

# Are musical abilities related to speech prosody perception? A meta-analysis

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## BACKGROUND

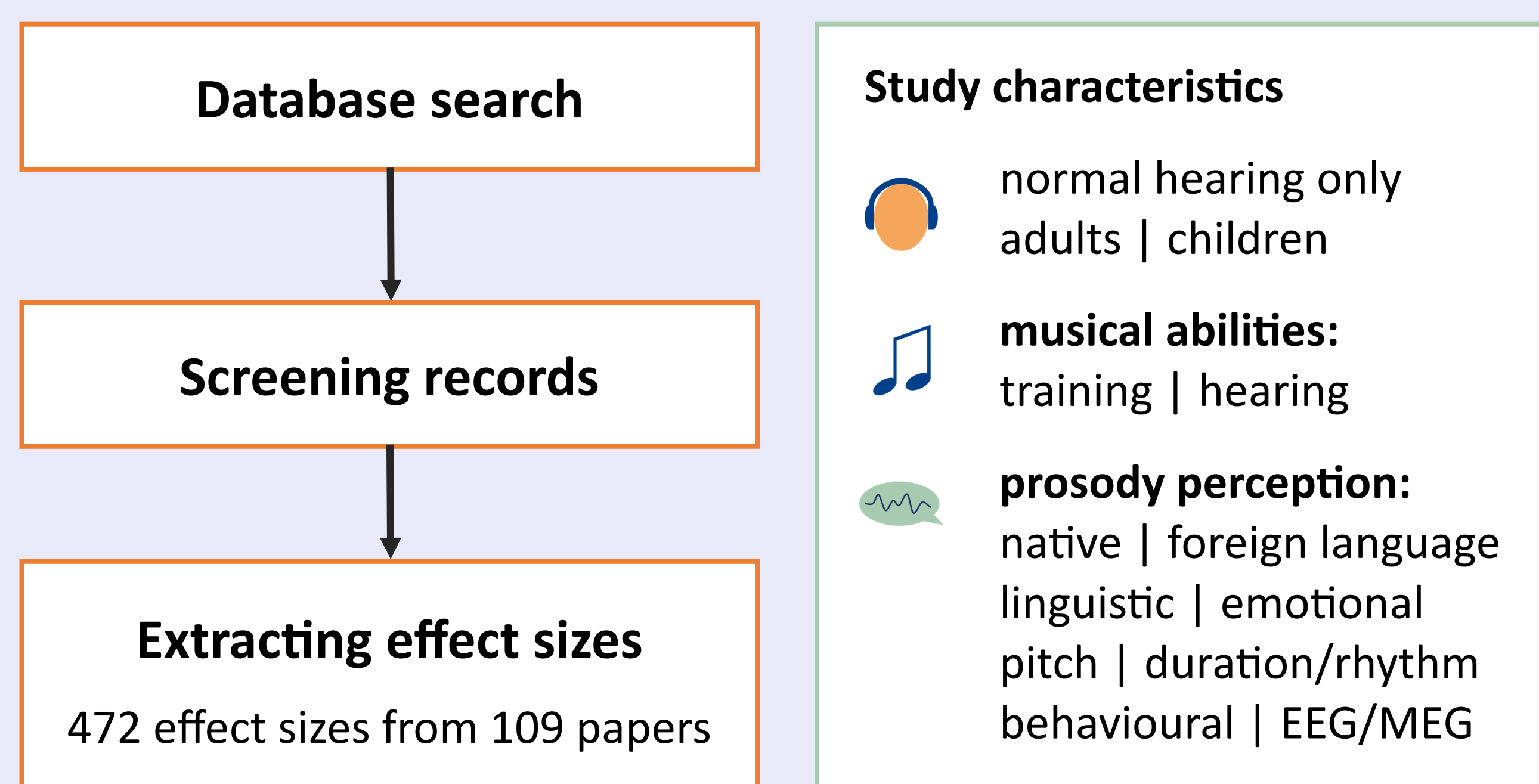


- ◆ Studies show better perception of prosody by musically trained participants [1, 2] and positive correlations between musical hearing and prosody perception [3, 4]
  - ◆ But: effect sizes differ, some find no relation [5]
  - ◆ Factors influencing mixed results remain unclear
- For example:**
- ◇ Musical abilities: music training vs. musical hearing
  - ◇ Prosody perception: native vs. foreign language perception

## CURRENT STUDY

- ◆ A meta-analysis of previous findings to assess the relationship between musical abilities and the perception of speech prosody
- ◆ Which factors contribute to differential results?

