



Do global or local features make an abstract shape appear more “baba” or “kiki”?



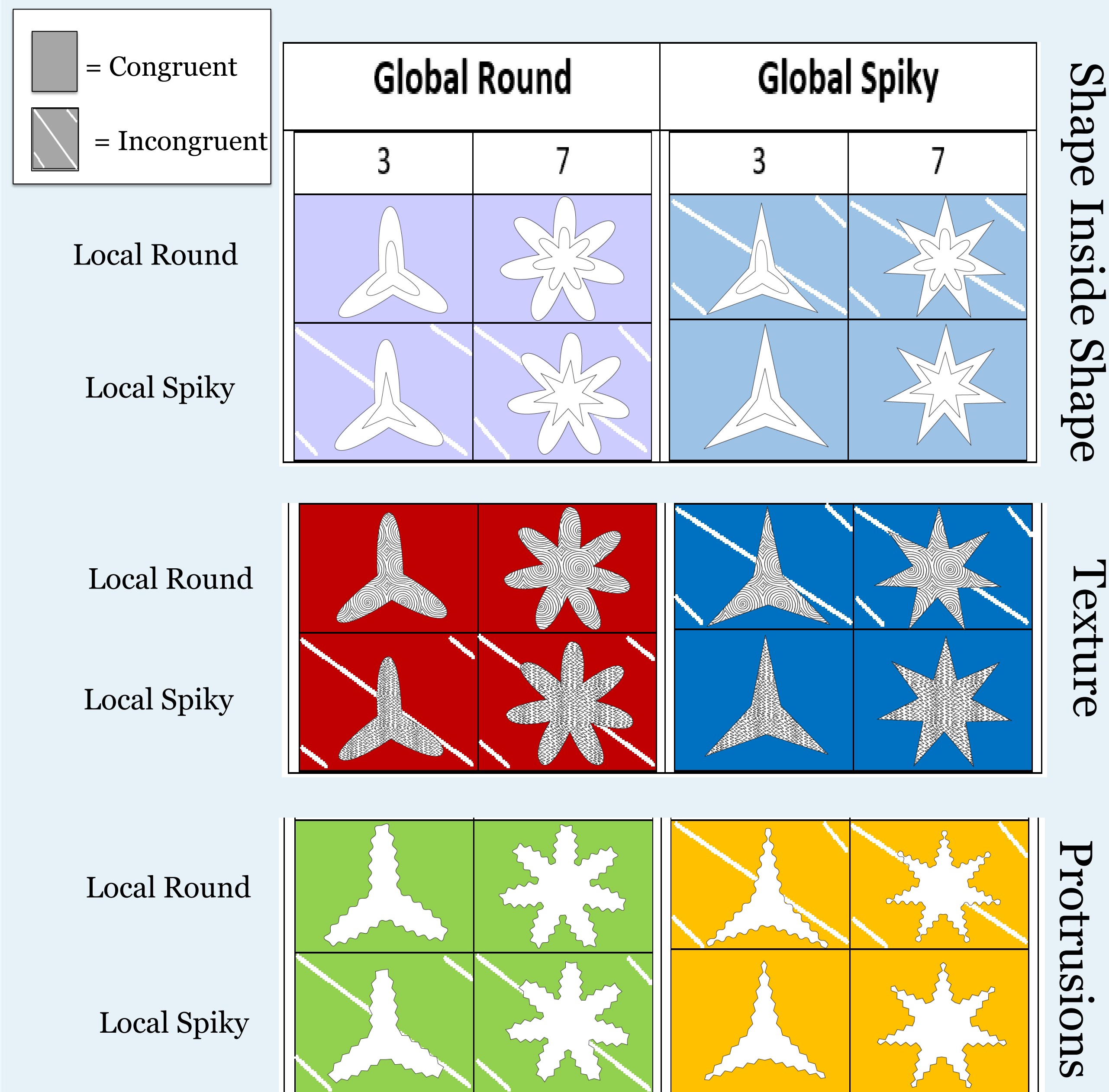
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Introduction

How information across our senses is related informs constraints on the efficient processing and integration of sensory stimuli. In one example, the “bouba-kiki” effect, rounded shapes are associated with pseudowords like “bouba”, while spikey shapes are associated with “kiki” (Köhler, 1929; Ramachandran & Hubbard, 2001). Interestingly, shape features, like protrusion number, size and spikiness, can be weighted differently based on culture (Chen et al., 2016), suggested to arise from differences in global/local perceptual processing style. We tested whether an ambiguous shape was perceived as more “baba” or “kiki” when global and local features matched or did not match.

