

Tuning Into Emotions: Children's Understanding of the Effects of Music on Affect and Performance



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Background

Music & Emotion Regulation

- From infancy, music has been used to regulate arousal & mood¹⁻³
- By age 3, children can identify happiness and sadness in music^{4,5}
- By age 4, children manipulate tempo & pitch to convey emotions in music⁶
- As children age, their ability to form connections between musical features, emotions, and situations develops alongside general cognitive growth⁷

Children's Beliefs about Emotion

- Both children and adults use a valence-matching approach (positive emotions = positive outcomes)^{8,9}
- However, young children are still learning to make context-specific judgments about the usefulness of emotions¹⁰
 - 5-year-olds struggle to recognize that intense positive emotions can hinder attention⁹

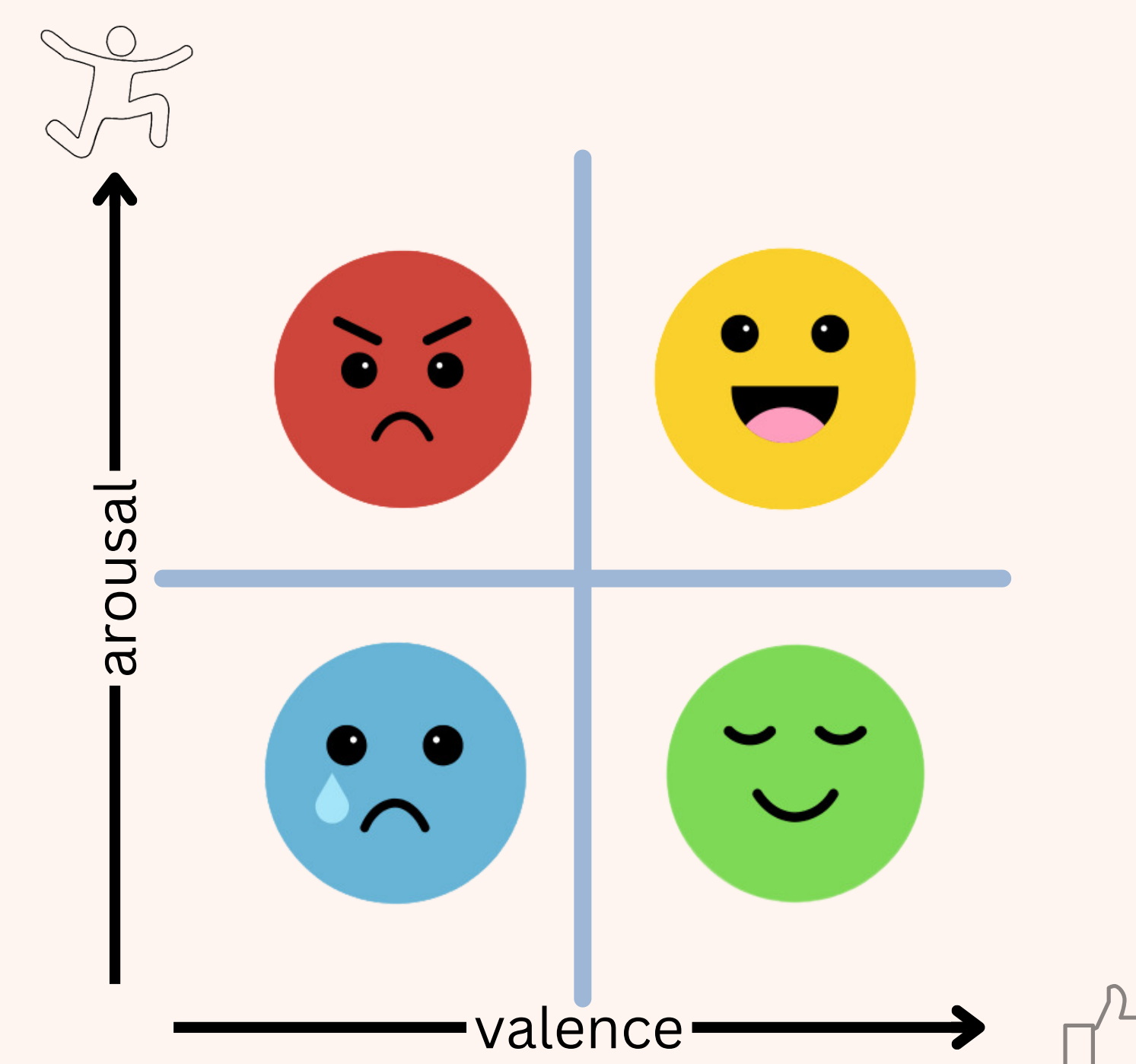
Current Study

How do **5-year-olds**, **8-year-olds** and **adults** perceive the effects of music on emotional states? And, can they use this understanding to reason about the influence of music on physical and cognitive performance?

