

INTRODUCTION

- Infants experience pleasure and solace from music¹, and they are sensitive to its pitch and emotional message²
- Previous studies have suggested that distinctive features of lullabies and play songs convey different emotional messages to infants³, and they respond to each song style behaviourally^{4,5}, physiologically^{6,7,8}
- Although heightened pitch and positive vocal affect play an important role in regulating infants' emotional states, these emotional aspects of singing have never been compared across language context.

Goal of this study: Compare the efficacy of familiar(*English*) and unfamiliar(*French*) lively/joyful songs in regulating affect and attention in distressed infants.

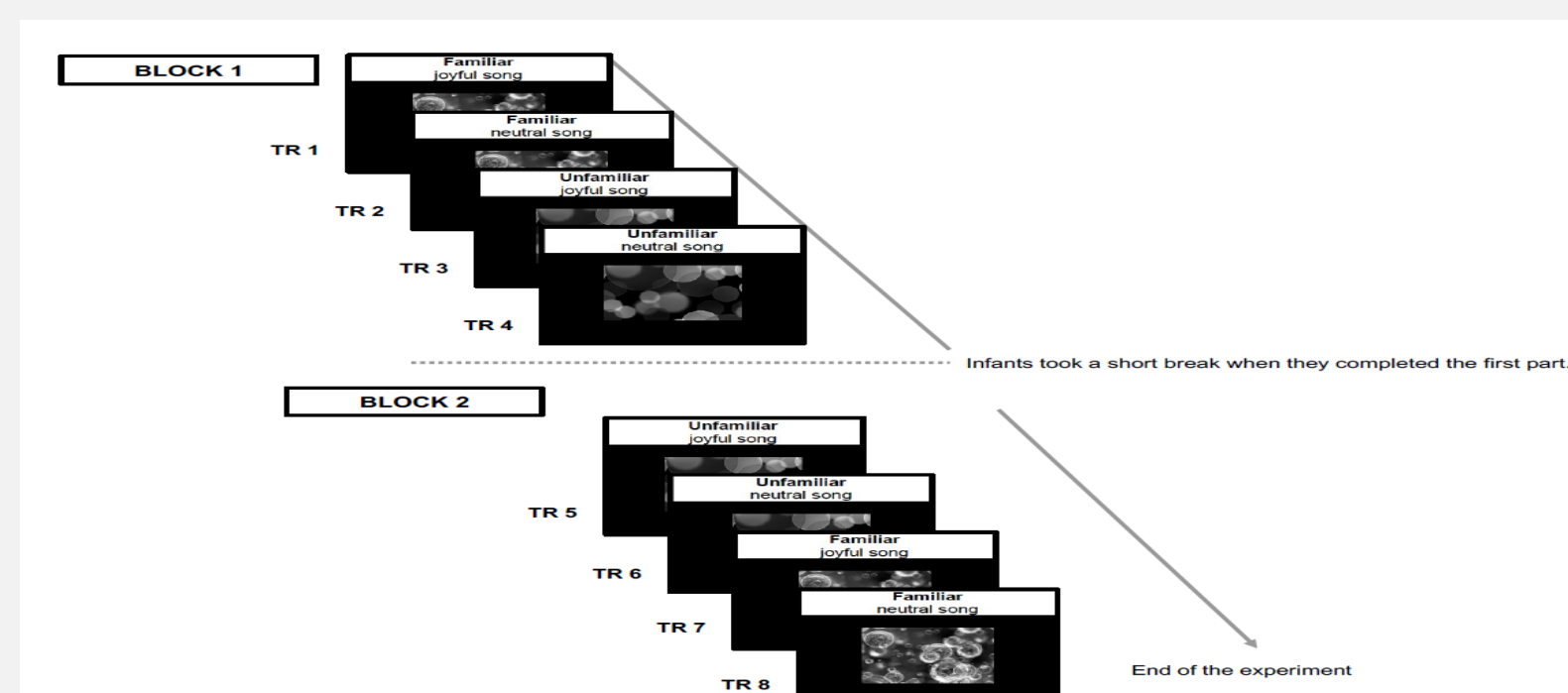
RESEARCH QUESTIONS

1. **Lively/joyful songs:** Is a joyful singing style more effective at inhibiting distress?
2. **Language familiarity:** Does language familiarity influence delaying distress?
3. **Attentional difference:** Is joyful music more likely to elicit attention than neutral music?

METHODS

Participants

- 22 infants ($M_{age} = 211$ days, $SD = 16.4$, 13 females)
- A within-subjects design was used, and all infants participated in both the affect and language conditions.