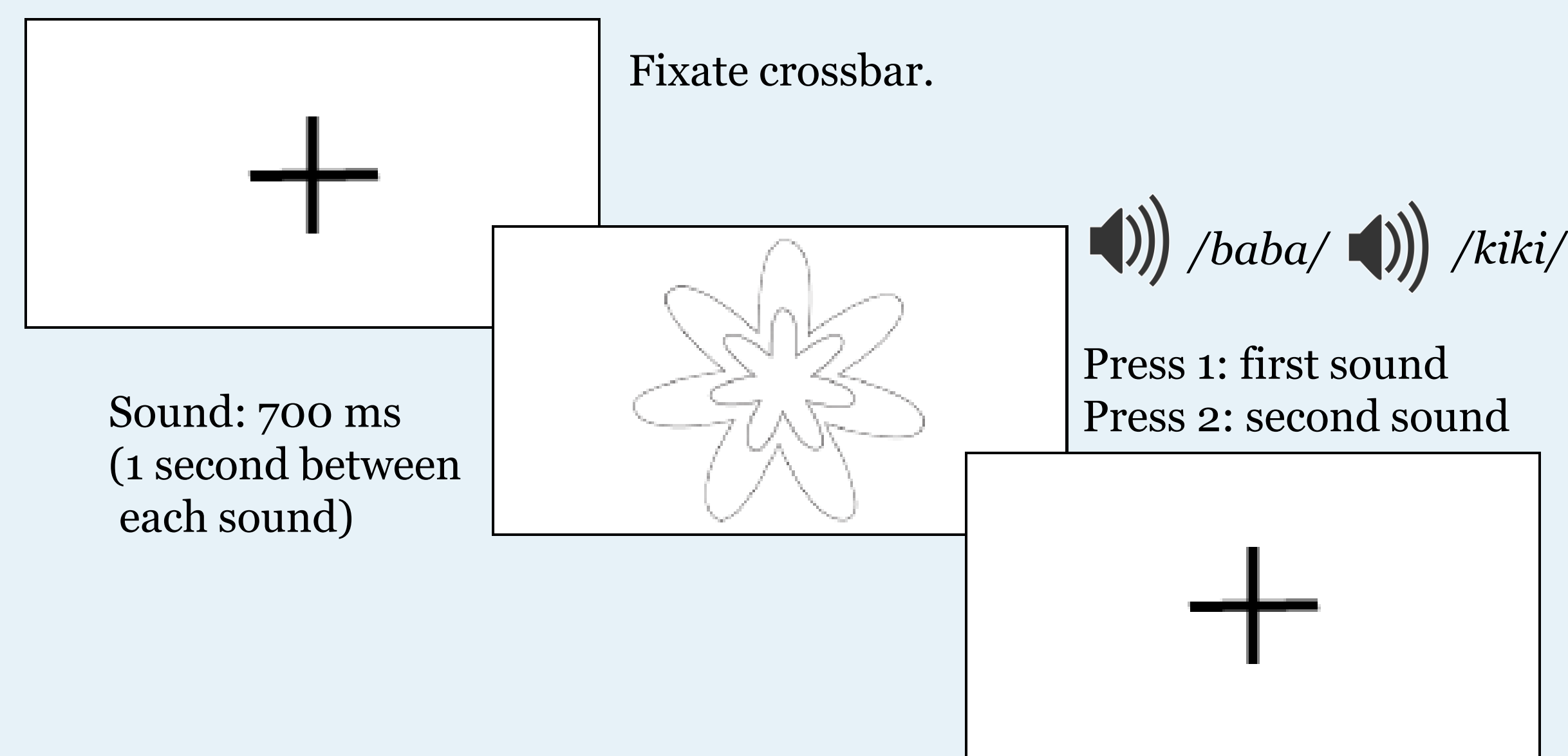
Based on previous reports of global biases in adults (Harrison & Stiles, 2009; Navon, 1977; Nayar et al., 2015), we expected adults to adopt global processing biases and identify shapes that were globally round as “baba”, even if they were locally spikey.

