The development of perceptual dialect categories from childhood through adulthood

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Introduction

- Adult listeners are able to perceive subtle dialect differences and accurately categorize speakers according to their dialects (Clopper & Pisoni, 2004, 2007).
- Children are sensitive to some large acoustic-phonetic differences (e.g., international dialects, Wagner, Clopper, & Pate, to appear), but they are less sensitive to more nuanced differences among regional dialects and not as good as adults at identifying regional dialects (Williams, Garrett, & Coupland, 1999).
- The current study investigates the developmental trajectory of perceptual dialect categories from childhood (8 years old) through adulthood using an auditory free classification task.
- The questions it addresses:

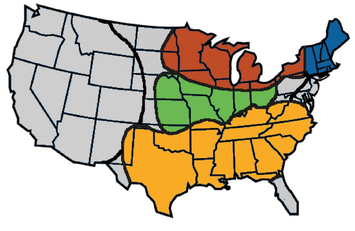
  - What do listeners of different ages know about regional dialect variation in their native language?
  - How do dialect perception skills develop as an individual's linguistic experience expands?

Methods

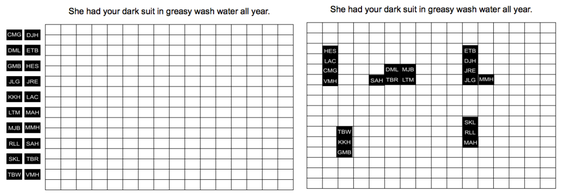
- Data collection: Buckeye Language Network Lab at the Center of Science and Industry (COSI), Columbus.
- Listeners: Visitors to COSI; monolingual speakers of American English.

Listener Age	Female Talker	Male Talker	Total
Elementary School (8-11, mean=9.4)	51	49	100
Middle & High School (12-17, mean=14.0)	49	44	93
Adult (18-86, mean=38.1)	110	90	200

- Talkers: 20 male and 20 female talkers from TIMIT corpus. 5 talkers from each of 4 dialect regions (New England, North, Midland, and South) in the US.

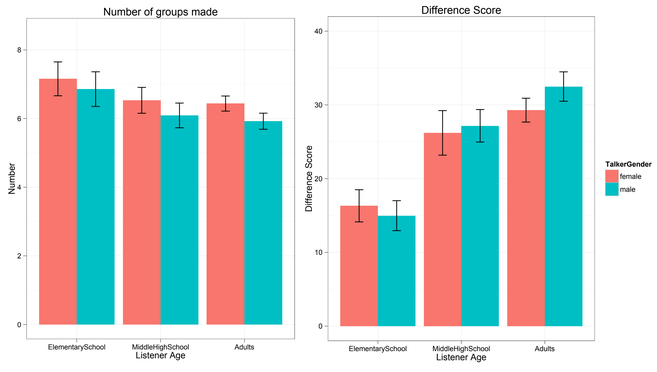


- Stimulus: "She had your dark suit in greasy wash water all year".
- Procedure: Participants listened to the stimulus sentence and were asked to put all of the talkers from the same part of the country in a group together.



Stimulus presentation before (left) and after (right) the free classification task

Results



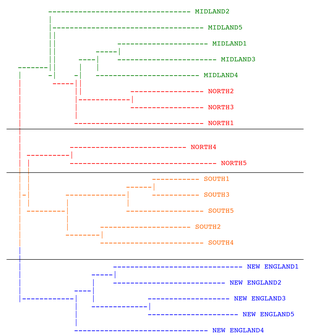
	Number of groups made	Difference Score (% correct pairings - % errors)
ANOVA	Listener Age ($p < 0.05$)	Listener Age ($p < 0.001$)
Tukey Test	Adult : Elementary School ($p < 0.05$)	Middle & High School : Elementary School ($p < 0.001$) Adult : Elementary School ($p < 0.001$)
Means	Adult = 6.2 Elementary School = 7.0	Adult = 30.7 Middle & High School = 26.7 Elementary School = 15.7

Clustering solution for each age group

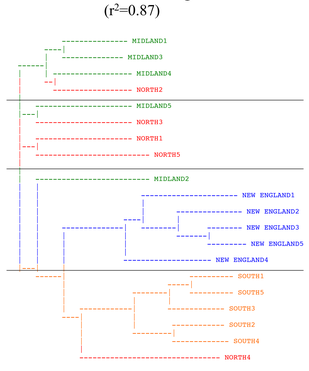
(additive similarity tree)

Female talker

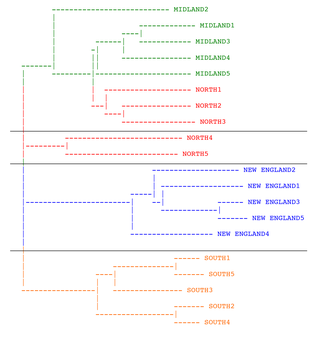
Listener: elementary school (r^2=0.82)



Listener: Middle & High School (r^2=0.87)

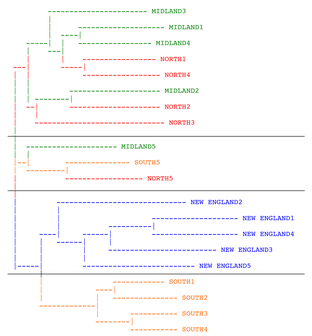


Listener: Adults (r^2=0.94)

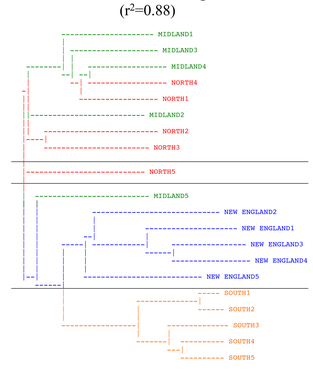


Male talker

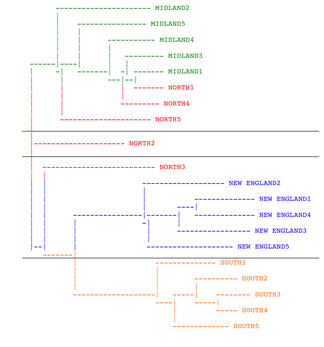
Listener: elementary school (r^2=0.72)



Listener: Middle & High School (r^2=0.88)



Listener: Adults (r^2=0.97)



Conclusion

- Elementary school children exhibited different classification strategies from middle & high school children and adults in the free classification task:
  - they made more groups of talkers, suggesting that they were attentive to differences between dialects.
  - they were significantly less accurate in categorizing the unfamiliar talkers by regional dialect.
  - the r-squares of the similarity trees increase over age for both female and male talkers, indicating an increase in model fit over age.
- The perceptual dialect similarity spaces for listeners of different ages were qualitatively similar, and this is true for both female and male talkers (four main perceptual clusters were found: New England, South, "major" North and Midland, and "minor" North and Midland).
- School-age children's skills with regional dialect perception are still developing, but close to adults'.

References

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