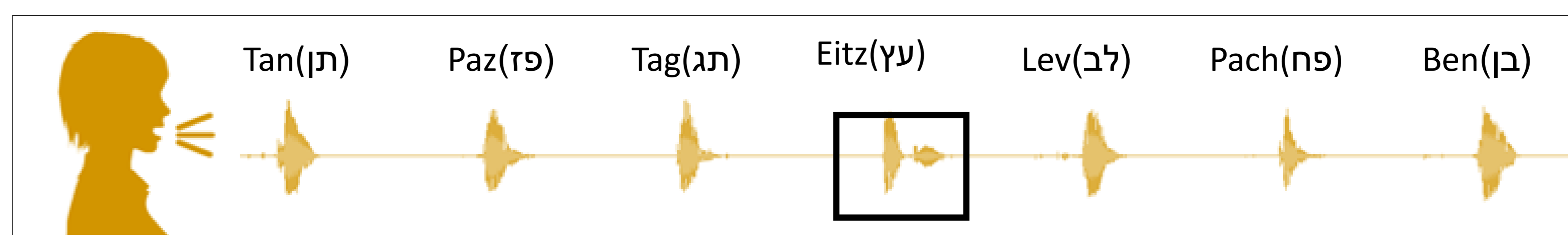


Background

- Multi-speaker environments are characterized by multiple concurrent sounds emitted from different sources, which create a cluttered acoustic scene.
- These sounds can be segregated from each other based on acoustic features (pitch, timbre etc.), and by spatial location
- The current study aims to investigate the capacity and limitations of human performance in two types of attentional tasks (Selective and Distributed) with a specific focus on the contribution of the **spatial separation** between concurrent speakers on performance.