Measures:

⇒ Visual distress

- **The cry-face criterion** is indexed by negative facial expressions^{1,9}

⇒ Visual Attention

- Indexed by **visual fixation** in the first and last 15-s of the trial with reduced body movements.^{7,8,10}

Procedure

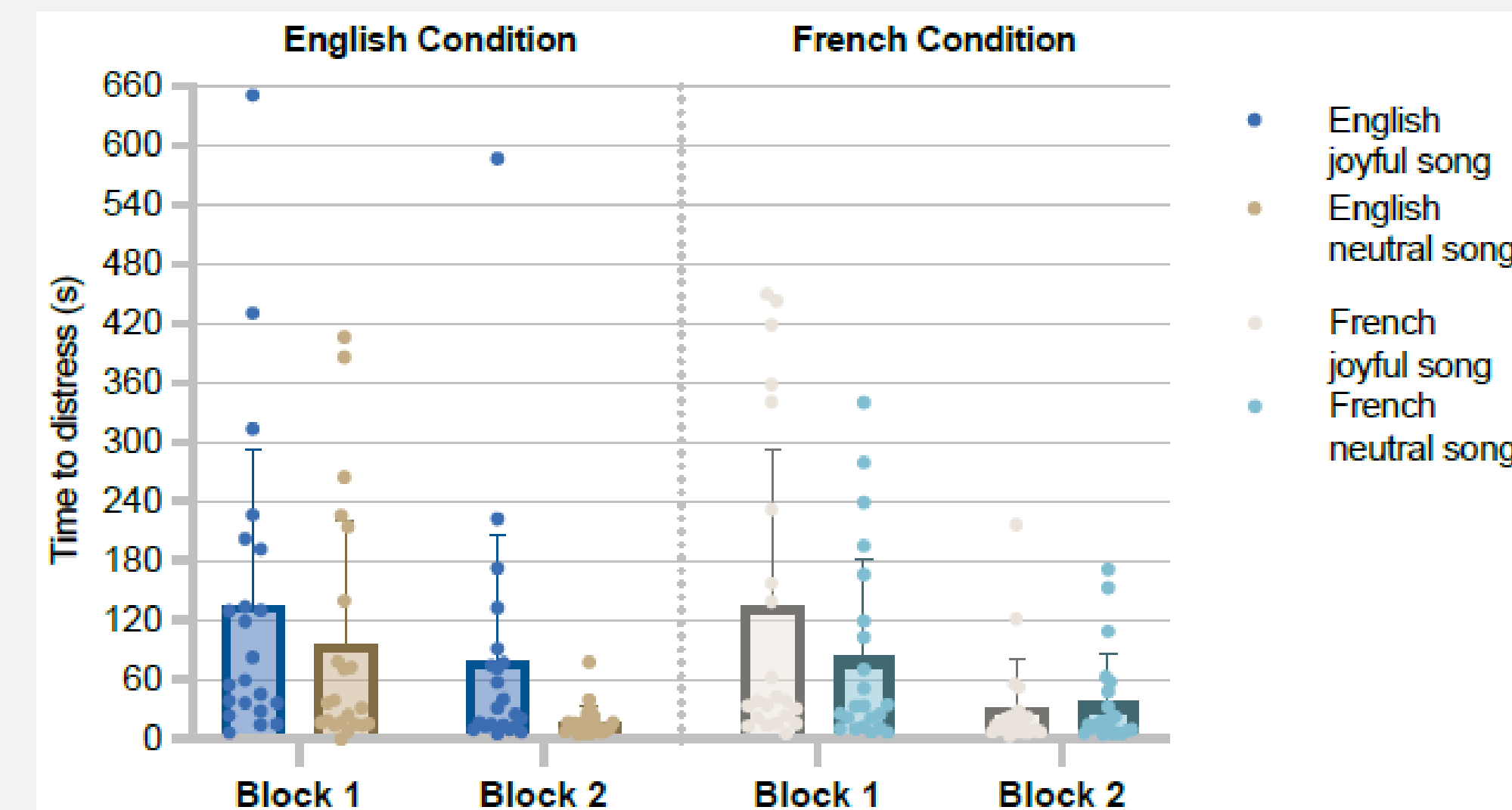
- Infants heard a female voice singing either in a lively/joyful, or neutral/inexpressive style in English and French.
- Each recording played continuously until an infant met the criterion of distress¹ (i.e., fussiness) based on visual displays of discomfort (e.g., a cry face)