Stimuli



EXP 1: Methods

2-Interval Forced Choice (2IFC)

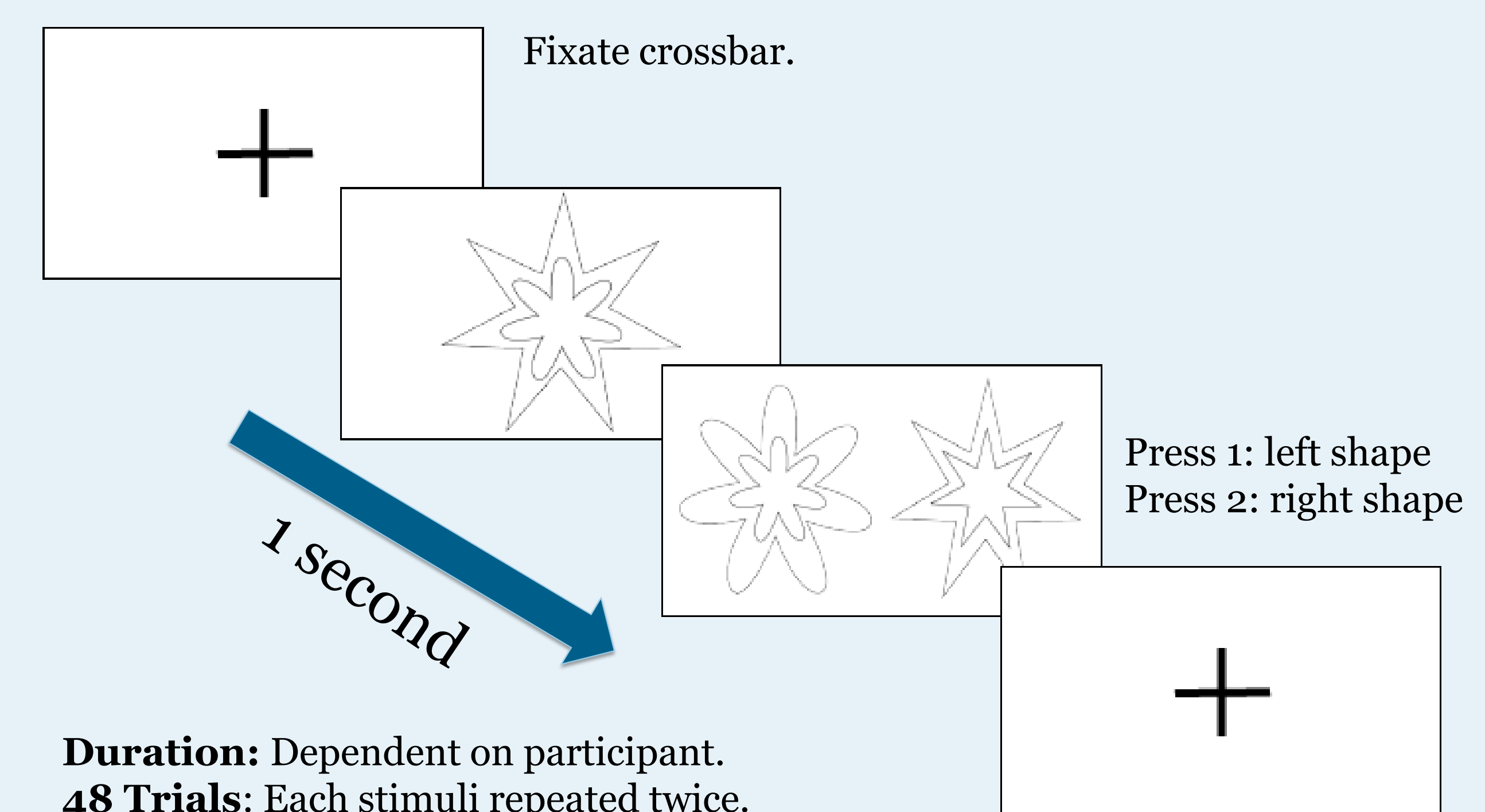


Duration: Dependent on participant.
48 Trials: Each stimuli repeated twice.

