



The strength of association between abstract shapes and sounds, cross-modal correspondences, decreases for older compared to younger adults.

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INTRODUCTION

Crossmodal interactions involve the use of multiple senses such as hearing, seeing, tasting, touching, and smelling. We experience these on a daily basis and they help shape our understanding of the world around us. Previous studies on the “Bouba-Kiki Effect” have shown associations between visual shapes (eg. round and spikey) and random sounds (eg. baba/gaga and kiki/titi) (Mauer, 2006) . This association has been found in babies as young as four months old (Ozturk, 2012). Here in our study, we want to observe if this association progresses to be stronger, weaker, or stays the same as we age through a series of three experiments: audio to visual, visual to audio, and audio to tactile.

We predicted the strength of crossmodal associations would be lower for older adults when compared to younger adults.

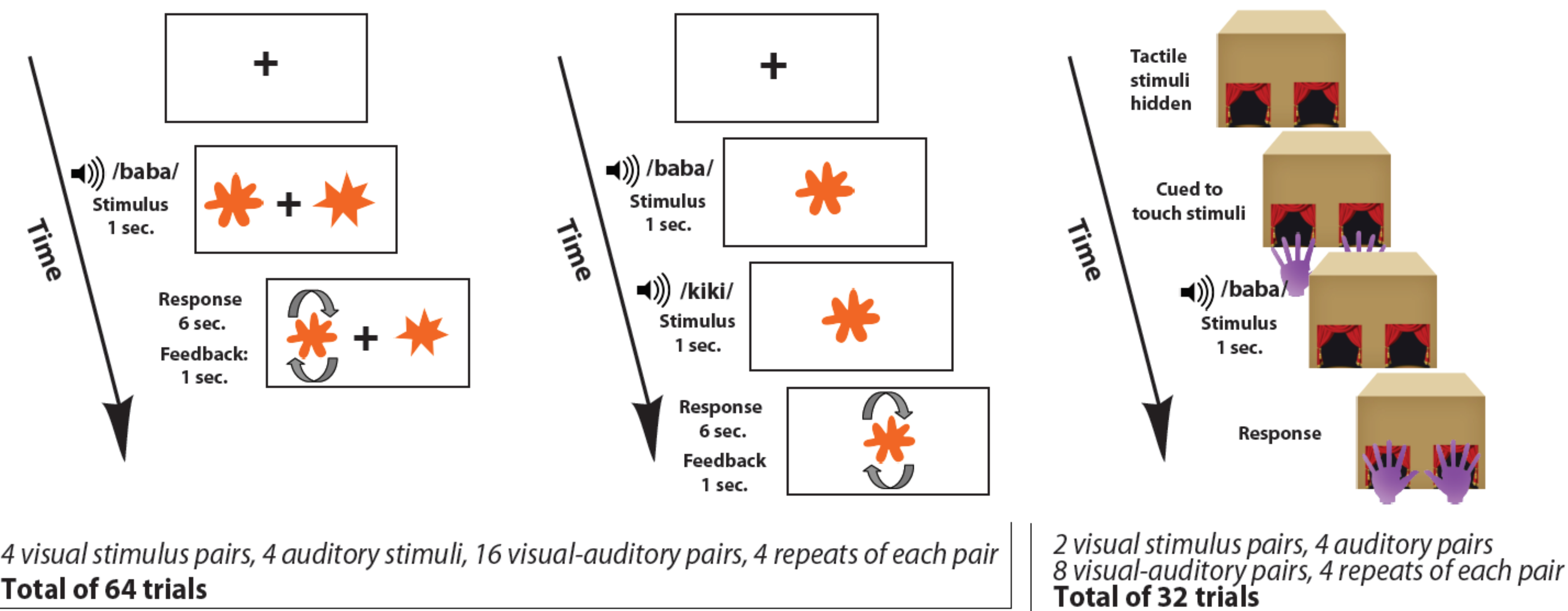
METHODS

Procedure

Judge Shape (64 trials)

Judge Sound (64 trials)

Judge Tactile (32 trials)



