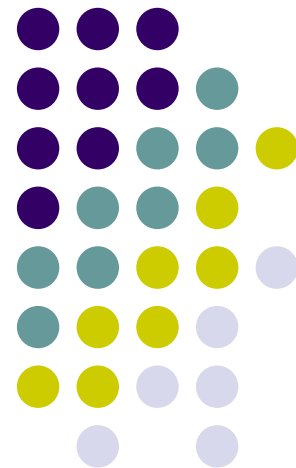


A Comparison of Habitual Pitch and Derived Optimum in Normal Speakers

K. Lenée Moseley
Eastern Illinois University





Background Information

- Pitch is an important element in the evaluation of the human voice. (Boone & McFarlane, 1988)
 - Habitual Pitch
 - Optimum Pitch
 - 25% Method to determine derived optimum F_0 (Fairbanks, 1940, 1966)

Derived Optimum F_0 Method



- Fairbanks (1940,1966) and Pronovost (1942) performed early preliminary research regarding the method of derived optimum pitch for determining optimum F_0 and each agreed with the 25% Method.

Questioning Derived Optimum F_0 Method



- Britto and Doyle (1990) compared the habitual and derived optimum fundamental frequency values in normal young adult speakers.
- Britto and Doyle concluded “very few speakers produced a habitual pitch that corresponded to 25% of their respective range above the lowest produced frequency.”



Purpose

- The purpose of this study was to replicate portions of Britto and Doyle's (1990) research and to determine if there is a significant difference between the habitual pitch of normal speaking males and females and the optimum pitch predicted using the 25% Method.



Subjects

- Twenty adult males (M age = 21.25) and twenty adult females (M age = 20.75) served as subjects in this study.
- Each subject met the following criteria:
 - Between 18 and 22 years of age
 - Lifelong nonsmoker
 - No history of laryngeal pathology
 - No evidence of voice abnormalities (i.e. breathiness, hoarseness, hypernasality, etc.)
 - No formal vocal training
 - No history of speech/language reading problems
 - English as his or her Native language
- All subjects attended Eastern Illinois University.