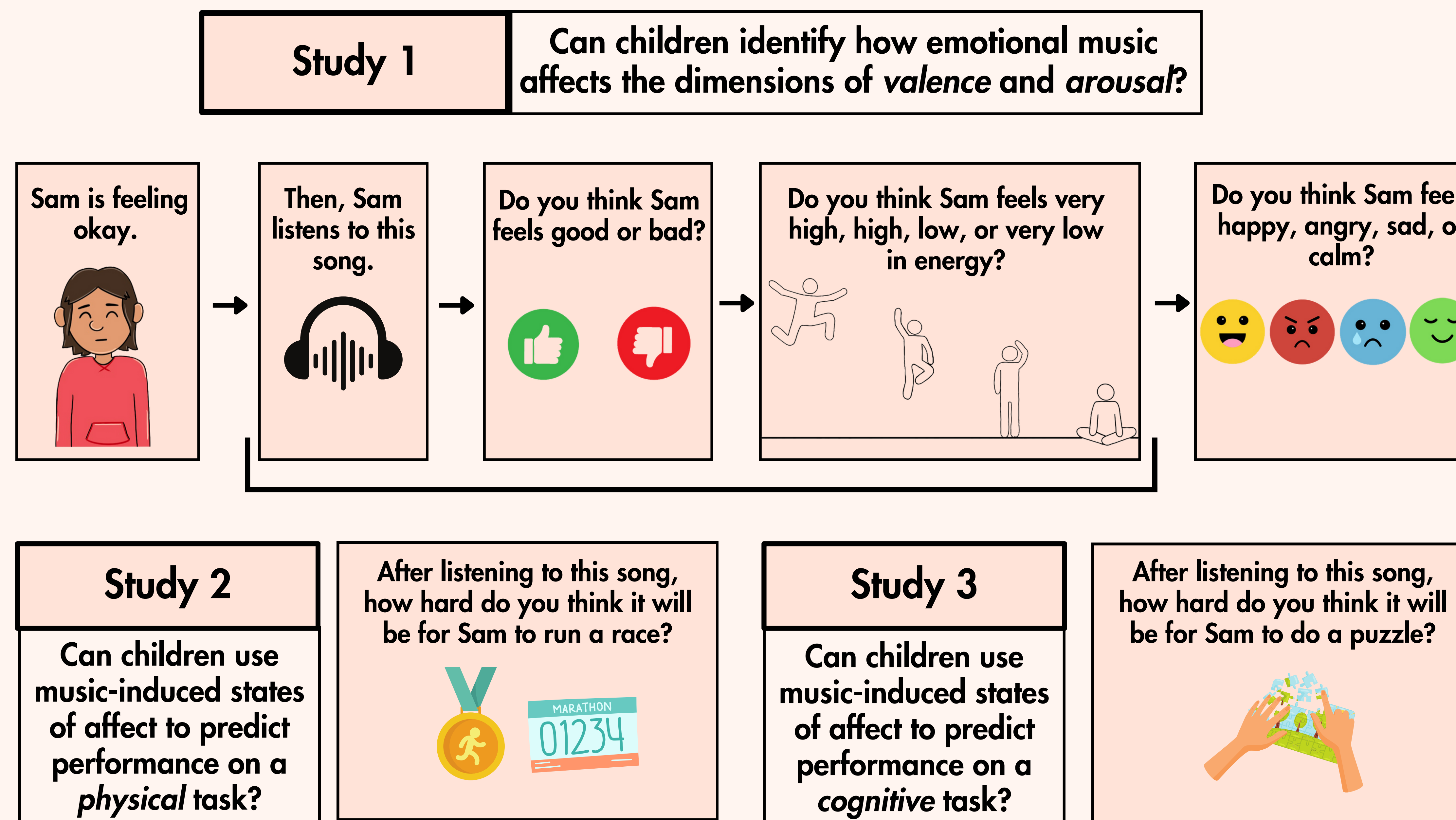
Methodology

Stimuli

- Four novel 20-second guitar instrumental pieces
- I-IV-V-I progression with a single melody line
- Mode (valence)
 - **Happy**: C major
 - **Angry**: C minor
 - **Sad**: D minor
 - **Calm**: D major
- Tempo (arousal)
 - **Happy & Angry**: 110 BPM
 - **Sad & Calm**: 50 BPM



