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An Acoustic Analysis of Singapore English with Special Reference to its Pedagogical Applications (2000-2003)

Low Ee Ling

Overview

The main aim of the project is essentially to continue with work done in two previous research projects, specifically, one held by Leszek Biedrzycki on "An instrumental study of the sounds and prosodies of current Singapore English pronunciation with special reference to contrastive and pedagogical applications" (1994 - 1997) and another jointly held by Vanithamani Saravanan and Gloria Poedjosoedarmo on "An analysis of attitudes of Singaporean teachers and teacher trainees towards various systems of English pronunciation: to be applied in the development of a realistic and appropriate model for the teaching of English pronunciation in Singapore" (1994-1996). Although both these projects have resulted in significant publications, what these findings have achieved is, in effect, a preliminary investigation into the description of the rhythm and intonation of Singapore English using instrumental analysis to confirm auditory perceptions. A preliminary description of attitudes towards different varieties of Singapore English was also attempted but pedagogical applications of the preliminary findings were not explored. The current project aimed to expand the preliminary investigation of Singapore English speech and to attempt a comprehensive description of both the segmental and suprasegmental aspects of Singapore English. In order to achieve this goal, a spoken corpus of Singapore English was collected as, to the knowledge of the researchers, no such corpus had been gathered for research purposes in NIE before. Such a corpus could form a database for future research on Singapore English speech. At the same time, there was an attempt to apply to the description of Singapore English the latest intonational models such as those developed by a group of researchers in Cambridge University i.e. the IViE (Intonation variation in English) model and the Discourse intonation model developed by researchers in Birmingham University. The applicability of these models in relation to describing a non-native variety of English like Singapore English was put to the test. The feasibility of teaching discourse intonation for realising specific communicative acts was also explored.

Research Objectives

The four main objectives of the research project are:

- (i) To assemble a corpus of spoken Singapore English which can be used for educational research purposes at both the national and international level
- (ii) To research into and design a syllabus for the teaching of intonation in schools
- (iii) To examine the appropriacy of current intonational models for the adequate description of Singapore English and to add to the theoretical development of intonational modeling
- (iv) To facilitate academic exchange and collaboration with world-class universities

Main Developments to Date

- (i) The NIE Corpus of Spoken Singapore English (NIECSSE) currently comprises 3 categories:
 - Interviews: 30 female Singaporean subjects, 15 male Singaporean subjects, 2 female and 2 male British subjects
 - Read passages: 3 Singaporean subjects, 3 Hong Kong subjects, 3 Filipino subjects and a variety of British English subjects reading the standard *North Wind* and the *Sun* passage which may be used for rhythmic/intonation research
 - Fricative Data: Online data from graduate students' theses are available for use by other researchers (with students' permission)

The corpus is now available on the following website: www.arts.nie.edu.sg/ell/DavidD/niecsse/index.htm. A published version of the write-up of the corpus is available at: SAAL Quarterly No 56, Nov 2001, p 2-5. The corpus is also available as a CD-Rom on request from the research team. Fellow researchers are welcome to use these recordings for research purposes, with suitable acknowledgements.

- (ii) Research and training for design of syllabus for intonation

A website entitled NIE Sounds was set up (with help from a colleague Dr Alvin Leong). Students of phonetics (course codes EAE101, EAE201, BAE333) can click on this website and hear how each of the 44 phonemes in English and the cardinal vowels (which allow us to describe the range of humanly possible vowels) are produced. Website addresses:

- Vowels: www.arts.nie.edu.sg/ell/paleong/niesounds.html
- Consonants: www.arts.nie.edu.sg/ell/paleong/niesounds2.html
- Cardinal vowels: www.arts.nie.edu.sg/ell/paleong/niecardinals.html

- (iii) To add to the theoretical development of intonational modelling

Major work in this area looked at the rhythmic classification of world languages, rhythm being one of the major influences in overall intonation patterning. We compared read passages of the *North Wind* and the *Sun*, a standard text used in phonetic research, across 18 different languages. The aim of this comparison was to attempt to validate the currently existing rhythmic classification of the world's languages, namely that of syllable-timing, stress-timing and mora-timing, by using our own classification system based on the Pairwise Variability Index (PVI) which we developed as a team. The values we obtained agree with the classification of English, Dutch and German as stress-timed and French and Spanish as syllable-timed. Values from Japanese (classified as mora-timed) appear similar to those of syllable-timed languages. However, an interesting finding

is that previously unclassified languages do not fit into any of the above categories. We also applied the PVI to compare the rhythm of Singaporean teachers with that of their pupils and found them to be statistically similar. Based on our findings, we recommend that a realistic pronunciation teaching model has to be endonormative (home-based).

(iv) To collaborate with world-class universities

So far, publications arising from this project have involved academics from Cambridge, Oxford and City University, Hong Kong.

Future Developments

We intend to widen our scope of research in the following areas:

(i) Adding to the existing corpus

More subjects are being recorded, including Singaporean toddlers and their mothers so that we can extend our inquiry into language acquisition processes, in relation to speech rhythm and intonation. More recordings are being made of read passages by English speakers of different nationalities.

(ii) Developing an interactive CD-Rom for the teaching of pronunciation in schools

With the launch of the Speak Good English Movement (SGEM) 2000, the new English Language syllabus 2001 and the completion of the grammar re-training project in 2002-2003, it seems timely that a comprehensive package for the systematic teaching of pronunciation at the school and tertiary levels be developed within the next 3 years.

(iii) Extending rhythmic investigation to Child Language Acquisition

We will be applying the PVI as a means of investigating the acquisition of rhythm by children whose native language is Singapore English (syllable-timed) and those whose parents speak British English (stress-timed). We will compare the PVIs of Singaporean toddlers with their mothers against those of British toddlers with their mothers and in the process, find out whether it is relatively easier to acquire the rhythm of a syllable-timed language (Singapore English) or that of a stress-timed one (British English).

(iv) Using spectrography for speech remediation

The use of spectrograms for speech therapy was designed to help the severely hearing impaired so that they are able to picture on screen what is wrong with their pronunciation. We intend to make use of this technique to help the less proficient speakers amongst our students to acquire the desired pronunciation targets by allowing them to be able to practise their pronunciations against the target spectrograms.

A list of publications associated with this project is available from Low Ee Ling (ellow@nie.edu.sg).

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