

Tonal Alignment in German and the Issue of Cognition

Dominic Schmitz^{*1}

*Corresponding Author: dschmit5@smail.uni-koeln.de

¹CCLS, University of Cologne, Cologne, Germany

Northern varieties of German show earlier peak alignments in nuclear pitch accents compared to southern varieties of German (e.g. Mücke, Grice, Becker, & Hermes, 2009). Speakers of Northern Standard German (NSG) align L+H* pitch accents on average 33 ms earlier than speakers of Southern Standard German (SSG). However, there are no suitable answers to the following questions yet: (1) Why is there a difference in tonal alignment between NSG and SSG? (2) How is this subtle difference acquired by L1 speakers of NSG/SSG? (3) What impact does this difference have for other phonetic/phonological effects? To answer the second question, a first pilot study was conducted. The aim of this pilot was to understand whether L1 speakers of German are able to actively differentiate between early and late tonal alignment. Within this study, participants listened to utterances of the word “Marie” [mɐ. 'vi:]. To obtain comparable versions of the utterance, a speaker was recorded uttering it in different contexts, but always with a realized L+H* pitch accent in nuclear position. Then, an average L+H* accent was computed and modelled onto one utterance of the word. This averaged alignment of the L+H* pitch accent was then manipulated in four different ways to represent the NSG and SSG variety, and – for a more drastic difference – modelled onto the start/end of the word. Results show native speakers of German are not able to discriminate earlier and later pitch alignment (all results are at chance level). Although not perceivable, L1 speakers acquire the specific tonal alignment configuration of their environment; hence cognitive mechanisms must exist at some level, i.e. exemplar models may offer a partial answer (e.g. Johnson, 1997). Moreover, earlier/late alignment patterns may influence certain other phonological structures (Ladd, 2008; Schmitz, Cho, & Niemann, to appear).

Johnson, K. (1997). Speech perception without speaker normalization. In K. Johnson & J. Mullennix, (Eds.), *Talker variability in speech processing* (145-165). San Diego, CA: Academic Press. doi:10.3758/APP.72.5.1218

Ladd, D. R. (2008). *Intonational Phonology*. Cambridge: Cambridge University Press.

Mücke, M., Grice, M., Becker, J., & Hermes, A. (2009). Sources of variation in tonal alignment: Evidence from acoustic and kinematic data. *Journal of Phonetics*, 37, 321-338. doi:10.1016/j.wocn.2009.03.005

Schmitz, D., Cho, H.-E., & Niemann, H. (to appear). Vowel shortening in German as a function of syllable structure. *Proceedings of Phonetics and Phonology in the German-Speaking Countries (P&P 13)*, Berlin: Humboldt-Universität Berlin.