Perceptual Differentiation of African American and European American Children Based on Gender and Ethnicity of Listeners

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The goal of our research is to examine how the changes of the voice from the perspective of listeners affect the accuracy with which they are able to identify these same aspects of a child speaker. Studies have suggested that there is evidence of developmental progression begins in childhood, with the most dramatic changes of the voice from mid- to late adulthood; however the developmental progression actually begins in childhood, with the most dramatic effects typically noticed during adolescence. 

**What We Know:**

- There are studies that discuss the “aging voice” (American Academy of Otolaryngology, 2011). The aging voice is conventionally conceived of as the change in voice from mid- to late adulthood; however the developmental progression actually begins in childhood, with the most dramatic effects typically noticed during adolescence.

- Few studies have investigated the developmental changes of the voice from the perspective of acoustic phenomena leading to perceptual variation. 

- Studies have suggested that there is evidence of both perceptual and acoustic variation with respect to speaker ethnicity (Trent, 1995).

**Why:**

- Adult voice is typically achieved by age 14 for girls and 15 for boys (Berger, 2008). However, there is a gradual lowering of the voice beginning with the onset of puberty, which could begin as early as age 10 (Teen Growth, 2000).

- The fundamental frequency of a child’s voice lowers, influencing the phonological space, which could result in differences across gender especially for the 11 and 12 year olds.

**RESULTS**

- Listeners identified forward blocks, sentences, European American speakers, and male speakers with significantly greater accuracy.

- **African American male speakers** were identified most accurately, followed by: European American females, and European American males, with African American females being the least accurately identified.

- For both listener genders, **European American** speakers were identified with the greatest accuracy. For male listeners, temporal condition did not make a difference for African American speakers, but did make a difference for European American speakers. Temporal condition did not affect female listeners’ accuracy in identifying ethnicit.

- All listeners were most accurate with **male speakers**. AHANA female listeners were more accurate than the European American female listeners with female speakers. European American male listeners were more accurate than male AHANA listeners with female speakers.

**HYPOTHESES**

- We expect that minority (African American, Hispanic, Native American, Pacific Islander, and Asian American) and female participants will have greater accuracy for all speakers.

- We also anticipate that accuracy of identification will improve as the age of the speaker increases due to the changing of the voice as a result of puberty.

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**REFERENCES**