RESULTS

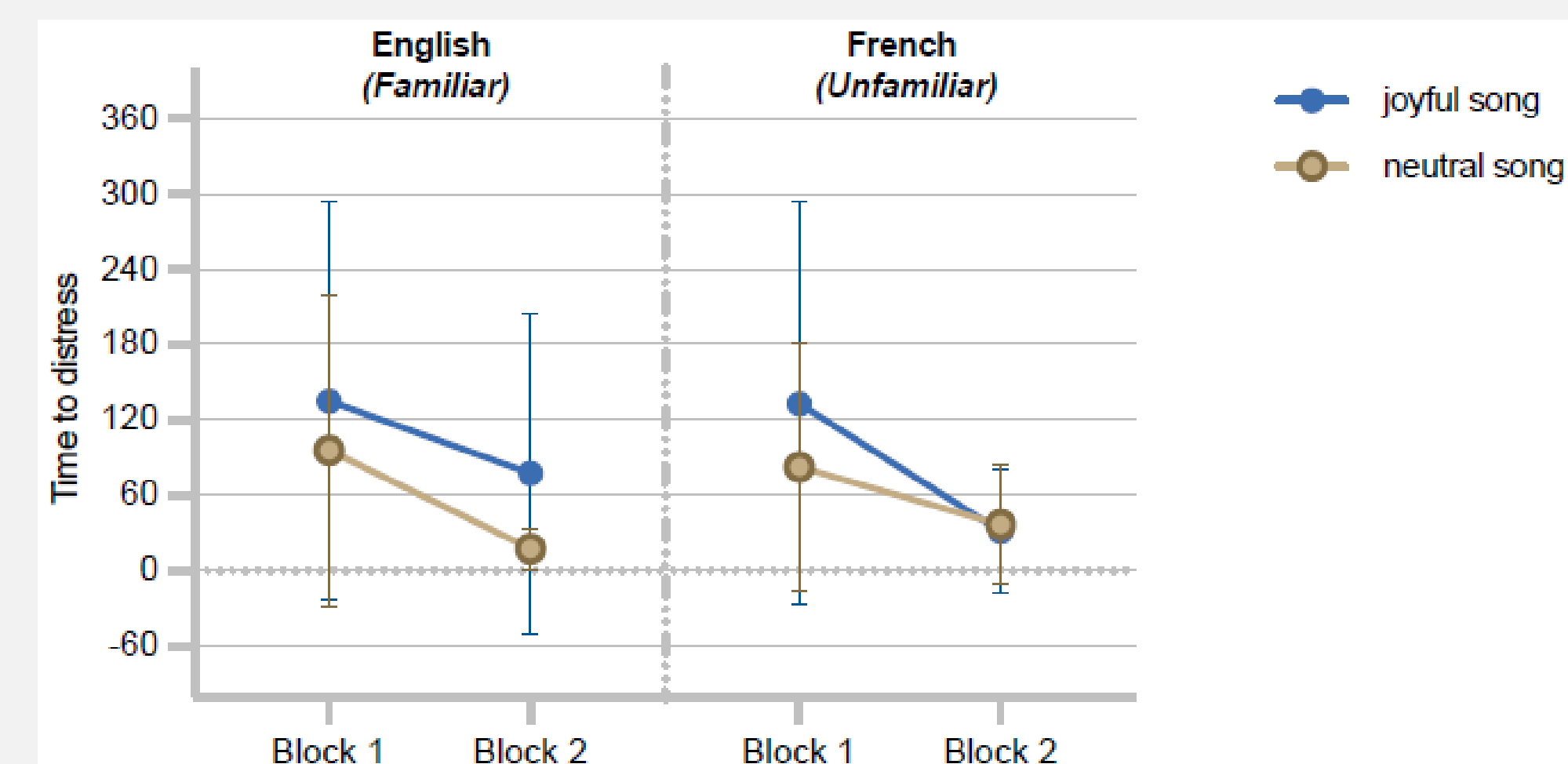
- Distress criterion was achieved later for joyful songs than for inexpressive songs ($p = .058$).