Stimuli

Visual Stimuli



Auditory Stimuli

/Baba/ /Gaga/ /Kiki/ /Titi/

Tactile Stimuli

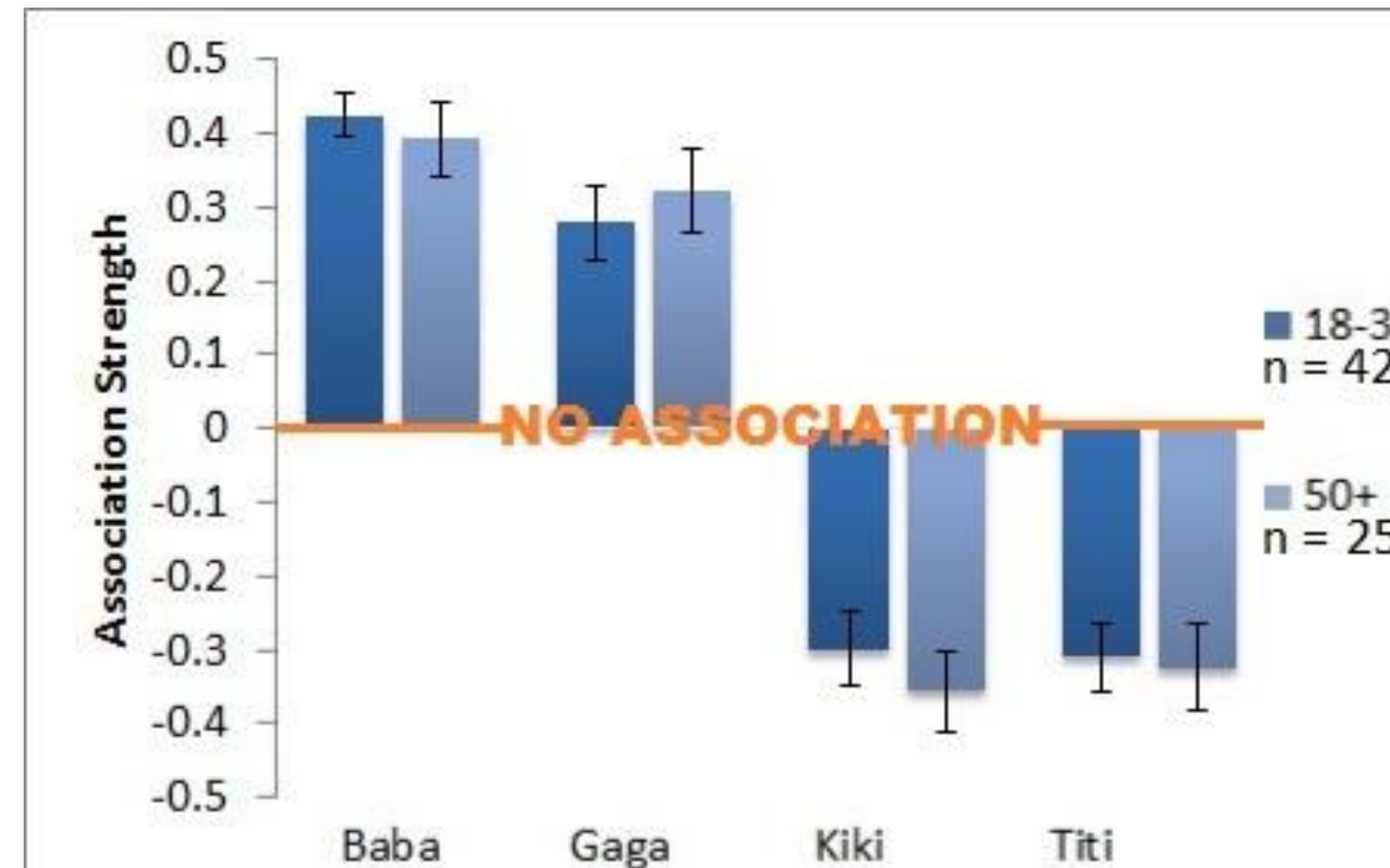


Analysis