Pitch Evaluation

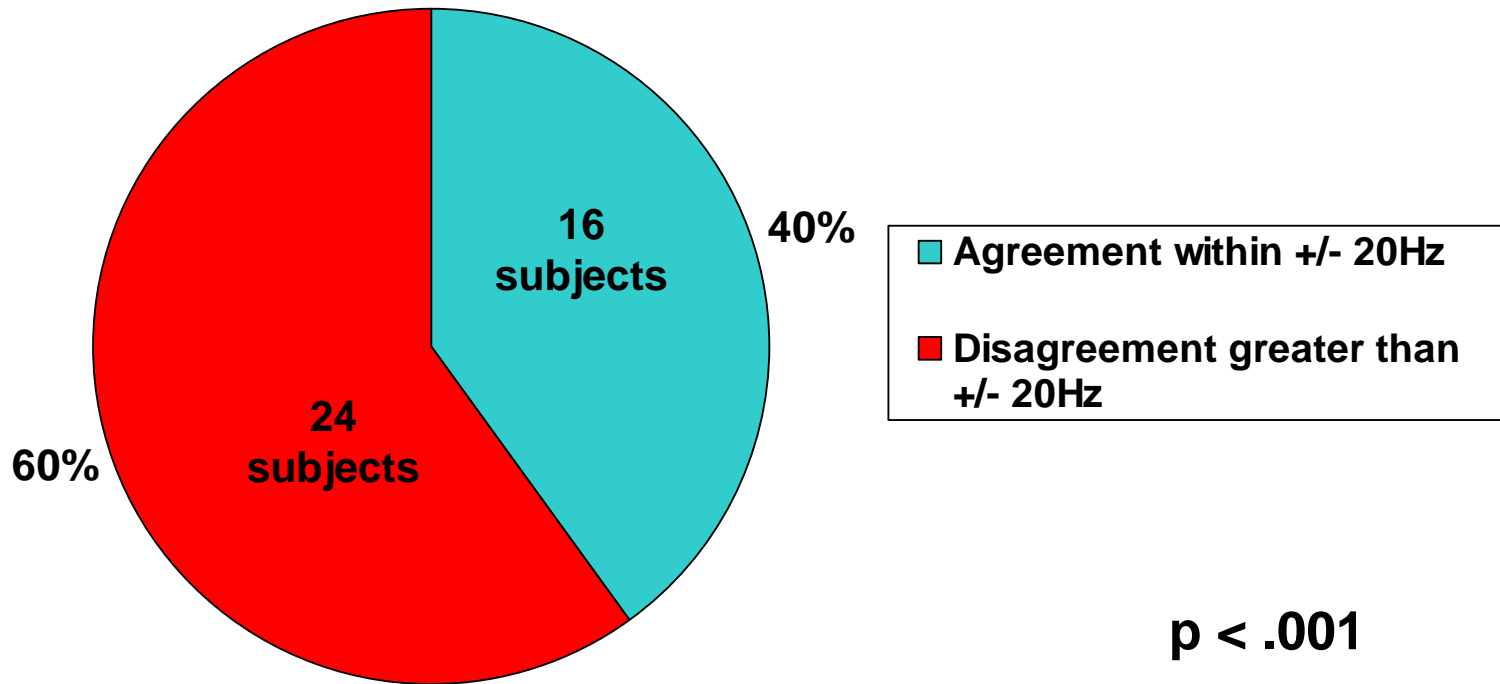


- All recordings were made in a quiet environment using the Visi-Pitch III/Sona-Speech (Model 3900, Kay Elemetrics).
- Obtaining Habitual Pitch
- Calculating Derived Optimum Pitch



Results

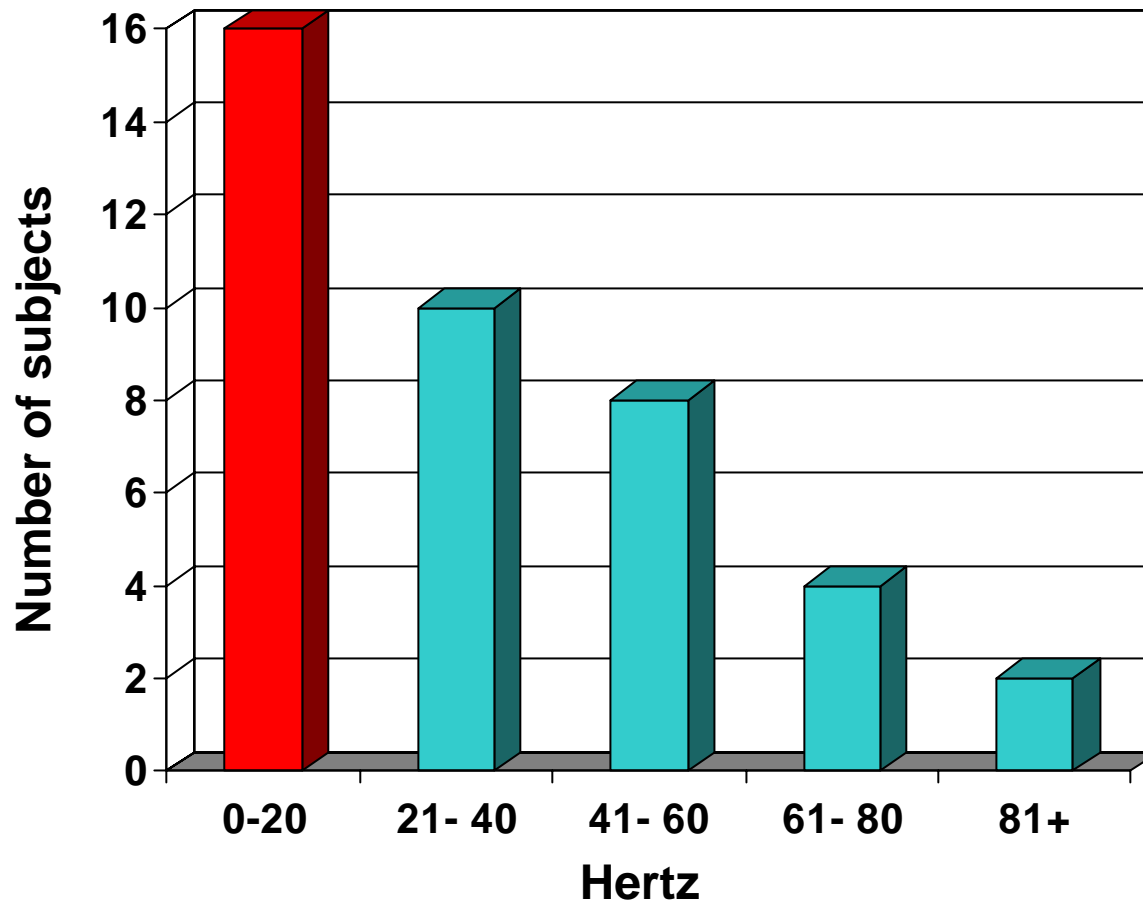
The percentage of agreement and disagreement between habitual F_0 measures and derived optimum F_0 measures.



