Name(s)

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Project Title

Human Speech Component Analysis

Abstract

Objectives/Goals

This project#s purpose is to explore the components of speech perception, to answer the question #What do humans actually hear when they listen to speech.# This project was done to add more to the speech knowledge base and research methods for speech recognition.

Methods/Materials

A speech component analysis experiment was conducted. In this experiment, voice samples were filtered so pitch, power, and relative frequency compositions are separated into different samples. The experiment consisted of a multiple choice accuracy of perception test.

Results

The statistical analysis shows that the fundamental pitch and the relative power of the sound failed as a medium of communication, but the relative pitch compositions allowed subjects to discern almost half of the phrases.

Conclusions/Discussion

The data supports the original hypothesis. Relative compositions contain much more discernable audio information in relation to speech. The information collected in this project may be used for further speech research. Future algorithmic speech recognition research based on relative harmonics should be conducted.

Summary Statement

This project uses computer science and human tests to determine what basic component of sound is interpreted into speech.

Help Received