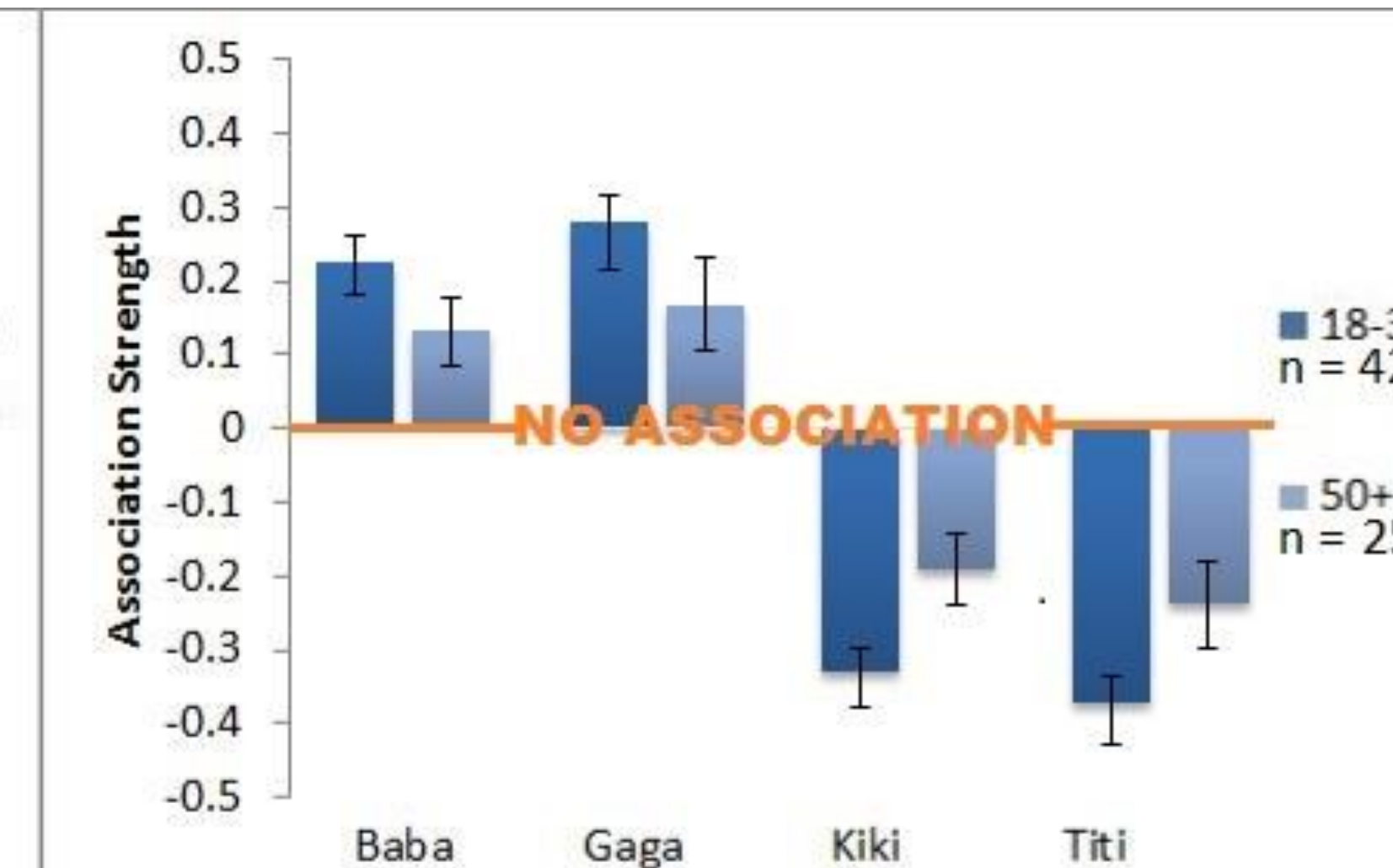
The association strength was calculated using the proportion of trials where round shapes were chosen over spikey shapes for a given sound.

