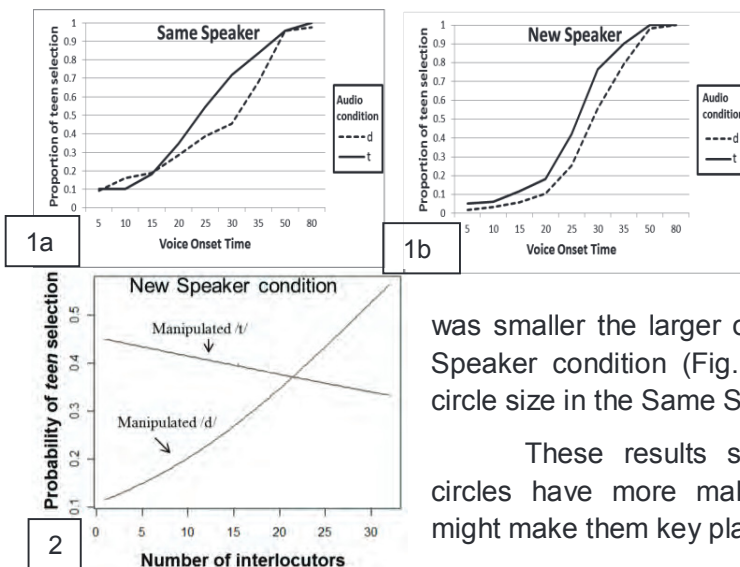## People with a small social circle have more malleable linguistic representations

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How are linguistic changes diffused across the community? We show that individuals with smaller social circles have more malleable linguistic representations. This suggests that they might play an important role in the diffusion of linguistic innovations. We propose that this greater malleability is due to the fact that receiving input from fewer sources leads to attributing greater weight to the informativity of each source.

To test whether individuals with smaller social circles have more malleable linguistic representations, we asked 148 participants how many people they interact with in a typical week, and then tested them in a perceptual learning paradigm. Specifically, we exposed participants to stops with a Voice Onset Time value that is intermediate between that of a /d/ and a /t/. These stops were embedded in contexts that disambiguated them as either /t/s (e.g., The female ?eacher; manipulated /t/ condition), or /d/s (e.g., the female ?ancer; manipulated /d/ condition). Participants' task in this exposure phase was to click on the picture that fits the description they heard. After completing the exposure task, participants performed a phoneme categorization task. Crucially, the recordings in this task were either of the same speaker as in the exposure task or of a new speaker.

Perceptual learning is manifested in different performance in the phoneme categorization task for participants in different audio conditions (manipulated /d/, manipulated /t/). When tested with the same speaker, perceptual learning indicates learning of the phonological categories of the speaker. An effect with a novel speaker, in contrast, indicates a general adjustment of one's phonological representations. We predicted that participants with a larger social circle would show less generalized perceptual learning with the new speaker, because they would assign less weight to the input they heard during exposure. In contrast, we predicted that social circle size would not influence performance with the same speaker, as it should not influence participants' ability to learn linguistic patterns or perform the task.

As predicted, results revealed an Audio Condition X Speaker X Social Circle interaction. This interaction reflected the fact that even though participants in both Speaker conditions showed perceptual learning (Fig. 1a &b), the size of the perceptual learning effect was smaller the larger one's social circle size was in the New Speaker condition (Fig. 2), but was not influenced by social circle size in the Same Speaker condition (not shown).

These results show that people with smaller social circles have more malleable linguistic representations. This might make them key players in diffusion of linguistic changes.