

Who should play the instrument? Children's associations between musical instrument features and gender

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Introduction

- Children develop gender-stereotyped associations for toys and activities early, which extend to musical instruments (Serbin et al., 2001; Poulin-Dubois et al., 2002; Martin & Ruble, 2010).
 - For example, flute is viewed as feminine, and percussion as masculine (e.g., Abeles & Porter, 1978; Wych, 2012).
- Previous research has speculated that instrument attributes, such as size, pitch, and loudness, might contribute to the development of instrument stereotypes (Delzell & Leppla, 1992; Stronsick et al., 2018).
- We previously found that 8.5- to 11-year-old children and adults more strongly associated lower-pitched instruments with boys than with girls.
 - Boys (but not girls, nor adults) also associated louder instruments with boys.

Do gender associations with instrument features emerge earlier than 8.5 years?

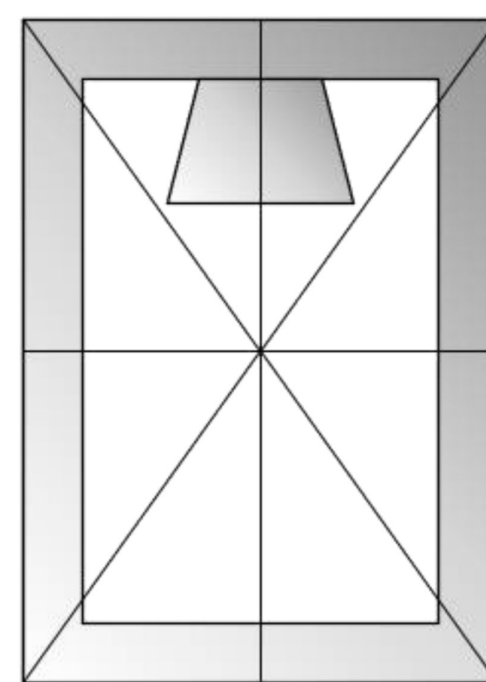
Method

Participants

- 6- to 8.5-year-old children ($N = 68$; 30 girls, 38 boys)
- Recruited through Children Helping Science (childrenhelpingscience.com)

Stimuli

- Fictional instrument images were created
 - Large (75% of screen height) or small (25% of screen height)
- Audio stimuli created using GarageBand (version 10.4.5)
 - All presented the same 8-second melody with an artificial timbre
 - Presented loud (100% volume) or soft (25% volume)
 - Presented high or low (differed by one octave)
- Instrument images and sounds were pilot tested to avoid resemblance to real-world instruments



Example Instrument

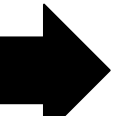
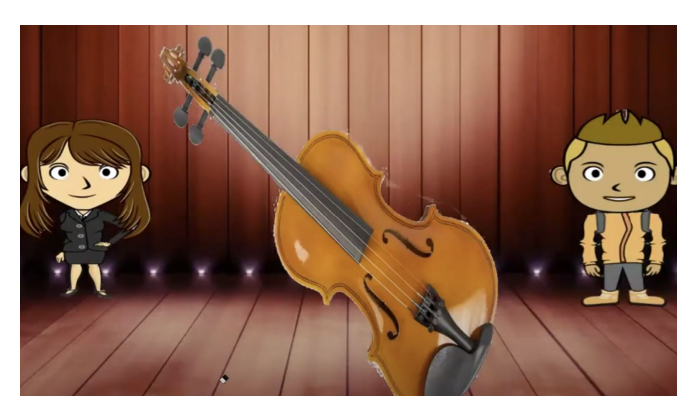
Procedure

- Children were tested over Zoom in the comfort of their home
- Stimuli were presented by an experimenter using PsychoPy

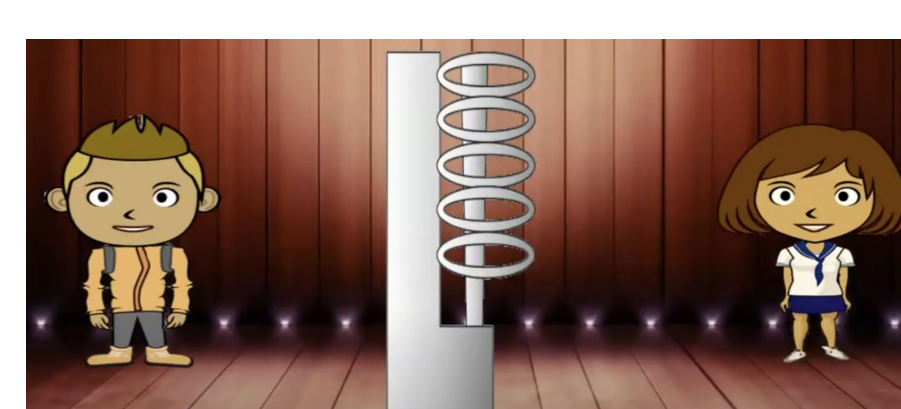
Child Gender Association Scale

	Very Negative	Somewhat Negative	Slightly Negative	Neutral	Slightly Positive	Somewhat Positive	Very Positive
Taking ballet lessons.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cleaning their room.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helping with the laundry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking out the garbage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Training Trial