RESULTS

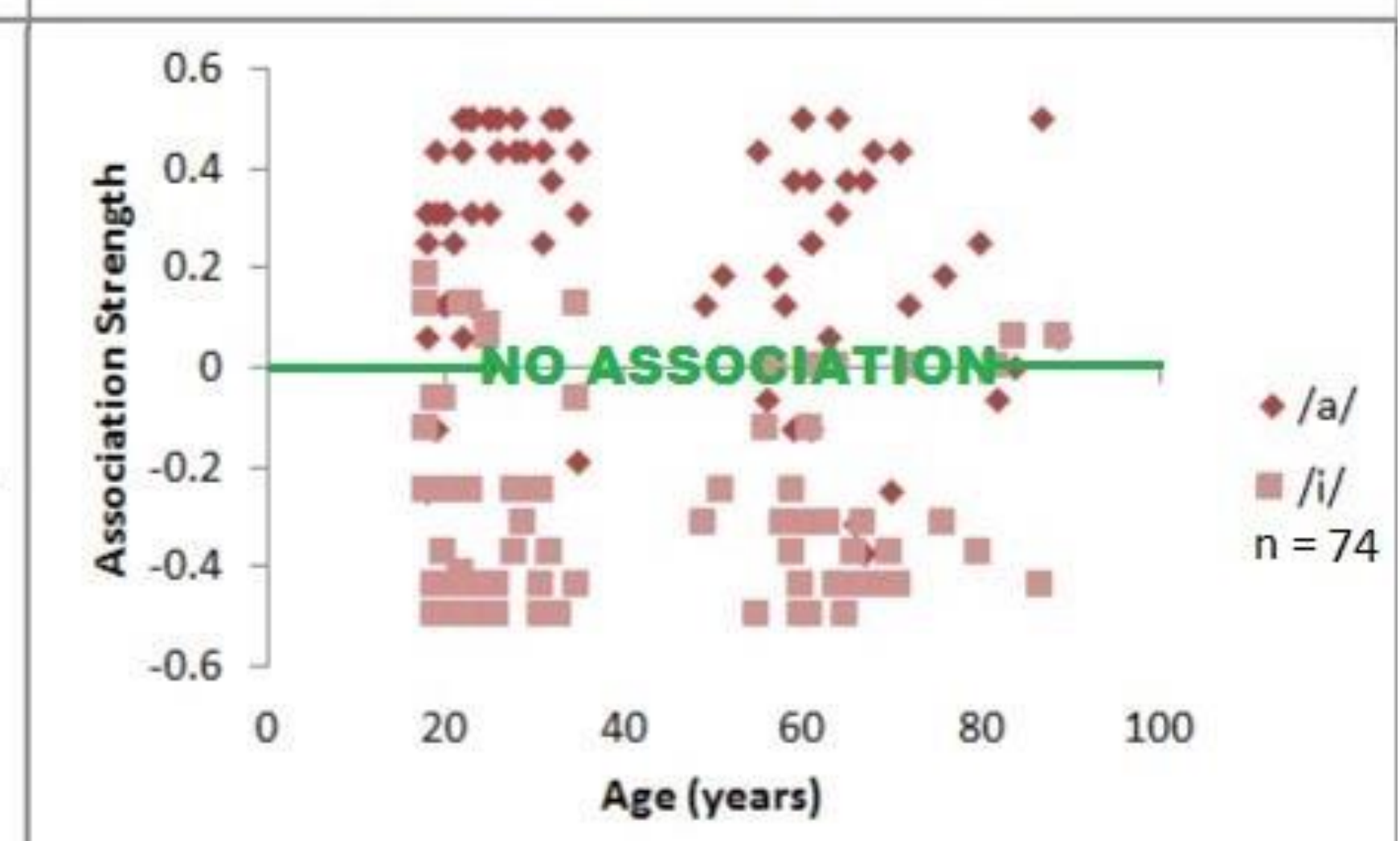