$M_{joyful} = 94.40\text{-sec}$

$M_{neutral} = 58.28\text{-sec}$



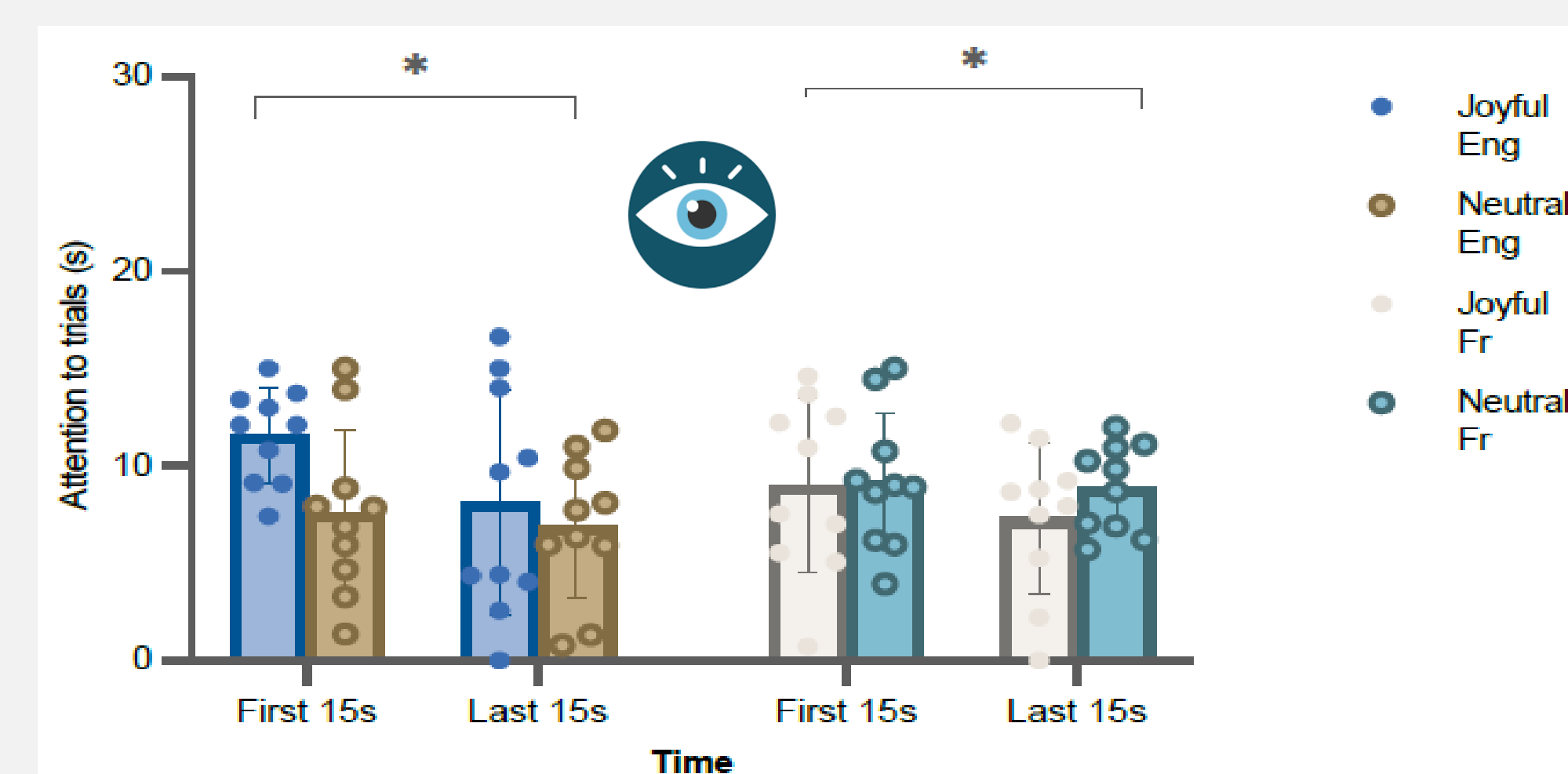
- There was **no** main effect of language. Infants remained calm in similar durations during both English and French songs.



$M_{English} = 81.56\text{-sec}$

$M_{French} = 71.12\text{-sec}$

- Infants' attention significantly differed in the first and last 15 seconds of trials, this did not interact with context.



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SUMMARY

- Overall, infants listened to joyful songs for almost 2.5 minutes before exhibiting discomfort in both language conditions.
- Their attention was different at the start of the trial than at the end, but this difference had no effect on affect or language.

CONCLUSION

- Various singing styles have different effects on infant arousal and behaviour.⁸
- Infants prefer songs regardless of the singer's identity (a mother or an unknown woman), even though they differ considerably in fundamental frequency and tempo.¹¹
- Consequently, using music as a source of comfort is a universal human characteristic at all ages.

Acknowledgements: We would like to thank Célia Demarchi & Lauren Stewart for portraying the test stimuli. **Special thanks** to all the **babies** and **parents** who have participated in the research.

Note: The numbers in the rectangles are the estimates marginal means.

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