**If I approach this from the perspective of competition between adaptation 🡪 perceived relevance to the task (and thus where attention is directed), I feel this might fit this year’s HSP theme well; might be worth submitting the abstract without data?**

Being able to communicate using spoken language is instrumental in the classroom. Learning is dependent on listeners’ ability to extract information from verbal streams in their environment, and how they may then aggregate, process, and consolidate this information. Even adjusting to recognize a novel talkers’ sound production pattern, to account for the natural variation that exists across all talkers’ speech, relies on this ability.

this learning necessary even on the phonemic level

How attention may influence learning in lower-level speech processing

Despite being one of the most prevalent forms of human communication, how individuals speak is highly variable.

Even talkers with similar language backgrounds vary in how they produce speech sounds, for example how they may distinguish /s/ (the “S” sound) from /ʃ/ (the “Sh” sound). Yet listeners can often understand newly encountered talkers when hearing them speak for the very first time. Variation in speech presents a unique challenge for cognitive processing that is solved seemingly automatically: Our brains learn how talkers speak, and then apply this information to construct expectations about speech they encounter in the future. This process often occurs without the listener even noticing.

However, the degree of automaticity in speech perception adaptation remains unclear. While a large body of research has found that perceptual learning is not inhibited by distractions, lack of intention, or exposure to multiple talkers, other research has found that listeners do consider contextual factors and causality (e.g., accommodating a talker visibly chewing while talking) when learning how talkers speak. Furthermore, the utility of speech perception adaptation may also pose the possibility of listener’s prioritizing adaptation when there is a need to understand speech, versus passively sponging information from background noise in their environment.

In this experiment, we investigate how attention moderates listeners’ ability to adapt their speech perception.

and adaptation by limiting the participant’s available attentional resources.

To achieve this, we exposed participants to two English talkers simultaneously. These talkers have been synthesized to have distinct voices, and to produce inversely atypical sounds on the S-ʃ continuum in their speech (i.e., one talker produces their /s/ sounds more like “Sh,” and the other talker produces their /ʃ/ sounds more like “S”). Participants were instructed to perform a 2AFC LD task for one of the two talkers’ speech.

We then tested the effects of directing the participants’ attention during exposure to *one talker* on the participants’ ability to adapt their speech perception to *both talkers*. During the test phase, we measured how participants categorize sounds on the S-ʃ spectrum using a set of categorization tasks that feature a S-ʃ test continuum. We then compared how participants responded to this tasks for both talkers. If there are limits to the automaticity of speech perception, then we can expect listeners will adapt their perceived categorical boundary to align better with the attended talker’s speech compared to their adjustment for the unattended talker. Conversely, complete adaptation to both talkers could suggest that speech perception adaptation is automatically shaped by any speech in a listener’s environment. No matter which of these theories is supported by our results, this study has the potential to pioneer future paradigms for studying speech perception adaptation and develops a foundation for further research on how human cognition prioritizes speech processing in the natural environment.