SPECIAL SESSION

ACOUSTIC ANALYSIS OF PARKINSONIAN SPEECH: ISSUES METHODS AND APPLICATIONS

Shimon Sapir, Sabine Skodda, Athanasios Tnasas, Jan Rusz.

Parkinson's disease (PD) is a slowly progressive and highly debilitating disease of the central nervous system, affecting 8,000,000 or more people the world over. By the time the disease is diagnosed, 60% of nerve cells in the substantia nigra are degenerated and 80% of dopamine is depleted in the striatum. There is an urgent need for cost-effective methods to detect the disease in its early phases, to differentiate it from other diseases, and to monitor its progression and its response to treatment. Parkinsonian speech is characterized by abnormally low voice intensity, with vocal decay, poor voice quality, reduced prosodic pitch and loudness inflection, imprecise vowels and consonants, dysrhythmia and short rushes of speech, mumbling, and reduced speech intelligibility.

Acoustic analysis of Parkinsonian speech is noninvasive, precise, valid, reliable and cost effective. Recently, there have been new acoustic analysis methods to capture different aspects of these speech abnormalities. The purpose of this seminar is to describe these methods, present empirical findings, and discuss the advantages, disadvantages, and potential solutions of these methods. Ultimately, a combination of these and other new methods is likely to yield a powerful way to detect early signs of PD, and to characterize and monitor the disease as it progresses or in response to treatment. These issues are addressed by the following presenters:

Shimon Sapir, Ph.D.


Sabine Skodda, MD.


**Athanasios Tsanas, doctoral student.**


**Jan Rusz, M.Sc., doctoral student.**