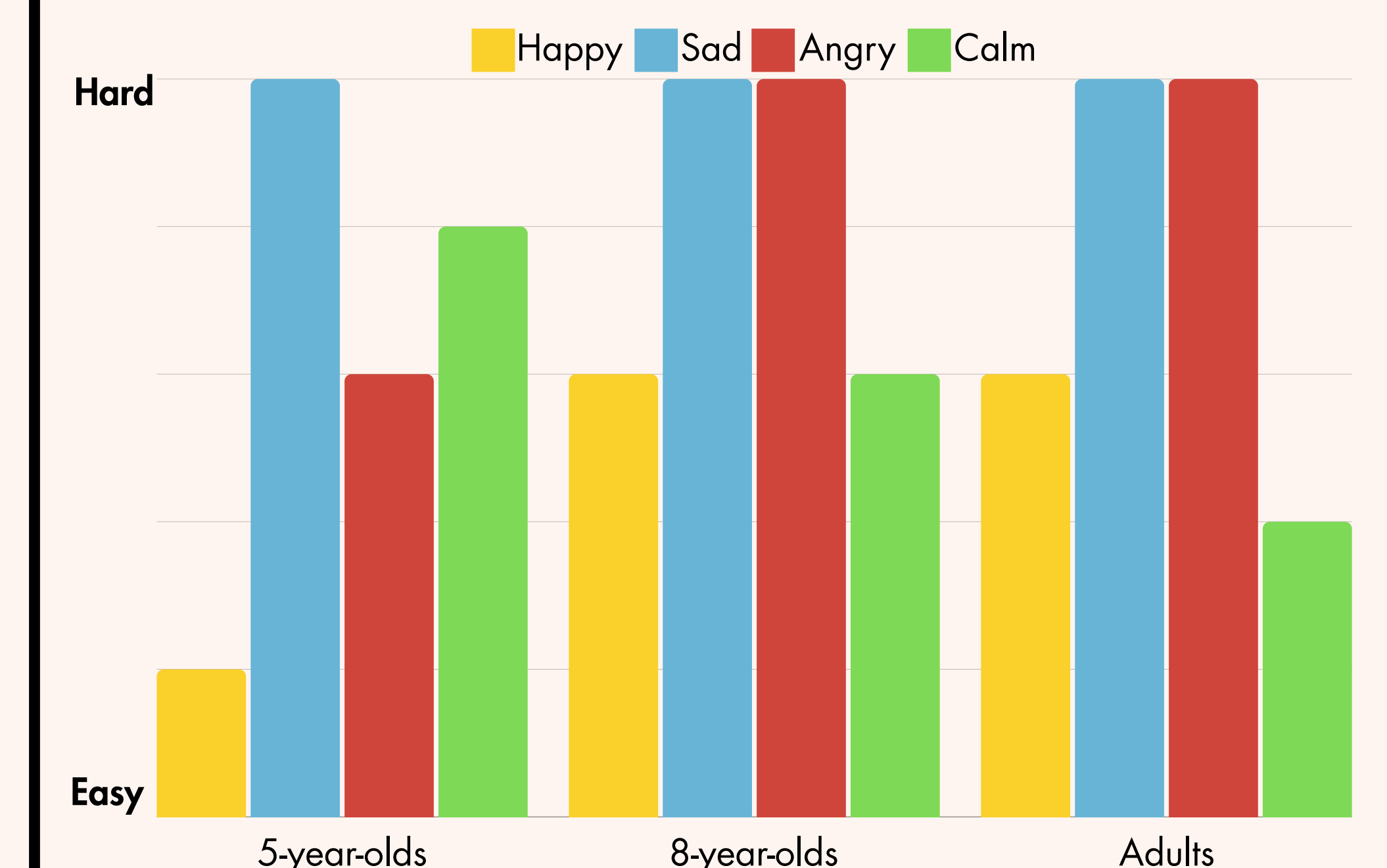
Design



Predictions

- All participants will identify the effects of music on valence and arousal, with accuracy increasing with age.
 - Mode will indicate valence (major = positive; minor = negative)
 - Tempo will indicate arousal (fast = high energy; slow = low energy)
- All age groups will associate **happy** music with *improved* performance and **sad** music with *decreased* performance.

Predicted Performance Ratings on a Cognitive Task



- 5-year-olds may struggle with the impact of intense emotional arousal's on attention
- 8-year-olds and adults likely to apply music's effects to cognitive tasks

References

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