

Processing Efficiency Across Verbal and Gestural Negation

While the word "no" is often considered the default rejective negative answer to polar questions¹, speakers use gestures, such as *headshakes*, *finger wags*, and *thumbs down*, to communicate denial². Still open: processing of these gestures (compared to verbal). This study investigated whether adults interpret these distinct negative cues with equal efficiency. We compared the processing of four negative cues: a *verbal "No,"* a *headshake*, a *finger wag*, and a *thumbs down*. Data were collected from 60 adult participants using a unimodal reaction time task, where participants responded to affirmative and negative cues via keypress to select the correct location of a target object (fig.1). We analyzed Mean Reaction Times (RT) for correct trials.

Descriptive findings (fig.2) show that *Headshake* was processed faster (Mean RT = 1162 ms) than each of the other cues including Verbal "no" (Mean RT = 1280 ms). The *Finger Wag* (1223 ms) also led to faster responses *Verbal "No"*, but slower responses than headshake. *Thumbs Down* was the cue with the slowest responses (1308 ms). Whether these differences reach statistical significance will be analyzed as soon as the preregistered sample of 65 participants is complete.

Our findings do not indicate a general processing advantage for speech over gesture, and point to differences across gestures. Processing advantage for headshake due to easy visual identification (unique movement) or highly conventionalized/emblematic in denial contexts (early occurrence in development); other gestures different paradigmatic meaning (prohibition, negative valence).

Outlook: Acquisition, Negative Questions (Semantic Contribution of Headshake), Multimodality

Fig. 1. Practice and Test Trials

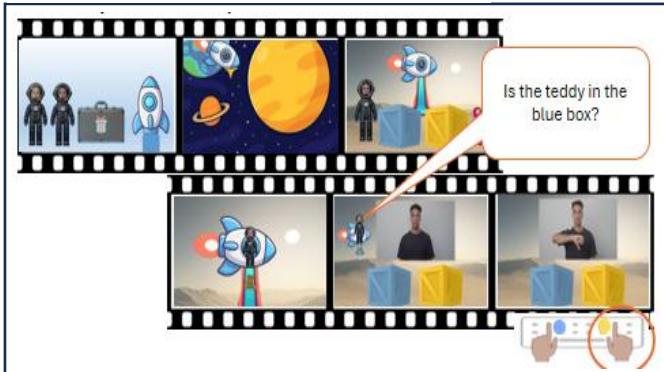
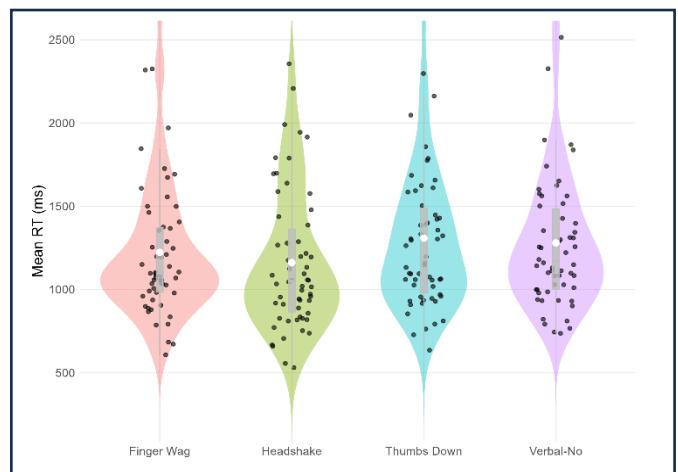


Fig. 2. Mean RT by Cue Type



References

1. Hamblin, C. L. (1973); Krifka, M. (2013); Roelofsen, F., & Farkas, D. F. (2015)
2. Fusaro, M., et al. (2011); Guidetti, M. (2005); Kettner, V. A., & Carpendale, J. I. (2013); Morgenstern, A., et al. (2018)
3. Austin, K., Theakston, A., Lieven, E., & Tomasello, M. (2014)