Supplementary materials

Post-hoc power analyses

Post-hoc power analyses were conducted on the first 10 “pilot” participants to determine appropriate sample sizes. The mixedpower function from the mixedpower package was used for the analysis (Kumle et al., 2021). The effects of a clmm and an lmer model on both datasets were similar, so we could continue fitting an lmer model on our data. The code for these analyses are publicly available at OSF (see https://osf.io/r8hck/?view_only=c07896d7a6214acead46b5d3880d75b8).

For the first analysis, an lmer model was fitted on the valence ratings with accent, type of valence and their interaction as fixed effects. Participants and items were added as random effects and a random slope of accent by participants was also included. Power was estimated over two different sample sizes: 40 (our current sample size) and 80 (as requested by an anonymous reviewer). A $t$-value of 2 was determined as the significance threshold. The power analysis showed no differences between the two sample sizes. Forty or 80 participants would allow for 2% or 3% power (contrast 1) and 99% or 100% power (contrast 2) to measure a plausibly-sized interaction between accent and valence.

For the second analysis, we fitted an lmer model on our arousal ratings with accent, type of arousal, and their interaction as fixed effects. Participants and items were included as random intercept and a random slope of accent by participants was also added. Power was estimated over two different sample sizes (40, 80). A $t$-value of 2 was determined as the significance threshold. The analysis showed that 40 or 80 participants would allow for 57% or 89% power to measure a plausibly-sized effect between accent and arousal. This shows an increase in
power with a larger sample size, however, our results already showed a significant interaction with the smaller sample size.


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Figure S1. Results of the post-hoc analysis testing the interaction between comprehensibility and accent on valence ratings.
Figure S2. Results of the post-hoc analysis testing the interaction between comprehensibility and accent on arousal ratings.