

The Role of Iconic Gesture in Facilitating Memory and Recall of Lyrics

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Background

Song and Memory

- Melody and text are stored and retrieved from memory as an integrated unit (Serafine et al., 1984, 1986)
- Association-by-contiguity hypothesis: words can act as a recall cue for melody and vice versa (Crowder et al., 1990; Ginsborg & Sloboda, 2007)

Gesture and the Enactment Effect

- Subject-performed task: people remember verb-object or action phrases better if they have been enacted during learning process (Cohen, 1981; Engelkamp & Zimmer, 1984; Steffens et al., 2007)
- Imitation of iconic gestures during retrieval is most effective for learning words (de Nooijer et al., 2013; Kelly et al., 1999)

Gesture in Musical Contexts

- Curwen hand signs and musical shaping gestures to improve singing technique (intonation, breath, articulation, phrasing) (Cassidy, 1993; Liao & Davidson, 2007; Wakefield & James, 2011)

Research Questions

Do iconic gestures help with memorizing words and melody, or just words? Do iconic gestures help with memorizing just the melody?

Method

Phase 1: Interview with choral conductors

Four Northwestern choral conductors were interviewed to provide information on the use of gesture in traditional choral settings.

Phase 2: Experiment for immediate recall

24 Northwestern undergraduates (ages 18-24)

8 American folksongs

Conditions:

- A – No gesture and song
- B – Gesture and words
- C – Gesture and melody
- D – Gesture and song

Participants watched videos of the experimenter singing, speaking, and/or gesturing, then recalled what they heard. They were scored for accuracy of words, pitch, and rhythm.

Phase 3: Pilot study to test longer term memory

2 Northwestern undergraduates participated in Phase 2, then returned an hour later to engage in free recall of any songs they remembered.

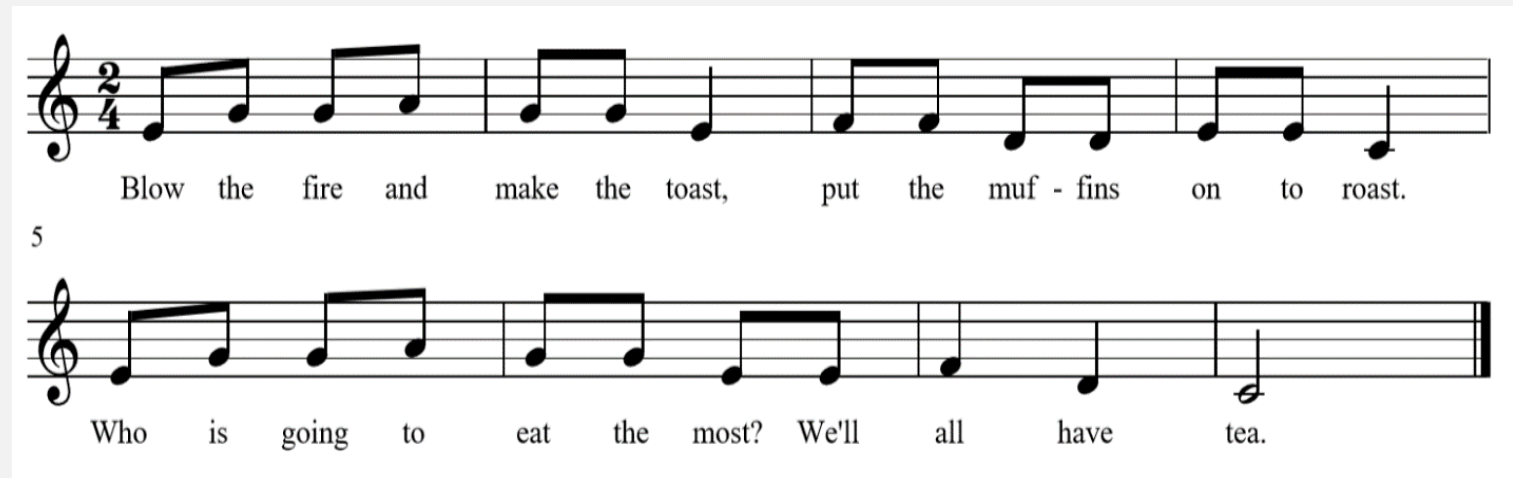


Figure 1: Housekeeping (Erdei, 1974)