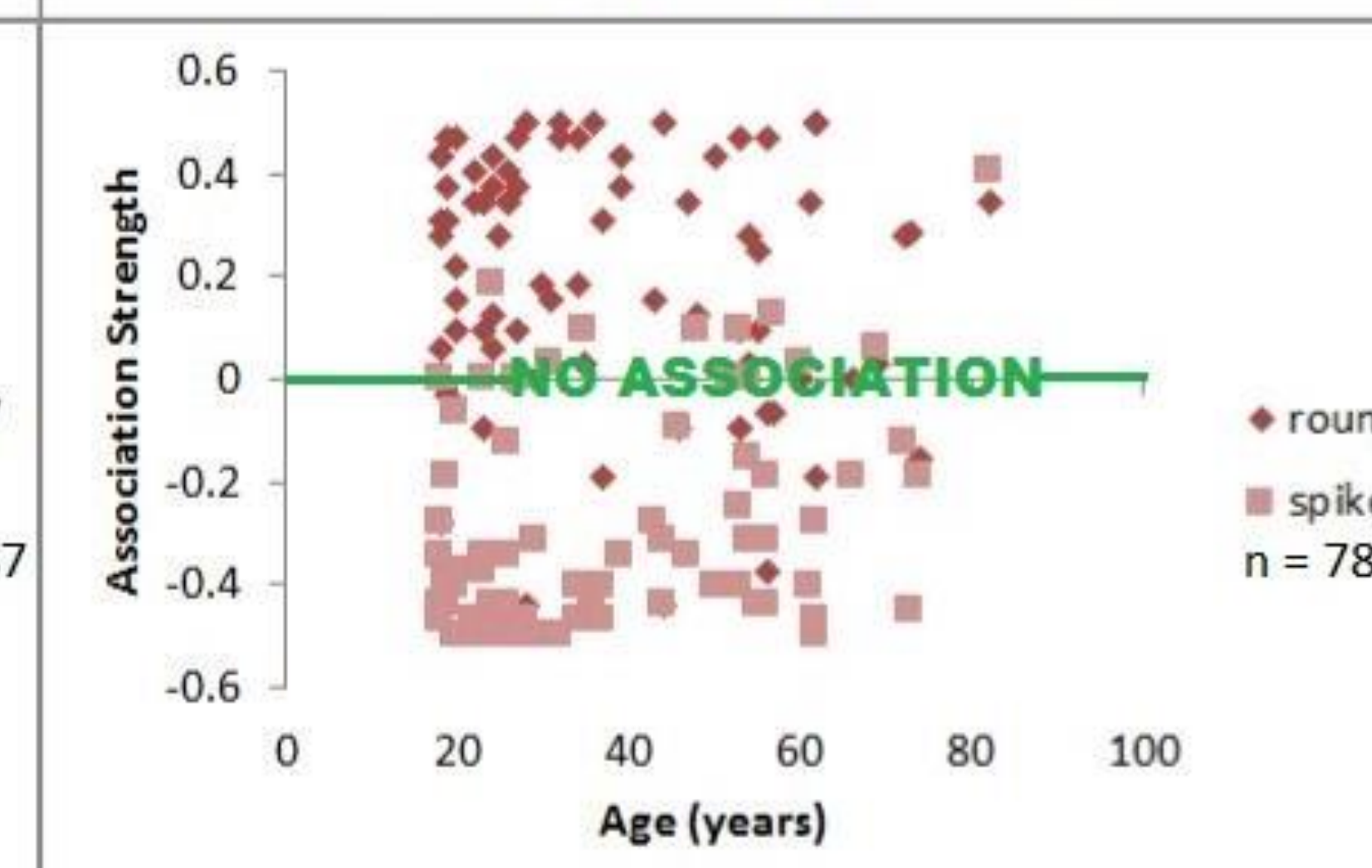
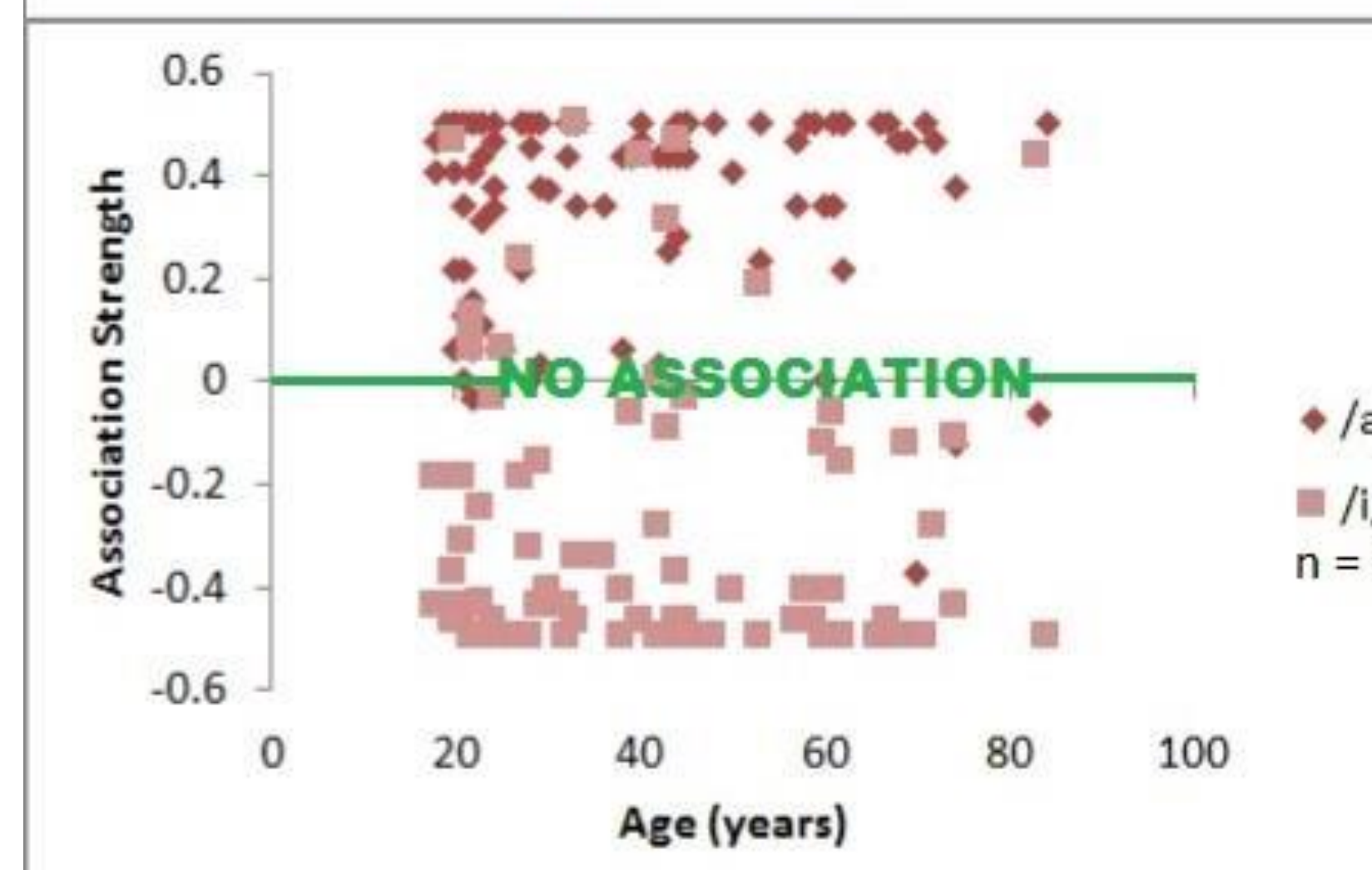