8 Test Trials



To capture parents' attitudes about gender-related behaviors in their own children, we administered the Child Gender Association Scale (CGAS) (Blakemore & Hill, 2008). The CGAS was created to assess parents' gender-stereotyping attitudes specifically related to their children.

Children were introduced to the character selection paradigm by being presented with a violin, a familiar instrument. They heard audio of a violin and chose a character to play the instrument.

Children were presented with an 8-second audio clip that did not resemble the sound of any common instrument and asked to choose a character to play the instrument.

Results

6- to 8.5-year-old children

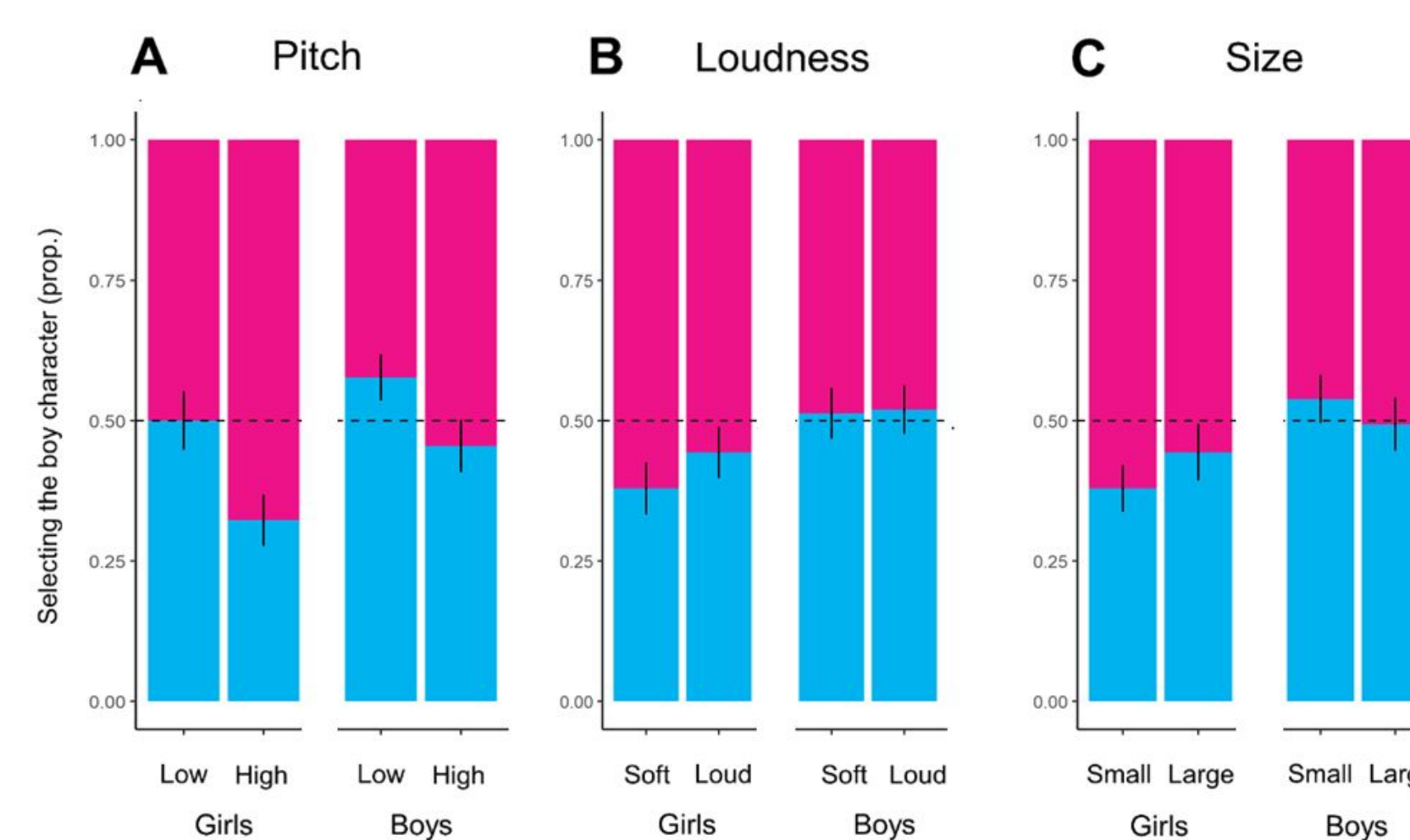
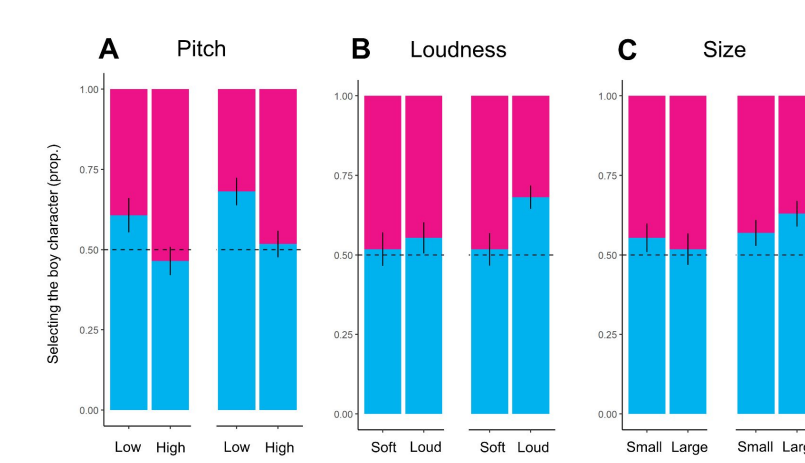