Results

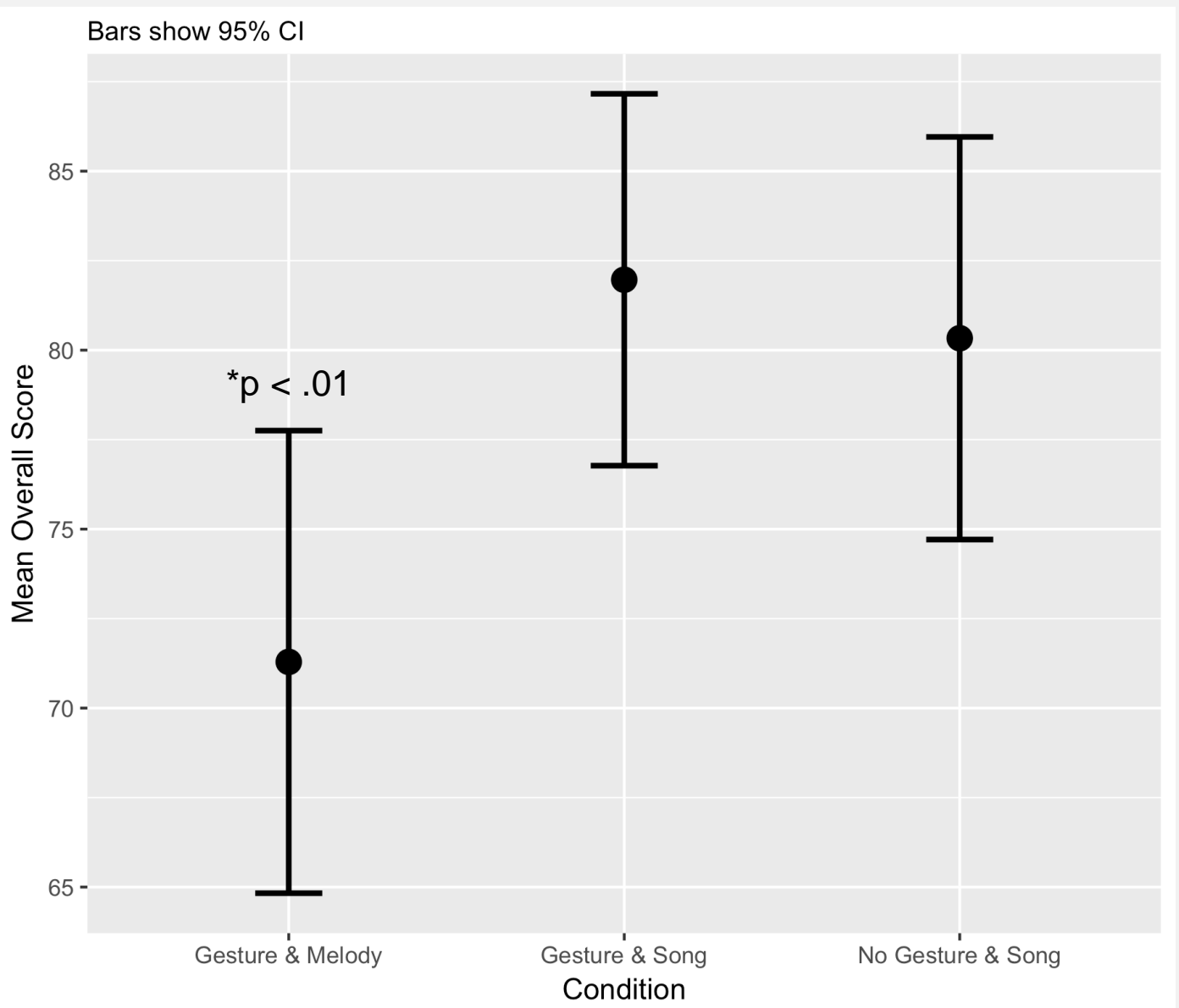


Figure 2: Comparison of means for overall song (pitch and rhythm) scores

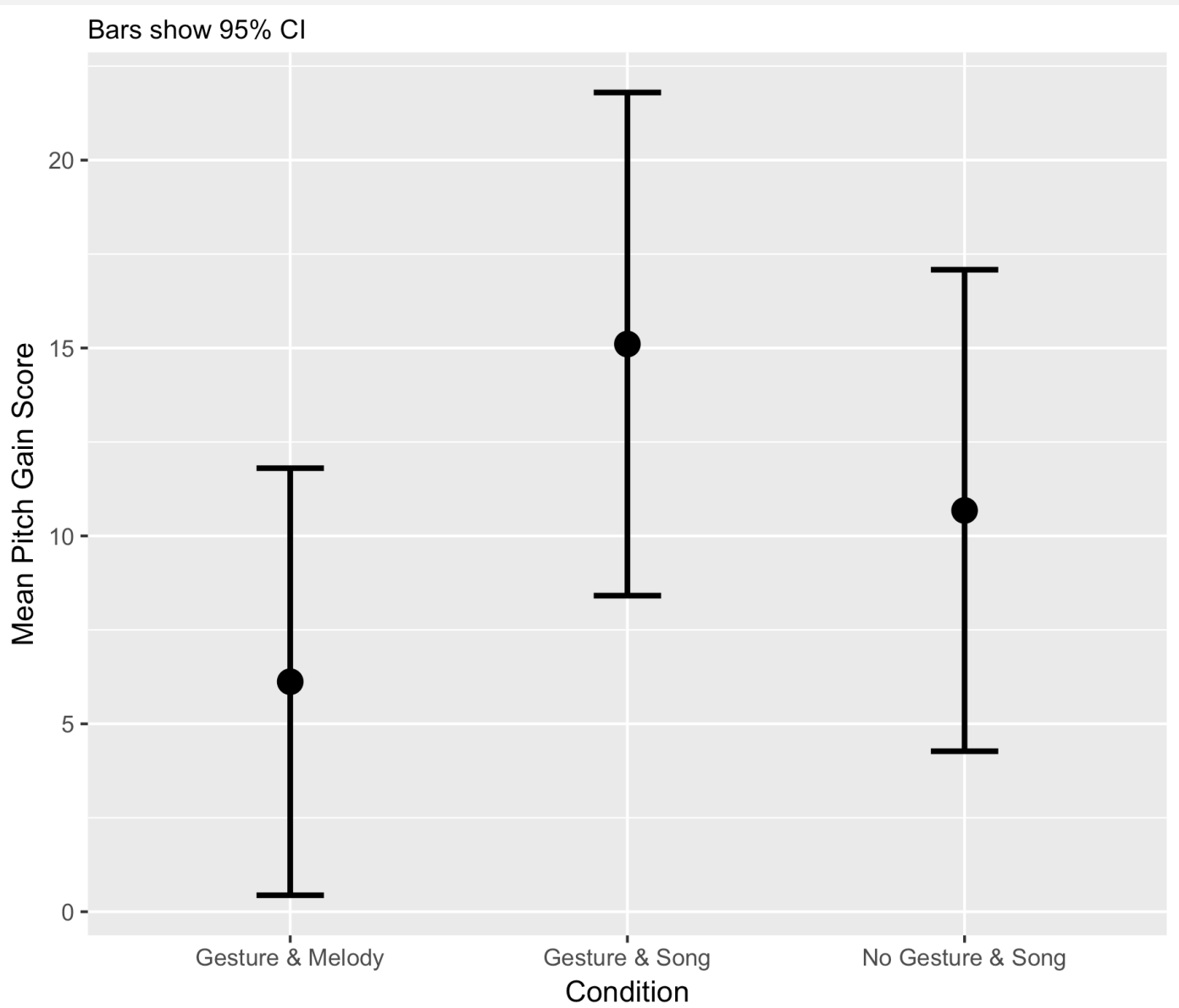


Figure 3: Comparison of means for melodic gain from recall 1 to 2

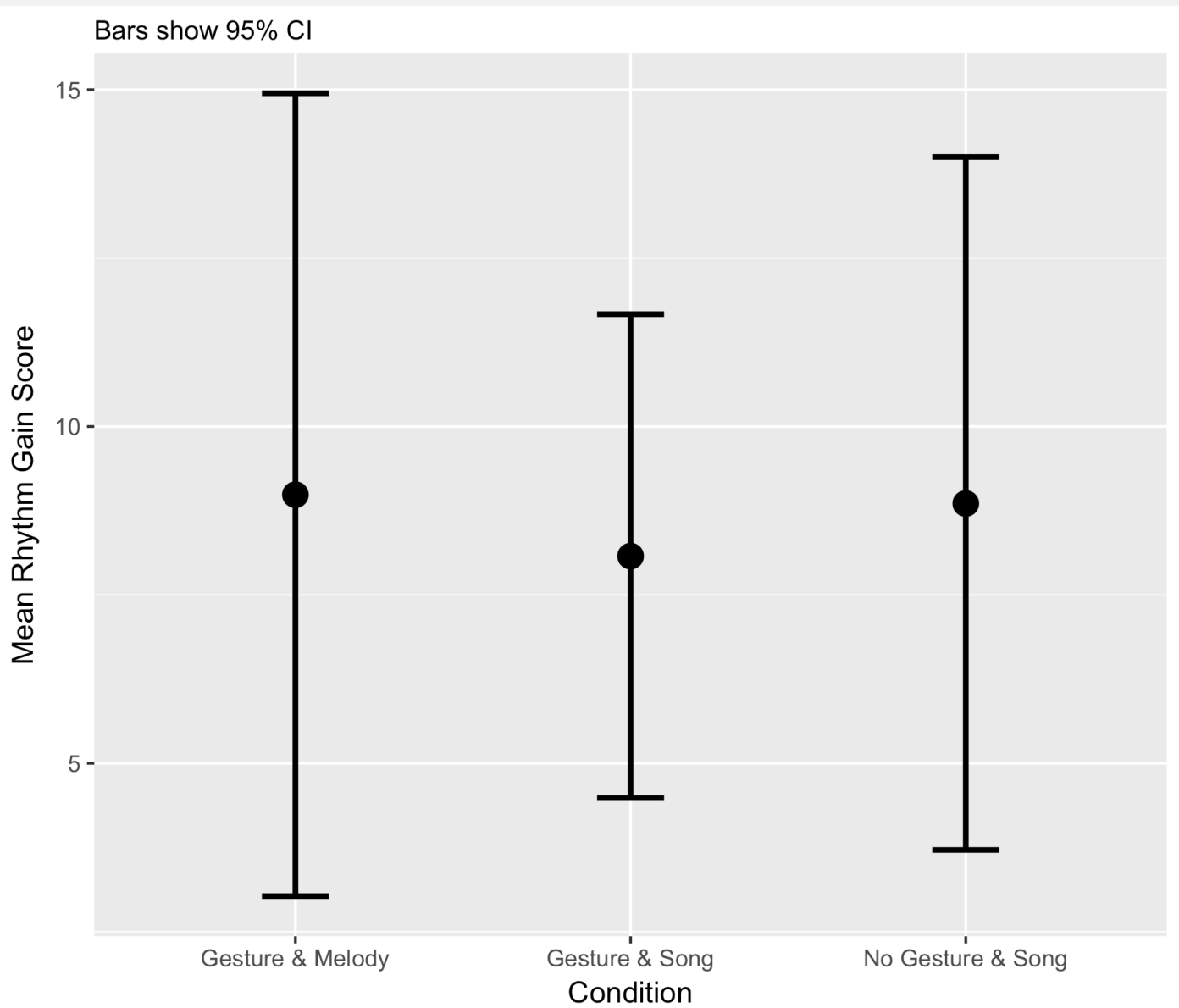


Figure 4: Comparison of means for rhythmic gain from recall 1 to 2

