Representation of second language phonology

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Main idea: Orthography affects L2 representations by making learners aware of a contrast to the point that they encode different lexical representations, even though this ultimately hinders spoken word recognition.

Supporting data: L2 perception data for Dutch (English /e/ and /ɛ/) and Japanese speakers (English /l/ and /r/) based on psycholinguistic experiments (eye tracking, cross-modal priming).

> ***** Note *****
> This paper is from a special issue of the journal *Applied Psycholinguistics* on the influence of orthography in L2 phonology.

Paper Summary

Introduction (pp. 115–116)

- Since the phonology of L1 is acquired early in life, it is learned off of spoken input only.

- L2 on the other hand has other sources of information: asking a teacher whether something is allowed, getting indirect evidence through conversation, look at textbooks/grammars, **reading**.

Testing the nature of L2 phonological representations (pp. 116–119)

- Eye tracking can be used to examine the nature of "lexically stored phonological representations".

  - It is not spelled out explicitly in this paper, but based on knowing her work and some of the example words in a later section, we should take this to mean fully inflected forms are stored in the lexicon.

  - Despite this view of the lexicon, Cutler does not believe in episodic representations.

- The main problem that Cutler focuses on is L2 perception of a contrast that doesn't exist in L1. For example, Japanese does not distinguish between /l/ and /r/.

- One thought as to why this phenomenon might be of interest is homophony. Cutler doesn't think homophony is any more worry for an L2 speaker than an L1 speaker and that pragmatic information is already used to distinguish between homophones.

- A larger worry is that ambiguity causes more candidates to be activated during word recognition, thus slowing down the process.

- **Research Question:** if a listener cannot tell the difference between two L2 sounds, are the listener's lexical representations of L2 words containing those sounds phonologically identical in the relevant respect?

  - It turns out, no, they are not identical.

- Eye tracking studies usually use a "visual word paradigm" with pictures of relevant lexical items.

- Dutch L1 speakers don't have a contrast between /e/ and /ɛ/, so they would see pictures of a *pencil* and a *panda*.

- Japanese L1 speakers don't have a contrast between /l/ and /r/, so they would see pictures of a *rocket* and a *locker*.

- Each group of listeners was played only the first syllable from each item (/pæn/ and /pɛn/ or /rɑk/ and /lɑk/).

- In both cases, the speakers only looked at one item:

  - *pencil* for the Dutch L1 speakers and *locker* for the Japanese L1 speakers.

- Speakers therefore perceive both sounds as a single category, but if the lexical representations contained only a single category, then we would expect a split closer to 50/50 in which item they choose to look at. Therefore, the lexical representations must be different.

- Cutler argues that this is where orthography and metalinguistic knowledge comes into play.

- It is not the case that listeners store orthographic information as part of the representation, but rather that it informs a listener that there should be two different representations for a contrast.

Lexical representations without perception: help or hindrance for the leaner (pp. 119–122)

- Some have argued that orthography helps by alerting L2 leaners to a contrast. The results of the previous section suggests that it is not helpful at all. In fact, Cutler argues that it actually hinders the learner by increasing competition in the word recognition process.

- Cross-modal priming was used to show why this is the case.

  - Listeners hear spoken input and then perform a lexical decision task (*is this a word?*) on letter strings on a computer string.

  - A listener will respond quicker if they hear the word/a similar word beforehand (priming is a proxy for word activation).

- Hearing *deaf* or even the *def-* from *definite* primes DEAF for L1 and L2 listeners.

- Hearing *daff-* from *daffodil* primes DEAF for Dutch L2 listeners but not L1 listeners.

- Hearing *definite* in full does not prime DEAF for either L1 or L2 listeners.

- Hearing *daffodil* in full does continue to prime DEAF for Dutch L2 listeners.

  - Since the lexical representation of *daffodil* contains a different vowel, it was never activated in the first place. Likewise, there is no /dɛfədɪl/ to become activated, so DEAF does not have any competition.

- "L2 learners are doing themselves no perceptual favor at all by incorporating into their lexicon (whether by using information from orthography or from any other source) a distinction that they cannot reliably perceive in the input."

Orthographic information about phonology (pp. 122–125)

- Phonemic repertoire is not the only phonological information that L2 learners must master.

- Writing systems provide reasonably good info about phonemic repertoires, but nonsegmental phonological information in orthography is not great.

  - Sentence prosody: some punctuation exists, but it is largely redundant and must be learned from listening.

  - Lexical prosody: very rarely do languages mark stress and it is usually only exceptions that get marked. The general pattern must again be learned from listening.

  - Phonotactics: it may be inferred from some orthographies, but the more opaque the written language, the less support there is for learning.

  - Casual speech processes: some novelists use it occasionally (e.g. *doncha* for *don't ya*) but for the most part these types of processes are never documented in formal writing.

  - Lexical tone: the fact that it's marked makes it more similar to segmental information rather than suprasegmental info.

Conclusion (pp. 125–126)

- Orthography can be used to help highlight segmental contrasts, but can hinder their spoken word processing.