Figure 1. Depicts the proportion of 6- to 8.5-year-old children selecting the boy character. Participant gender is depicted on the x-axis.

8.5- to 11-year-old children



Adult undergraduates

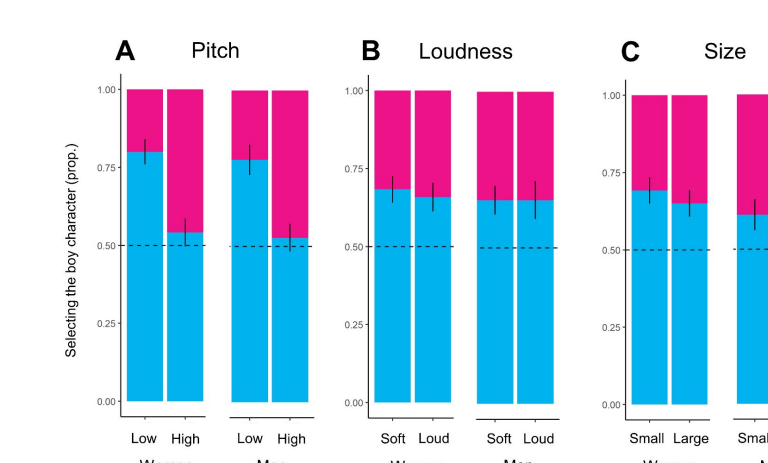


Figure 2. Depicts the proportion of 8.5- to 11-year-old children and adults selecting the boy character (Rickett et al., in prep). Participant gender is depicted on the x-axis.

Pitch

- Hypothesis:** We predicted that, consistent with older children and adults, lower pitches would be considered more masculine.
- Results revealed a significant effect of pitch, with children more likely to associate low-pitched instruments with boys ($p < 0.001$, 54% of selections) than girls (39% of selections).

Loudness

- Hypothesis:** We predicted that, consistent with older boys' judgments (Rickett et al., in prep), loud instruments would be considered more masculine.
- No significant effects found.

Size

- Hypothesis:** We didn't have any strong predictions about size, as neither children nor adults showed gender-size associations (Rickett et al., in prep).
- No significant effects found.

Discussion

- Findings suggest that gendered associations with pitch emerge earlier than associations with loudness, and that neither older nor younger children associate gender with instrument size.
- Results suggest that interventions aimed at reducing gender bias in music could prioritize pitch associations over loudness or size.
- Targeting this early-emerging association may more effectively promote equity in musical participation and encourage children to explore a wider variety of instruments.

Future Directions

- Ongoing analyses are investigating potential effects of parent beliefs on children's judgments
- No effects were observed for instrument size - does instrument weight matter more than size?
- Which other features affect children's gender judgments about instruments?
 - Shine, color, or material properties?
 - Method of play (e.g., hard vs. soft movements)?

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