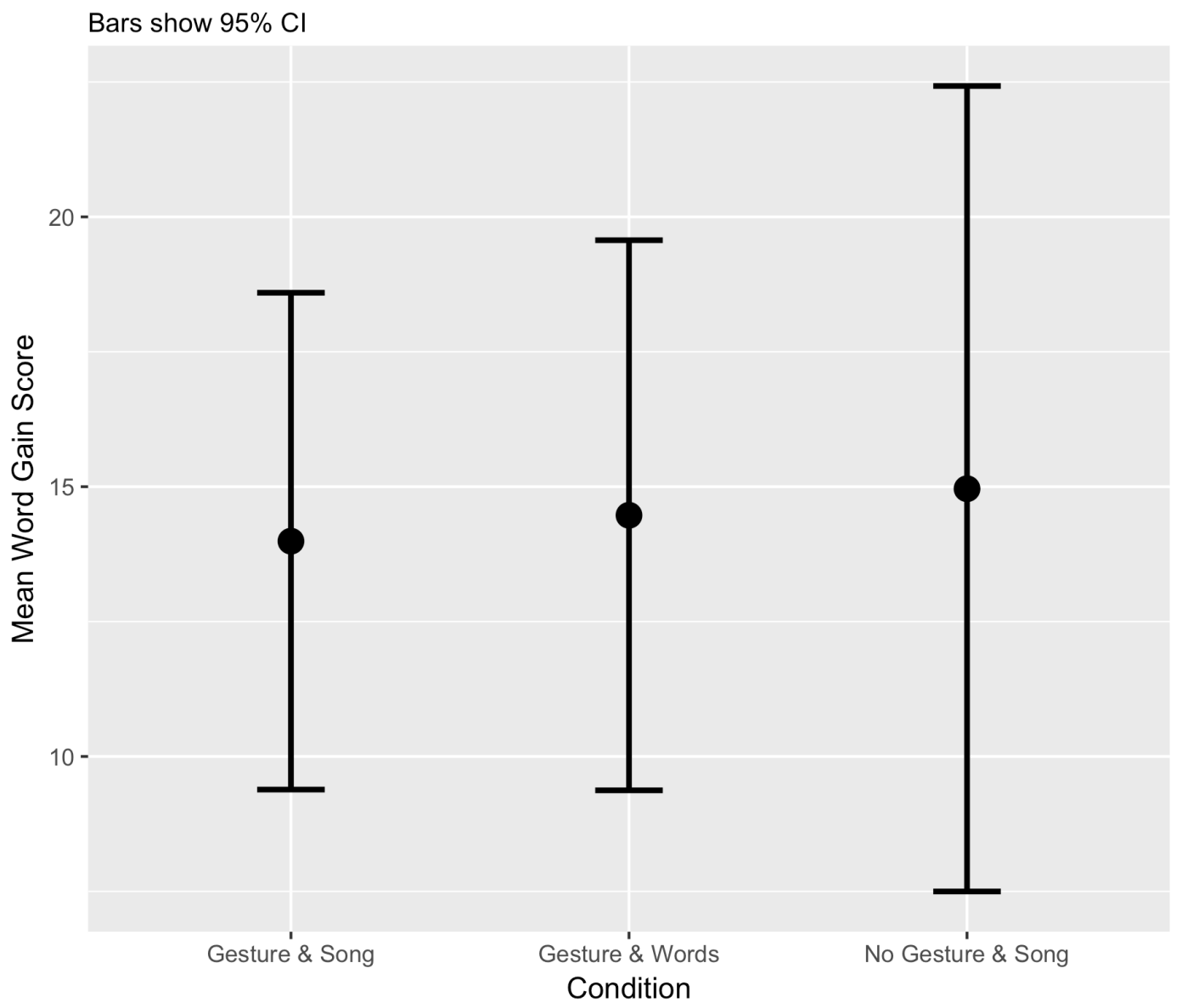


Figure 5: Comparison of means for word gain from recall 1 to 2

Discussion

Main Findings

1. Memorizing words and melody together produces better recall than memorizing just the melody.
2. Iconic gesture helps with memorizing words, but does not make a statistically significant difference in immediate recall of songs (words and melody).
3. Iconic gesture does not help with memorizing just the melody since there is no semantic meaning attached.
4. Gesture does not significantly improve either immediate or longer term recall of songs.
5. Words can help memory for melodic and rhythmic elements of song and vice versa.
6. Gesture can accompany words to aid in learning and remembering songs, which can be utilized in music education.

Future Directions

1. Investigate long-term learning and retention of songs.
2. Utilize different types of gesture (iconic vs. beat).
3. Explore simultaneous vs. sequential learning of gesture and song.
4. Teach folksongs with gestures to children or cognitively impaired population.

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