names of Berlin neighborhoods (multi- vs. monoethnic) caused differential perception of the fricative /ç/ revealing the relevance of exploring intra-individual differences and stylistic diversity. Inter-listener variation was found between age groups: the perception of /ç/ as /ʃ/ in the context of a visually presented name of a multi-ethnic district was more prevalent in older listeners. Thus, dependent on their prior language experience and the information in the ambient environment, listeners attach different probabilities to each variant and make different predictions. Kleber at al. (2018) tested a morphed vowel continuum from *Wicht* to *wischt* in German with a fricative intermediate between /ç/ and /ʃ/. They tested the predictions listeners derived from visual stimuli typical for the Northern German dialect where both /ç/ and /ʃ/ are distinctive phonemes and the Hessian dialect where /ç/ and /ʃ/ have merged to /ʃ/. With Hessian primes, there were more /ʃ/ responses and perception was less categorical and showed greater confusion. Results indicate that respondents integrated their world knowledge when categorizing these two words. Moreover, Weirich & Simpson (2018) detected inter-individual differences in gender specific phonetic variation and showed that self-ascribed masculinity ratings contribute to the variability found within the same gender.

Our work shows that language processing has to take into account language external factors as predictors, such as shared cultural believes including those mediated by age, gender, regional and social differentiation like accent or sociolects or stereotypes of speakers and listeners and the specific situational contexts.

Selected references: Jannedy, S. & M. Weirich (2014). Sound change in an urban setting: Category instability of the palatal fricative in Berlin. Laboratory Phonology 5.1, 91–122. Kleber, F., Lowery, M. & Stegmaier, R. (2018) The production and perception of the German /s, c, ʃ/ contrast. Proc. of P & P. Berlin. Weirich M. & Simpson, A. (2018). Gender identity is indexed and perceived in speech. PLoS ONE 13(12):e0209226. DOI:10.1371/journal.pone.0209226

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