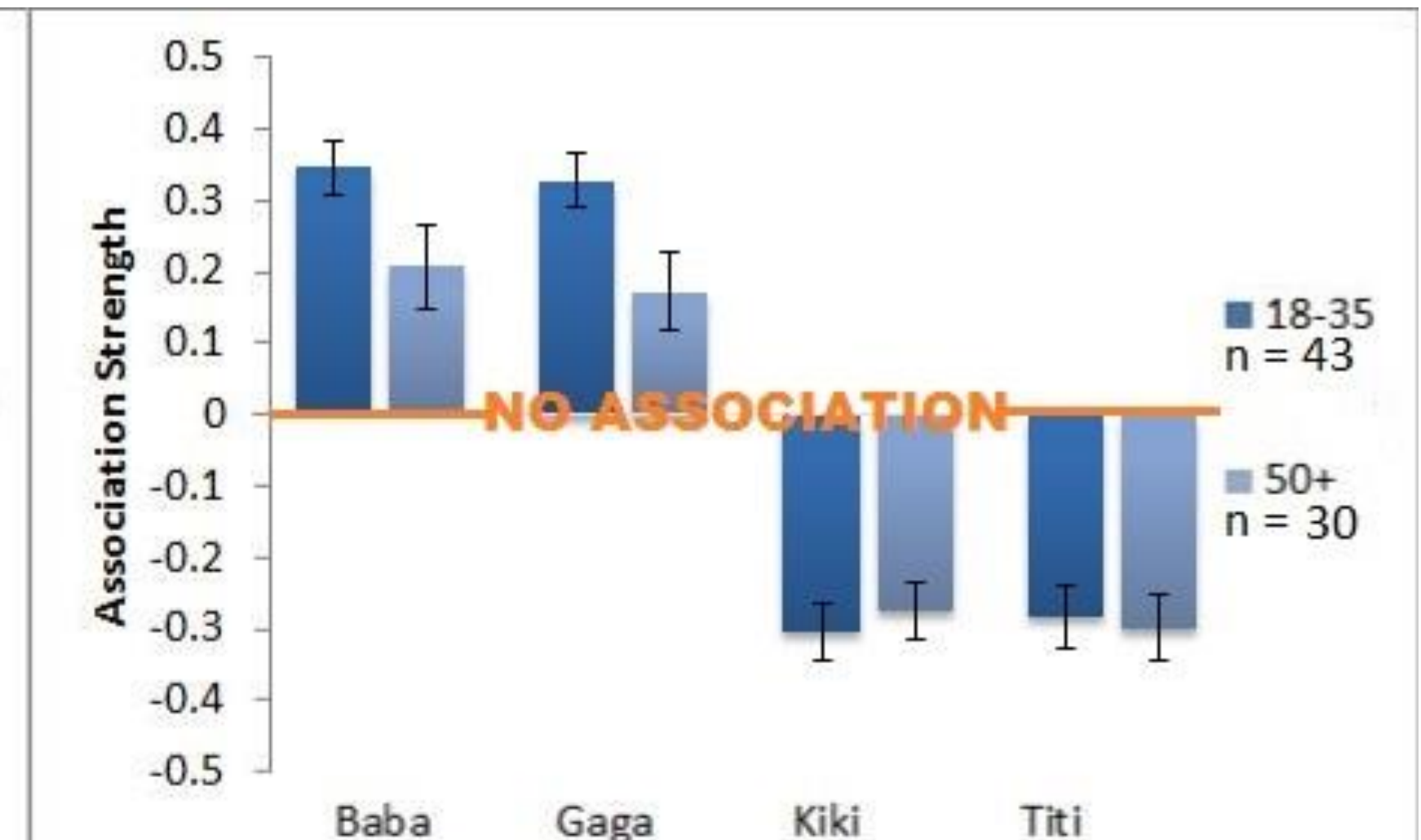
Judge Shape Audio to Visual



