Part III
Keynote Lecture 2

PROCESSING SPOKEN WORDS IN A SECOND LANGUAGE: COMPETITION, PREDICTION, AND ALIGNMENT

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Listeners often find it difficult to understand speech in a second language (L2), especially in a noisy environment. Indeed, the unfolding acoustic signal may be compatible with words from multiple languages, complicating lexical access. It is also possible that L2 speech contains phonemes that are absent from one's first language (L1), hindering both perception and production. In my keynote lecture, I will discuss three properties of L2 speech processing that contribute to the difficulty (or ease) of L2 listening: (1) lexical access is language non-selective; (2) processing is predictive; (3) processing is adaptive.

One research line investigates the comprehension of interlingual homophones, words that sound the same but mean something different in the two languages, such as the English word "bay" and the Dutch word "bij" (bee). Auditory lexical decision experiments (both in English and in Dutch) showed that Dutch-English bilinguals respond more slowly to interlingual homophones than to control words. Monolingual English control subjects showed no such effect. The findings suggest that lexical access is language non-selective, so that lexical candidates from both languages compete for selection.

Further studies asked whether listeners can exploit cues to predict upcoming words in L2 (as they do in L1). If L2 listening is more effortful, listeners might find it more difficult to derive such predictions, as predicting might be effortful itself. Eye-tracking studies with English monolinguals demonstrated anticipatory eye-movements towards objects in a visual scene in response to speech. Given "The boy will eat the cake", the number of fixations to the only edible object in the scene (i.e., the cake) will go up right after verb offset (eat) and, importantly, before the object itself is mentioned. We observed that bilingual listeners displayed such prediction effects in both L1 and L2, and to a similar extent. Another lab recently independently reported very similar findings. These studies demonstrate that both L1 and L2 listeners can use lexical-semantic information about verbs to predict upcoming arguments.

A final study investigated whether L2 listeners adapt processing when they listen to a native speaker of that language. In particular, we asked whether exposure to native speech altered their production in L2. As one test case, we considered voiced final consonants in English (as in "pub") which Dutch-English speakers tend to devoice ("pup"). There were three experimental phases involving a native English speaker (our confederate) and a native Dutch speaker (the participant). First, the Dutch native speaker read aloud English sentences (baseline). Second, the English native speaker read English sentences (exposure). Third, the two speakers alternated between reading sentences (test). Dutch native speakers shifted towards more voiced productions in the test block vs. the baseline block, suggesting they adapted their speech to that of a native speaker model.