Introduction

- Bilinguals process cognates differently from noncognates in speech production (e.g., Costa et al., 2000; Gollan & Acenas, 2004).
- Within lexical and phonological processes, cross-language interactions are influenced by word-level properties; i.e., they are lexically conditioned.

*Does lexical conditioning extend to fine-grained phonetic properties?*
- It is well known that there is phonetic transfer across languages.
- Phonetic realization of L2 segments is similar to that of L1 (e.g., Crowther & Mann, 1992).
- Phonetic processes from L1 affect L2 production (e.g., Davidson, 2006).
- Previous studies of L1 → L2 transfer: Methodological issues
- Cognates and noncognates not phonologically matched (Flege et al., 1998).
- Only a single item (Flege & Munro, 1994).

Focus of the current study

Is cross-language transfer lexically conditioned? • Examine transfer in German-English bilinguals.
• Compare degree of transfer for matched cognates vs. noncognates.

Summary of results

In certain cases, cross-language transfer is lexically conditioned.
• Transfer from dominant language is influenced by cognate status.

Methods and Materials

Speech Materials: English
- Quadruplets of words: 1 German-English cognate/failure pairs ending in voiced consonant, 1 cognate ending in voiceless consonant, 1 voiced noncognate, 1 voiceless noncognate
- Matched for lexical frequency and the following phonetic properties:
  - Syllable and phoneme length
  - Final consonant in each quadruplet
  - Vowel preceding final consonant
  - Phonotactic probability (sum segmental and biphone probability).
- 10 /t/-/d/ final quadruplets, 10 /k/-/g/ final quadruplets
- Sample quadruplet: <Suite> - <Tweed> (cog.) & <riet>, <Ried> (noncog.)

Speech Materials: German
- Cognate/noncognate quadruplets as in English.
- Matched for lexical frequency and
  - Syllable and phoneme length.
  - Final consonant in each quadruplet.
  - Vowel preceding final consonant.
  - 6 /t/-/d/ final quadruplets, 4 /k/-/g/ final quadruplets
- Sample quadruplet: <Suite> - <Tweed> (cog.) & <riet>, <Ried> (noncog.)

Procedure
- Words were presented visually for self-paced reading.
  - English block followed by German for bilinguals.
  - All instructions given in the language of the block.
  - Within each block, stimulus list repeated in three random orders.

Analysis
- Measurements were taken of acoustic cues to the final voicing distinction:
  - Vowel duration
  - Closure duration
  - Center of gravity of burst
  - F1 offset of vowel
  - Voicing into closure
  - Release duration
  - Proportion stops released

Discussion

Implications for theories of speech production:
• In certain cases, L2 → L1 transfer is lexically conditioned.
  - Consistent with lexically conditioned phonetic variation in monolinguals (Baese & Goldrick, 2007).
  - Cognate effects have been used to argue for cascading activation between lexical and phonological processes (Costa et al., 2000) – these results suggest similar interactions are present between lexical, phonological and phonetic level processes.

Why absence of lexical conditioning in L1 → L2?
• Proficiency/dominance: all bilinguals were highly proficient in English and reported predominantly using English in their daily lives.
  - English may have become their dominant/most proficient language.
• Current analyses: Examine for contrasting effects in low-proficiency German-English bilinguals.

References


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