

Mediating Factors in Phonetic Imitation: Perceived Sexual Orientation

Introduction: Numerous studies have documented the phenomenon of phonetic convergence: the process by which speakers alter their productions to become more similar on some phonetic or acoustic dimension to those of their interlocutor. Nielsen (2007), for example, demonstrated a significant effect of implicit phonetic imitation for extended VOTs that was generalized to novel tokens. Pardo (2006) found that men were more likely to converge in a speech task than women and that conversation role also affects a speaker's likeliness to imitate. Though social factors have been suggested as a motivator for imitation, few studies have established a tight connection between these extralinguistic factors and a speaker's likelihood to imitate. Building on Pardo (2006) and Nielsen (2007), the present study explores the effect of one particular social factor, perceived sexual orientation, on the likelihood of imitation for extended VOT. Experimental results show that the extent of phonetic convergence (and divergence) depends on the perceived sexual orientation of the talker as well as the sexual orientation of the subject.

Methodology: The experiment contains three phases: A *baseline* block where subjects produced a list of 72 p/t/k-initial target words in the carrier sentence "Say ___ again" selected from the CELEX lexical database, evenly distributed by frequency and by place of articulation; a *test* block consisted of the same words plus an additional 72 words similarly balanced for frequency and place of articulation. In between the two production tasks, subjects listened to a constructed narrative where the 72 words from the baseline block were embedded; the narrative details the narrator's bad date from the previous night and contains no other stressed syllable-initial voiceless aspirated stops aside from the target words. Two minimally different versions of the narrative were created: one in which the narrator's date was female ('straight' condition), and one in which the narrator's date was male ("gay" condition). An adult male speaker of American English was recorded reading both gay and straight versions of the story. The "straight" recording was then manipulated in Praat to extend the initial VOT of each target word by 100%. The narrative used in the "gay" condition was created by splicing in appropriate names and pronouns from the "gay" recording to the extended-VOT recording. All subjects took a post-experiment survey which included questions about the subject's age, second language knowledge, assessment of own sexual orientation, attitude towards the story narrator's behavior, likelihood of behaving in the same way in a similar situation, and whether anything unusual was noticed in the narrator's speech. Fourteen undergraduate males who received either course credits or nominal cash took part in the study. Subjects were randomly assigned to each condition. Two recordings from the "straight" condition were lost due to equipment malfunction. A total of twelve sets of recordings were analyzed. VOTs of subjects' tokens from the baseline and test blocks were measured in Praat using both waveforms and spectrograms.

Results: The VOT data was analyzed using linear mixed-effects models. The resulting regression model contains eight fixed factors (BLOCK (pre- vs. post-listening), NARRATOR (gay vs. straight), NOVELTY (whether the word appeared in the narrative), POA (place of articulation of targeted initial consonants), FREQ (word frequency), SEXUALITY (subject's own sexual orientation assessment), ATTITUDE (subject's attitude towards the narrator) and TRIAL (the order in which the words were uttered in the baseline and test blocks) and two random terms (ITEM and SUBJECT). Focusing on the interactions that are of immediate relevance (Main effects included CONDITION, NOVELTY, POA, FREQ and TRIAL), there is a significant interaction between BLOCK and CONDITION ($\beta = -0.68$, $t = -3.74$), suggesting the way men phonetically converges with their interlocutor depends on the perceived sexual orientation of the talker; the way subjects adjust their VOTs after listening to the narrative differs depending on whether they heard a gay or straight narrator. A significant BLOCK x CONDITION x SEXUALITY interaction ($\beta = -0.43$, $t = -2.76$) was found, suggesting that the way perceived sexual identity affects the extent of phonetic convergence is mediated by the sexuality of the subject. In the "straight" condition, gay subjects showed higher degree of phonetic imitation than straight subjects. In the "gay" condition, however, regardless of the subject's own sexuality, phonetic divergence obtains (VOTs in the test block were shorter than those in the baseline block).

Conclusion: Taken together, the experimental findings show that phonetic imitation is not an automatic process. The likelihood and extent of phonetic convergence and divergence depends crucially on the (perceived) identity of the participants.