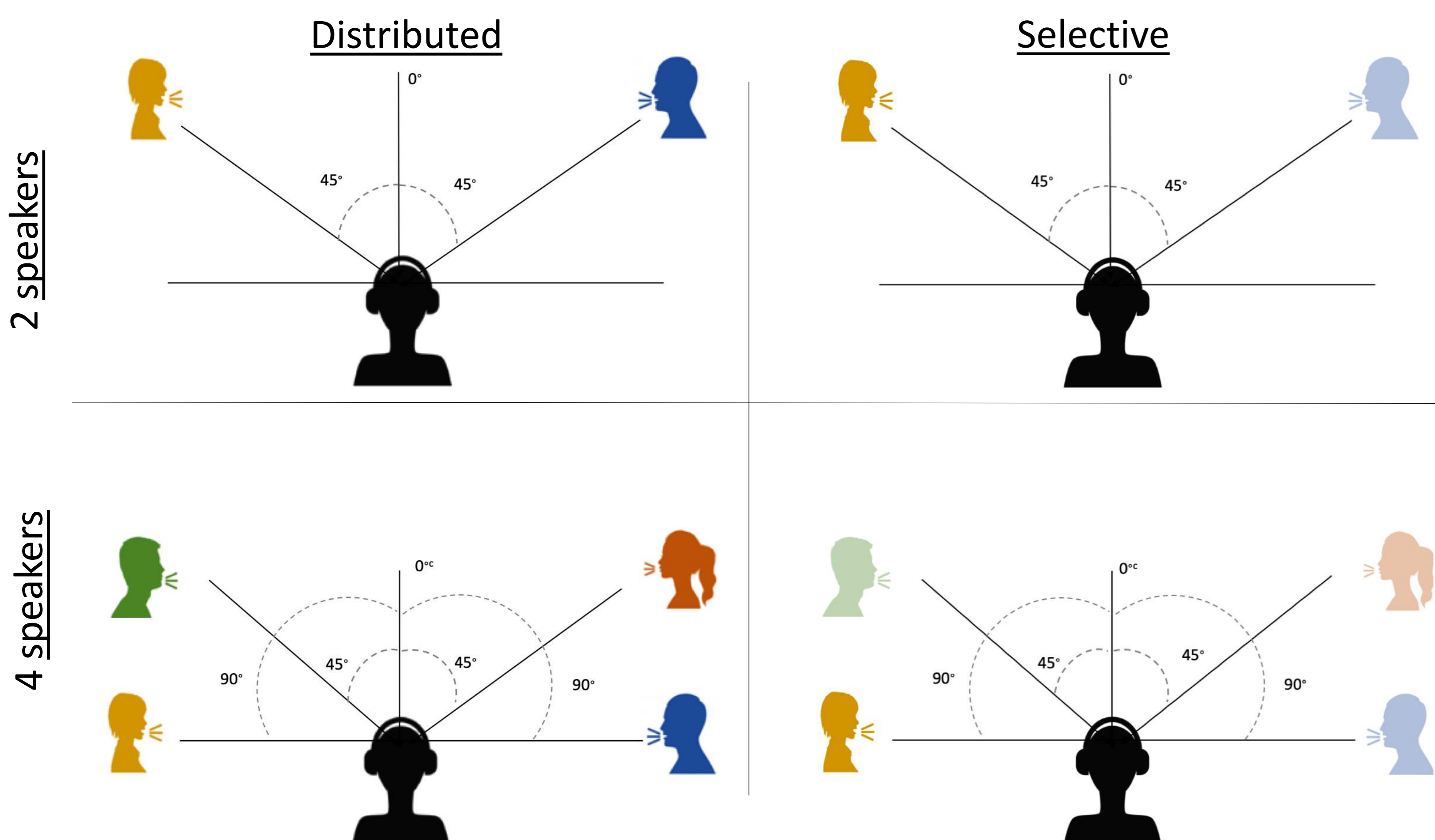
Methods

Sound Stimuli



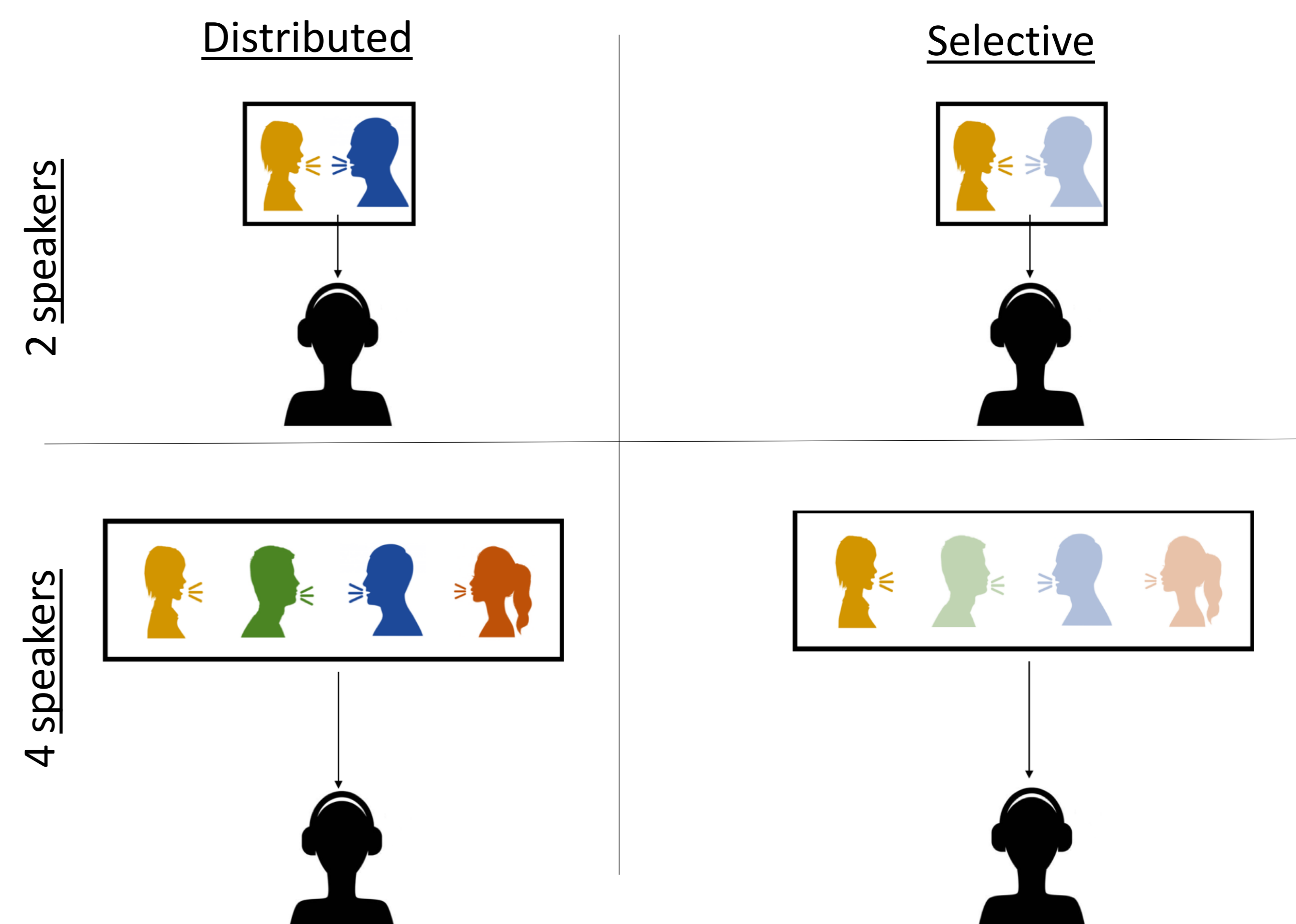
Spatial

N=27 (16 female)
Age= 23.3 ± 2.3



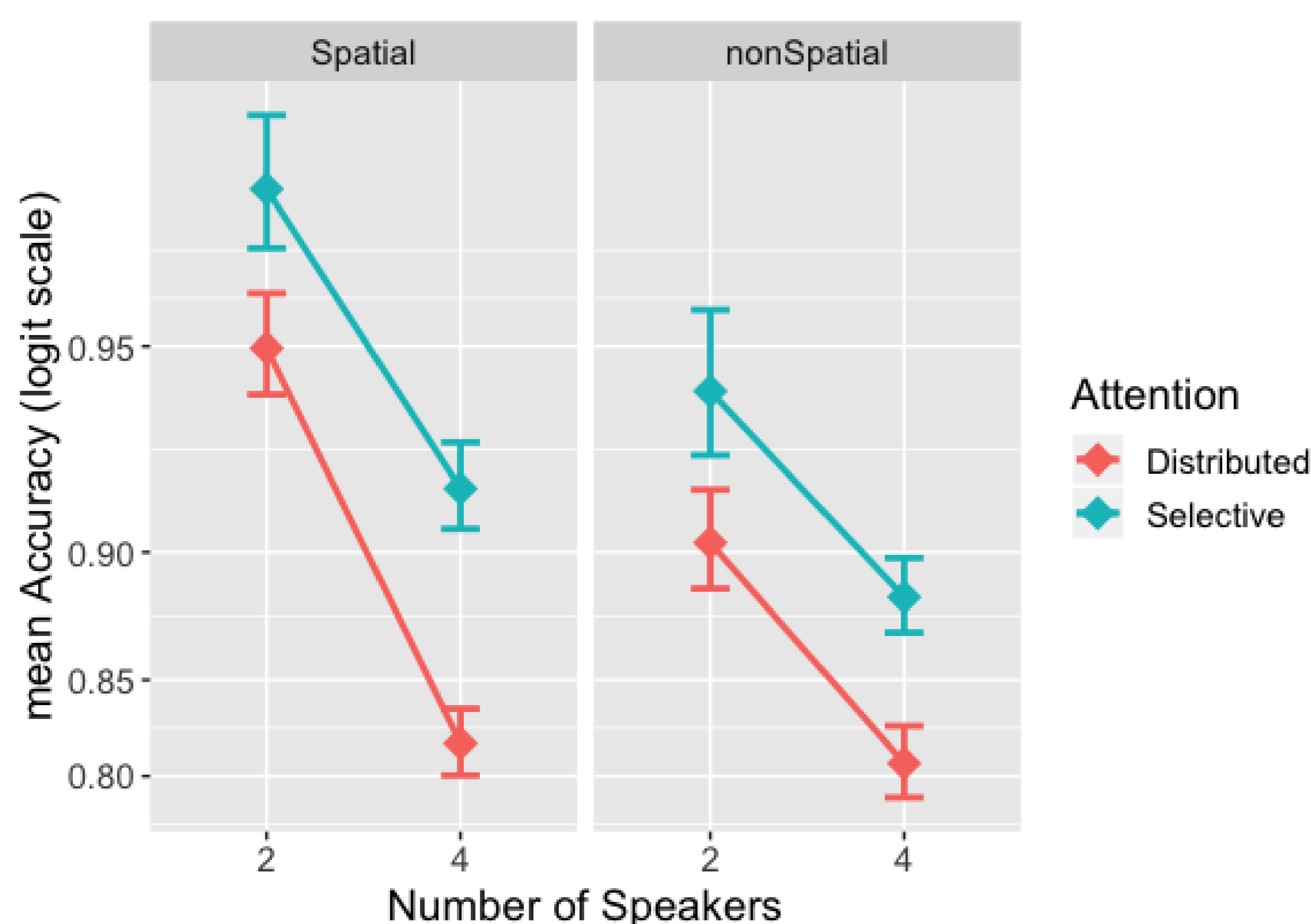
Non-Spatial

N=30 (21 female)
Age=23.5 ± 2.5



Results

Mean Accuracy Across Subjects



Conclusions

- We found increased performance in the group that heard the spatially separated concurrent speech streams compared to non-spatially separated streams.
- Since these two conditions differ only in this spatial component this could indicate that spatial segregation plays an important role in multi-speaker speech processing.
- Future studies can include this manipulation on the sound stimuli to create more ecological paradigms of the multi-speaker environment