N=16 (14 Female, 2 Male)
Mean Age: 24.66 years

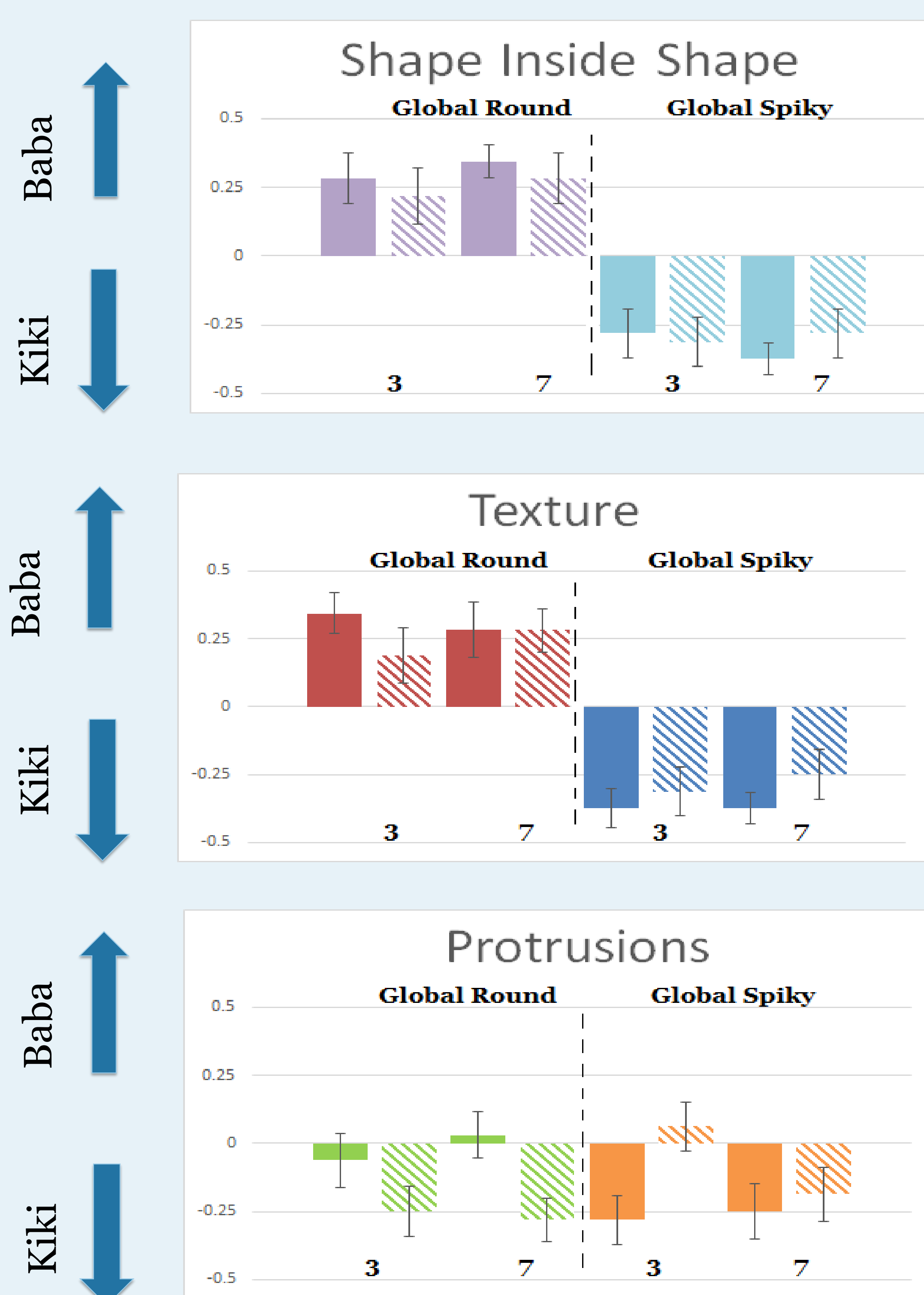
EXP 2: Methods

Match-to-Sample



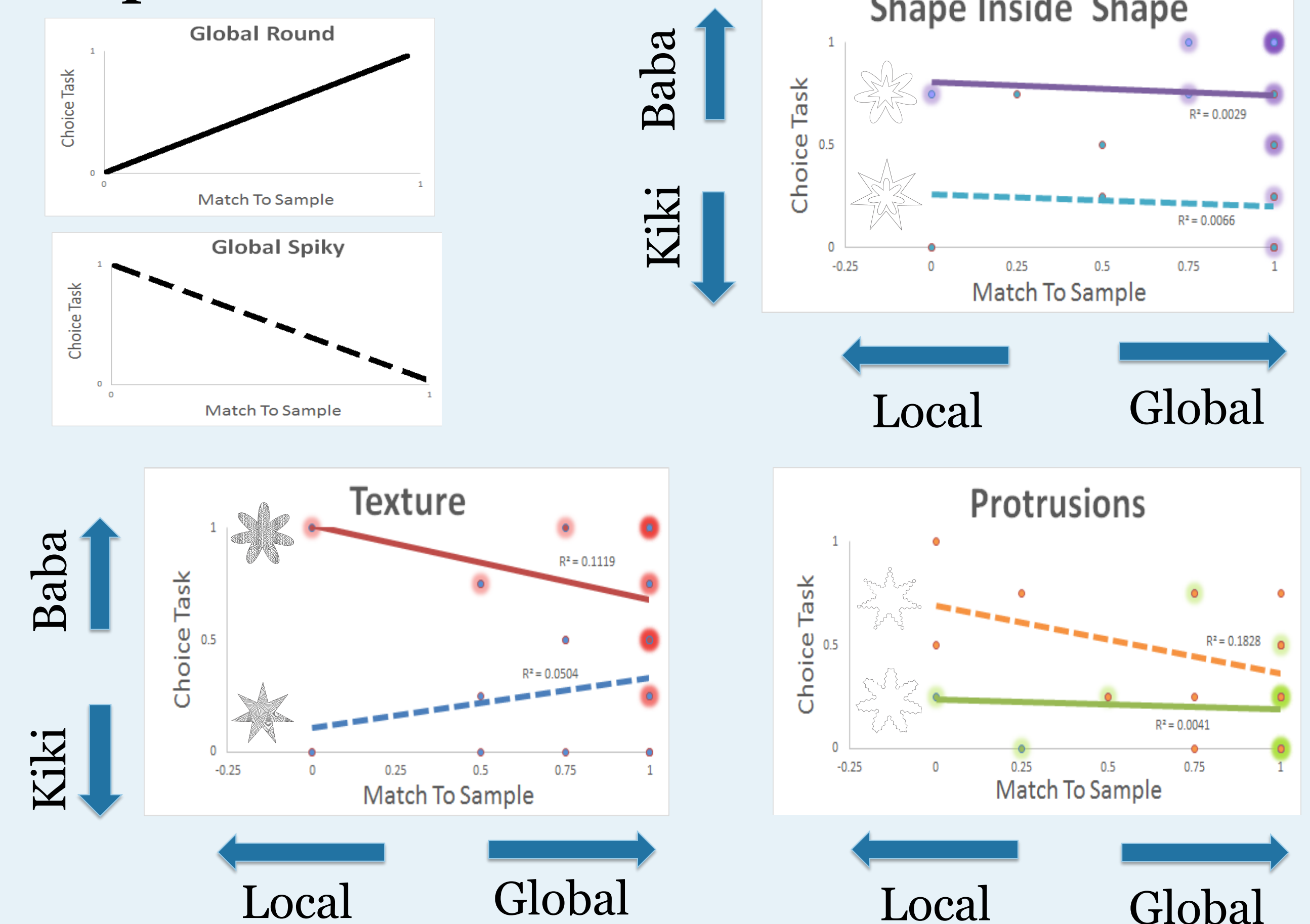
Duration: Dependent on participant.
48 Trials: Each stimuli repeated twice.

EXP 1: Results



EXP 2: Results

Expected



Conclusion

Exp 1: Participants tended to adopt a global bias when identifying shapes. This was seen in all conditions, except for protrusions, where a globally round shape was perceived as “kiki”.

Exp 2: We expected global shape biases would be correlated between the 2IFC task of Exp1 and the match-to-sample task of Exp2, such that participants who selected global shapes more often in Exp2 would be more likely to choose the sound based on global shape in Exp1. However, participants in Exp2 did not show the global bias seen in Exp1. In fact, in the texture condition the correlation was in the opposite direction, a local bias. For texture, participants more globally biased in Exp2 (match-to-sample) selected sound based on local texture more often in Exp1 (2IFC).

Future work should consider why these tasks yield different results.

References
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Harrison, T.B., & Stiles J. (2009). “Hierarchical Forms Processing in Adults and Children.” *Journal of Experimental Child Psychology* 103.2: 222-40.
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