

Accommodation to Vocal Pitch in Children with Autism



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Background

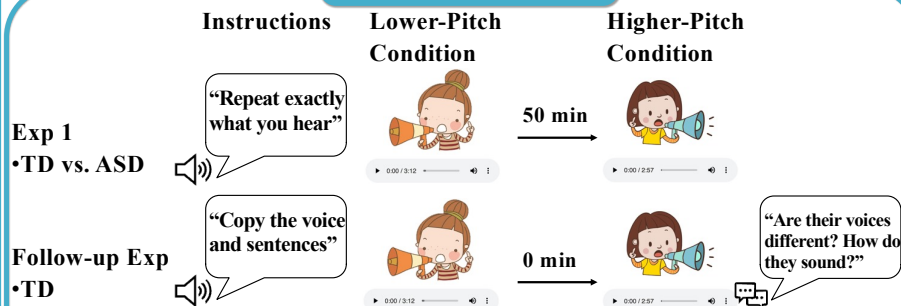
- Speech accommodation is a process of spontaneously adapting to the speech characteristics of another talker.
- Accommodation can be impacted by social factors (e.g., model talker's proficiency, social affiliation).
- Yet, little is known regarding the processes of speech accommodation in autism, and whether speech accommodation is impacted by social biases in this population.
- Autistic children often display atypical speech prosodic profiles (McCann and Peppé 2003).
- **Can autistic children spontaneously accommodate to the pitch of adult model talkers in a less socially demanding context, that of a sentence repetition task?**

Participants

Group	Experiment 1		Follow-up Experiment
	TD	ASD	TD Follow-up
N (# of Girls)*	16 (14)	27 (3)	16 (9)
Mean Age (SD)	8.21 (1.53)	8.07 (0.79)	7.45 (1.39)
Mean SCQ (SD)	5.04 (5.42)	14.17 (5.14)	4.31 (3.57)
Mean RBS-R (SD)	-	31.56 (17.51)	-

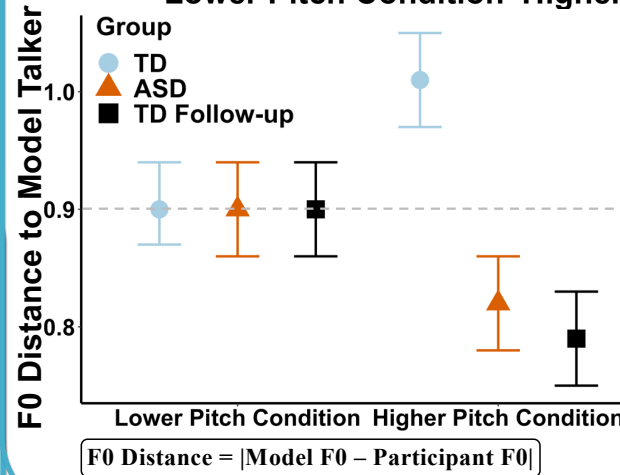
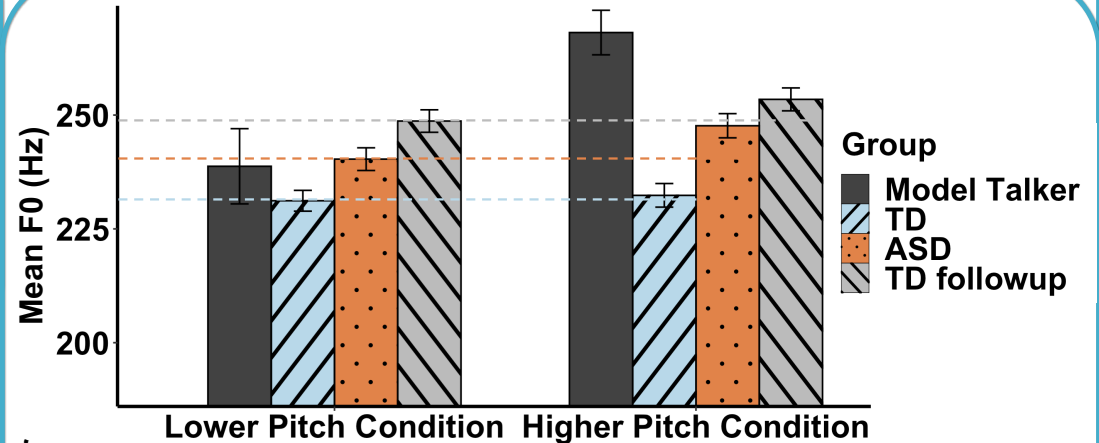
*Gender was entered as a covariate in all analyses.

Methods



• The pitch of the new model talker was artificially manipulated to be 50 Hz higher than the original talker in Redmond (2005) using the Time-Domain Pitch-Synchronous Overlap-and-Add (TD-PSOLA) method in Praat (Moulines & Charpentier, 1990; Boersma, 2001).

Results



• **Autistic children displayed evidence of spontaneous accommodation to vocal pitch even in the absence of explicit instructions.**

TD-followup impression	higher (4) lower (2) normal (2) louder (1) deeper (1) slower (1)	higher (4) lower (3) squeakier (2) quieter (2) unreal voice (1) faster (1)
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Summary

- Autistic children spontaneously accommodate to the pitch of the model talker even when explicit imitation of pitch was not instructed.
- TD children only showed pitch accommodation when they were explicitly asked to copy the voice of the model talker.
- Future studies in naturalistic settings would need to investigate whether autistic children form the same social attributes based on the voice of the model talkers and whether that influences their pitch accommodation.