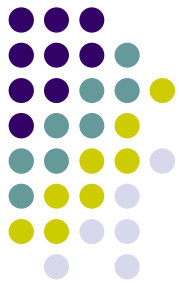


Results

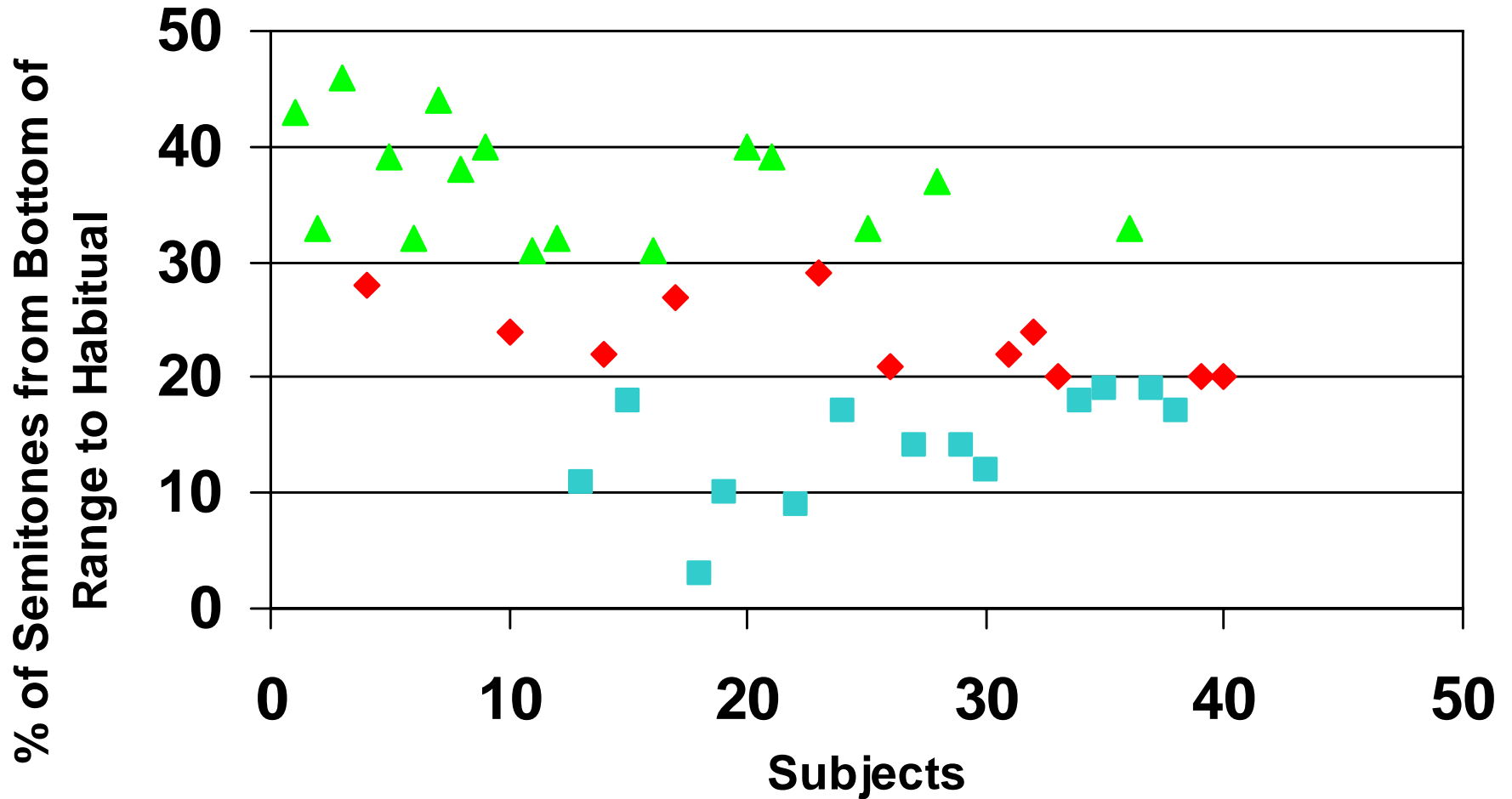
Difference between habitual F_0 measures and derived optimum F_0 measures.



Results



◆ 20-30% ■ Less than 20% ▲ Greater than 30%



Discussion



- This present study supports the findings of Britto and Doyle (1990) in stating that the 25% Method is not an accurate predictor of habitual pitch.
- **Clinical Implications**
 - Consider abandoning the 25% Method
 - Consider using a perceptual judgment for determining the best habitual pitch as proposed by Boone and McFarlane (2000).
- **Future Research**
 - Replication could be necessary with a larger group that is more representative of diverse populations.



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