Background

Second language acquisition
• In language acquisition research (e.g., SLA; Flege, 1997) it has been argued that L2-specific sounds (e.g., French /u/ has no close equivalent in English) are acquired more native-like than L2 sounds that are similar to native-language sounds (e.g., French /u/ is similar to English /u/). Alternatively, it may be the case that L2 sound pairs that are similar to L1 phoneme categories are easier to distinguish than L2 pairs that don’t have a similar L1 pair (PAM; Best, 1995). It is not clear whether these same patterns hold true for attrition.

Bilingualism research furthermore suggests that lexical status (i.e., whether a word is a cognate that shares form and meaning across languages or not) influences the processing of words in an L2. In speech perception, usually a “cognate facilitation” effect is observed, i.e., cognates are generally processed faster and/or more accurately than noncognates (e.g., de Groot & Keijzer, 2000). Whether the influence of lexical status show similar patterns in language attrition, however, is unclear.

Language attrition
• The majority of L1 and L2 attrition studies has focused on syntactic or lexical attrition (e.g., Schmid, 2002), and lexical properties such as cognate status have not usually been taken into consideration. Furthermore, only a handful of studies have attempted to explain phonological attrition in the L1 (e.g., de Leeuw, 2008) or the L2 (e.g., Weltens, 1989). Results have been mixed, some findings showing attrition of certain sounds, and others (Weltens, 1989) finding improvement in L2 sound processing even in the absence of further exposure. A systematic analysis of spoken language attrition covering phonological as well as lexical factors has yet to be undertaken.

The present study

Phonological attrition: In Experiment 1, we investigate attrition in the perception of L2 sounds that are acoustically similar to native English-language sounds versus sounds that only exist in the L2 French.

Lexical attrition: In Experiment 2, we test whether cognate status of a word influences lexical attrition.

Methods

Participants
• 15 native speakers of English, L2 speakers of French (3 males, 12 females).
• Undergraduate students at Northwestern University, had spent Fall semester 2009 (3.5 months) in France.
• Participants reported little to no exposure to French after their return to the U.S.:
  - currently exposed to French < 10% of the time, no French classes, no trips to French speaking countries

Procedure
• AX data: Participants performed near ceiling for word-word (“same”) pairs, so only word-nonword (“different”) pairs were analyzed
• Lexical Decision data: only “word” items were analyzed
• For reaction times (RT) only correct responses were analyzed

Results

Experiment 1: Phonological Attrition

Materials
• 90 French word pairs, consisting of two tokens of the same French word spoken by female native speaker of French
• 90 word-nonword pairs, consisting of a French word and a nonword created by changing one sound in the word (“critical sound”)
• Words matched for frequency in French, critical sounds and surrounding sounds, length (phonemes), syllables
• French critical sounds either had a close English equivalent (e.g., French /u/ and English /u/) as “similar” sound, or they had no close equivalent in English (e.g., French /y/) as “different” sound.
• critical sounds were vowels or consonants: e.g., word-word: tauau – tauaou (“bull”): word-nonword: dur – doure (“hand”)

Procedure
• AX discrimination task:
  - Participants heard stimulus pair and indicated via key stroke whether they heard the same word twice or different words.

Materials
• 60 French words
• Words were French-English cognates (e.g., “due”) or noncognates (e.g., “voiture”/Engl. “car”)
• 60 nonwords created by changing one sound in each of the French words
• French words were matched for lexical frequency in French, and length in phonemes and syllables

Procedure
• Lexical decision task:
  - Participants hear stimulus words and nonwords one at a time and indicate via key stroke whether what they heard was a French word or not.
  - Instructed to answer as fast and accurately as possible

Conclusions

• The similarity effect for sound discrimination in the AX task is consistent with previous work (e.g., Flege, 1987). Performance on similar items is worse at both times: similar sounds may not be acquired as deeply as different sounds, leading to lower accuracy rates, but attrition for the two types of sounds is similar.

• Cognate facilitation as found in the lexical decision task is also consistent with previous research on language acquisition (e.g., de Groot & Keijzer, 2000). Parallel activation of both languages that share cognates leads to faster and deeper processing of cognates versus noncognates. However, we found no change across time with regard to cognate facilitation: both cognates and noncognates were retained equally well.

• Why attrition in AX but not Lexical Decision?
  • Not due to different stimuli, because the words in both tasks contained the same critical sounds and sound contrasts.
  • Lexical decision induces engagement with the stimuli and thus deeper processing. This might make the task less affected by attrition.
  • AX discrimination requires metalinguistic judgement, whereas for lexical decision, retrieval of word meaning alone is enough. The attrition effects found in the AX task here may in fact be signs of attrition of this metalinguistic ability in the L2.

• Participants were faster at Time 1 than Time 0. This may be due to improved language skills or simply because of familiarity with the tasks at Time 1.

References


de Groot, A. & Keijzer, R. (2000). What hard to learn is easy to forget? The role of word correspondance, cognate status, and word frequency in foreign language learning and forgetting. Language Learning, 50, 1-56.


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