Judge Sound Visual to Audio



Judge Tactile Audio to Tactile



CONCLUSIONS

Judge Shape: Association strength stayed the same for both age groups when associating baba with round shapes and titi with spikey shapes. Older adults showed a slightly higher association strength for matching gaga with round shapes and kiki with spikey shapes compared to younger adults.

Judge Sound: Association strength was stronger for younger adults when associating round shapes with baba/gaga sounds and spikey shapes with kiki/titi sounds compared to older adults. The judge sound experiment required more memory processing because the sounds were presented sequentially, requiring participants to remember each sound, its sequence of presentation, and then choose a matching shape.

Judge Tactile: Association strength was greater for younger adults when associating round shapes with baba/gaga sounds compared to older adults. Association strength stayed the same for both age groups when associating kiki/titi sounds with spikey shapes. Older adults may have had higher tactile sensitivity to spikey objects and a lower tactile sensitivity to the the blunt, round objects.

REFERENCES

- Daphne Mauer, Thanujeni Pathman, Catherine J Mondloch. (2006). The Shape of boubas: sound-shape correspondence in toddlers and adults.
- Ozge Ozturk, Madeline Krehm, Athena Vouloumanos. (8 May 2012). Sound symbolism in infancy: Evidence for sound-shape cross-modal correspondence in 4-month-olds.

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