
Perceptual Asymmetries of the /e:/-/ɛ:/ Contrast in Tübingen

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The treatment of Standard German /e:/ and /ɛ:/ (e.g., *Beeren* ~ *Bären*, ‘berries ~ bears’) as separate phonemes is codified and accepted as an aspect of standard German pronunciation. However, there exist tendencies towards a merged pronunciation of the two phonemes in various parts of the German-speaking world; this variation has led to ongoing debates (cf. Block et al., 2024) on whether the Standard German phoneme /ɛ:/ exists. While existing research (e.g., Kiesewalter 2019) has focused on the sociolinguistic variations of /e:/ and /ɛ:/, few studies have experimentally tested phonemic perception of this contrast.

We present findings from two psycholinguistic tasks (cf. Frank 2024) that examine phonemic perception of the /e:/ ~ /ɛ:/ contrast in speakers from Tübingen, a city in south-west Germany (Baden-Württemberg). 22 German speakers performed identification and discrimination tasks on the minimal pairs *Beeren/Bären* (‘berries/bears’) and *Segen/Sägen* (‘blessing/sawing’). In the identification task, participants heard a stimulus containing either the sequence /bVrən/ or /zVgən/ in which the critical vowel differed across an 11-step continuum (e.g. 100% *Segen*–0% *Sägen* to 0% *Segen*–100% *Sägen*). In the discrimination task, participants heard a sequence of pairs of the same stimuli, varying in similarity by up to three steps – ranging from a pair with both elements 100% *Segen*–0% *Sägen* to a pair with both elements 0% *Segen*–100% *Sägen* – and judged whether the two elements of each pair were same or different.

Results for the identification task showed a strong effect for Openness ($\chi^2=3343.05$, $p < .0001^*$): as openness increased, participants were more likely to answer /ɛ:/ for both minimal pair groups. This suggests that our speakers generally maintained /ɛ:/ as a robustly separate phonemic category to /e:/ in perception. There was also a weak interaction between Openness and Minimal Pair ($\chi^2=18.83$, $p = 0.0424^*$). In the discrimination task, there was an interaction between midpoint and Minimal Pair ($\chi^2=49.82$, $p < .0001^*$): word pairs containing identical closed vowels in the *Beeren/Bären* (i.e., *Beeren1–Beeren1*) group elicited more same responses, and word pairs containing identical open vowels in the *Beeren/Bären* group elicited fewer same responses than the *Segen/Sägen* group. These results will be discussed in relation to representations of phonemic variants in these speakers.

References. Kiesewalter, C. (2019). *Zur subjektiven Dialektalität regiolektaler Aussprachemerkmale des Deutschen*. • Frank, M. (2024). Phonemzusammenfall im gesprochenen Standarddeutsch? Experimentalphonetische Untersuchungen zu /e:/ und /ɛ:/. [Manuscript in preparation]. Carl von Ossietzky Universität Oldenburg. • Block, A., K. Predeck, M. Frank & C. Arnett (2024). Between phonetic variation and phonological inventory: the perception of the /e:/-/ɛ:/merger in German. *Interfaces of Phonetics* 38, 71.