MSc project 2: Speech perception in Mandarin Chinese

Supervisors:
Andrew Nevins – a.nevins@ucl.ac.uk
Kevin Tang – kevin.tang.10@ucl.ac.uk

Department: Department of Linguistics

Title: Speech mis-segmentation in Mandarin Chinese

Summary:
As you are reading this sentence, the blank spaces and the letters are providing you with reliable information of word boundaries and of corresponding acoustic sounds, however our speech perceptual system does not have these privileges as speech is often a continuous acoustic signal with very few interruptions and can be distorted with noise. (Mattys, White, & Melhorn, 2005).

Cutler & Butterfield (1992) have shown that in English, speakers would mis-segment speech depending on whether a syllable is stressed or not, e.g.
*"Soon the po**LICE** were waiting" was misperceived as "Soothe the **LEAST** where waiting" (The bold and capitalised letters denotes a stressed syllable).*
The study suggested that this is due the fact that English is a trochaic language, that is with a lot more words with the stressed pattern, strong-weak (e.g. **BO**ttle, **Wa**ter etc.) than weak-strong, (e.g. gi**RAFFE**, ha**RASS** etc.)

The literature has a mixed view about whether Mandarin Chinese is also a trochaic language like English. A question that arises from this is whether Mandarin Chinese would have the same mis-segmentation pattern as English.

The hypothesis would be that if Mandarin Chinese speakers would mis-segment speech the same as English, then it would suggest that it is a trochaic language.

In this project, you will follow the footsteps of Cutler & Butterfield (1992) but with Mandarin Chinese.

You will conduct a perception experiment, which involves recording Chinese sentences, presenting the sentences to participants, and analysing the participants' responses.
(Guidance and training will be provided in all of the stages).

[This project has UCL ethics approval.]

What the project will offer you:
- Experience with recording speech materials in a professional recording environment;
- Experience with interacting with participants
- Experience with conducting experiments in linguistics and speech science.

Required skills:
- Native speaker knowledge of Mandarin Chinese
- No known language-related impairments (e.g. speaking/listening/reading);
- Ability to think and work independently;
- Basic Statistics skills (SPSS / R / Excel);

Required commitment:
The project will require ~20 hours of data collection. Tasks include preparing the perception experiment (the stimulus material, consent forms, experimental instructions, and running sheets), recruiting the participants, preparing the responses for analysis, conducting the perception experiment, participating in data analysis).

Recommended Reading:
Cutler, A., & Butterfield, S. (1992). Rhythmic cues to speech segmentation: Evidence from juncture misperception. *Journal of Memory and Language*, *31*(2), 218-236.

Mattys, S. L., White, L., & Melhorn, J. F. (2005). Integration of multiple speech segmentation cues: a hierarchical framework. *Journal of Experimental Psychology: General*, *134*(4), 477.