## METHODS



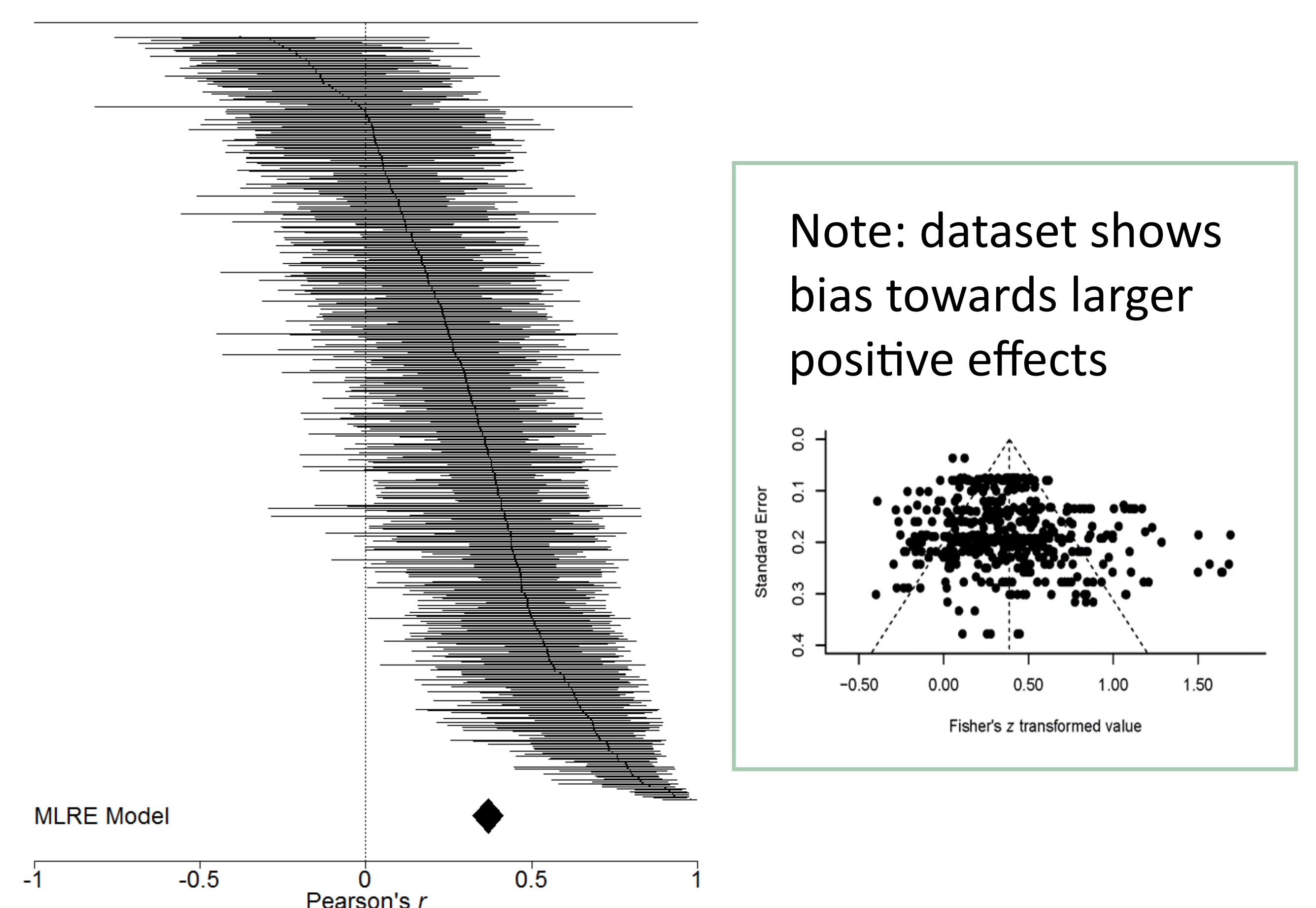
### Statistical analysis

- ◆ Multilevel random-effects model to compute a pooled correlation effect size
- ◆ Multilevel mixed-effects models to assess the influence of different study characteristics

## RESULTS

Musical abilities and speech prosody perception are correlated

$$r = 0.37 \quad (p < .001)$$



### The correlation is significantly larger for ...

- ... musical hearing metrics than for music training
- ... foreign language than for native language perception
- ... pitch perception than for duration/rhythm perception
- ... behavioural performance than for electrophysiological measurements

## DISCUSSION

- ◆ Musical hearing is **more strongly related to prosody perception** than to music training
- ◆ Musical abilities may especially benefit the perception of **foreign language prosody**
- ◆ The overall effect size is potentially overestimated due to **publication bias**
- ◆ This correlation generally supports frameworks proposing transfer between music and speech in overlapping neural networks [6, 7]



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### References

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