

Dominance shift during the stay-abroad experience: a tip-of-the-tongue experiment

Victoria Kamp¹, Maud Pélissier¹

¹Université Paris Cité, CLILLAC-ARP, F-75013, Paris France

<https://doi.org/10.36505/ExLing-2022/13>

Abstract

Previous research found that changes in the linguistic and socio-linguistic environment of bilinguals can provoke language dominance shifts. Investigating vocabulary loss permits to find differences in the quality and quantity of linguistic knowledge that deteriorates through attrition processes. This longitudinal study evaluated the effects of study abroad programs on L1 cognate and non-cognate word retrieval. Subjects were French-English bilinguals spending one to two semesters in an English-speaking country. Results of a picture-naming task show that the participants experienced less tip-of-the-tongue states in their L1 than in their L2 and retrieved cognates more easily than non-cognates. Profiling questionnaires helped to evaluate the correlation between those results and their monthly exposure to English.

Keywords: attrition; tip-of-the-tongue experiment; lexical retrieval; language dominance

Introduction

The phenomenon of non-pathological loss of a native or first language (L1) is called attrition and can occur in a bilingual's (or multilingual's) life when he or she acquires and uses an additional language (L2), leading to an impoverishment of the first language (Schmid and Köpke, 2009). This provokes changes in the structural aspects of the language and the speaker's proficiency in the first language. Previous research indicates that vocabulary is one of the more vulnerable linguistic abilities (Köpke and Schmid, 2011). The attrition of the L1 is not only a consequence of the lack of use of it, but also a consequence of translinguistic influences that are entailed by the contact with the second language (Kroll & Stewart, 1994).

During studies abroad, a shift of dominance can ensue: the L1 is used less frequently, and lexical access becomes harder, while L2 proficiency increases. The competition between both languages as well as a dominance switch may lead to L1 attrition. Lexical access has been found to be one of the most vulnerable linguistic skills; and tip-of-the-tongue occurrences hint at a deterred access to the phonological form of the word, while the concept is activated. To account for TOTs in L2, two main frameworks have been used: the "weaker link" hypothesis (Gollan, Montoya, Cera & Sandoval, 2008), which postulates that the more restricted use of L2 leads to weakened connections between form

Proceedings ExLing 2022: 13th International Conference of Experimental Linguistics, 17-19 October, Paris, France

and concepts, and language competition or cross-language interference, which assumes that impaired retrieval comes from competition from the other language. This study focused on investigating the effects of studies abroad on L1 vocabulary loss. As it becomes harder to retrieve words in the neglected language, more tip-of-the-tongue states should occur.

Methods

Participants

19 native speakers of French aged 19 to 25 took part in this study. All were university students completing a bachelor or master's degree and had intermediate to advanced proficiency in English. All participants were spending one ($n=3$) or two semesters ($n=16$) abroad for studies in an English-speaking country. All participants filled out a questionnaire investigating their background as bilinguals. This was then followed by monthly forms to record the frequency of use for both languages.

Materials and procedure

The participants were tested on L1 word retrieval on three occasions during their stay. A list of 420 stimuli were selected, comprising 180 English non-cognate words, 180 French non-cognate words and 180 French-English cognates. All stimuli were low-frequency words (frequency inferior to 50 per million occurrences) and were associated with black line drawings taken from the IPNP (Szekely et al., 2004) or drawn in the same style by the authors. Six balanced sets of 120 words were created, three in each language. Cognates were the same in English and French equivalent sets. The pictures were shown one by one on the screen and the participant had to name them as fast as possible while the experimenter recorded possible TOTs.

We predicted that participants would experience more TOTs in French by the end of the year, fewer TOTs in English, and name cognates more accurately than non-cognates.

Analysis and results

Analyses were run in R (R Core Team, 2022) with linear mixed-effect models and generalised linear mixed-effect. Accuracy data was analysed with a binomial linear mixed-effect model with a logit link with Accuracy as a dependent variable and Language, Cognate status, Session and their interaction as fixed effects. Random effects included an intercept by Participant and an intercept by Item.

Analyses on the TOT accuracy data showed a significant effect of Language ($\beta = -0.58$, $SE = 0.07$, $z = 7.69$, $p < .001$), as participants experienced more TOTs in English than in French (English: $M = 9.31\%$; French: $M = 5.67\%$). The effect of Cognate status (cognate or non-cognate) was also significant ($\beta =$

0.86, $SE = 0.12$, $z = 6.95$, $p < .001$) as TOTs were experienced more frequently when naming non-cognate pictures than cognate ones (cognates: $M = 5.31\%$; non-cognates: $M = 9.70\%$). Finally, there was also a significant effect of Session: performance in session 1 was significantly different from session 2 and session 3 ($\beta = -0.43$, $SE = 0.06$, $z = 7.31$, $p < .001$). The analysis showed that there was a significant interaction between Session and Cognate status ($\beta = 0.41$, $SE = 0.12$, $z = 3.49$, $p < .001$; see Figure 1). Pairwise comparisons showed that the cognate effect was present in each session (all $ps < .001$), but that the effect was twice as big in session 3 ($\beta = 1.269$) than in session 1 ($\beta = 0.594$) (see Figure 1).

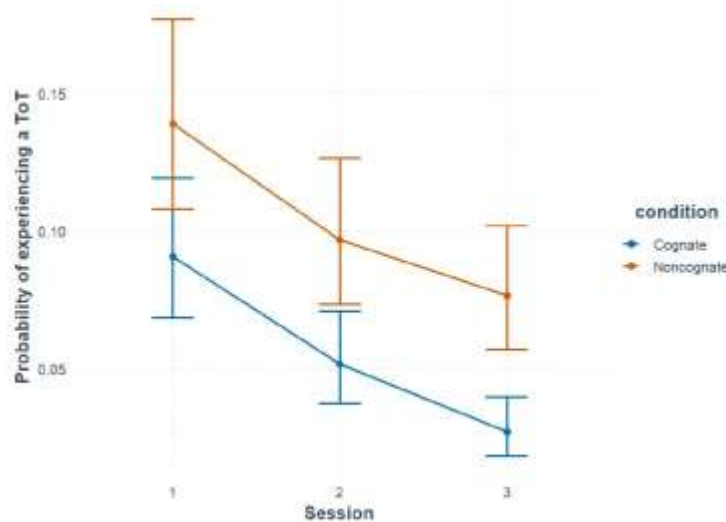


Figure 1. TOT rate as a function of Cognate status and Session (in both languages)

Discussion

This study investigated the L1 vocabulary loss of French-English bilinguals spending a year abroad.

Results of this exploratory experiment are in line with previous studies on two points: there was a facilitation effect linked to the cognate status of the stimuli and participants experienced more TOTs in their L2.

However, the results were inconclusive in relation to the starting hypothesis, given that the number of TOTs decreased over the course of the year more for cognates than for non-cognates, no matter the language. Several reasons can explain the results that contradict the starting hypothesis. For one, the pool of participants was not ideal in the sense that three of them only stayed for one semester abroad and that three participants were French Language teachers in

their host country. Additionally, two semesters have proven to be too short a time to have any conclusive results regarding loss of lexical access in L1, especially when the reality of study abroad programs is that students tend to speak more of their L1 than anticipated.

As for the difference between the first session and the two that followed, one explanation can be that the experimenter was not as precise in the way she registered the answers as she was getting used to the task and the process and tended to confuse real tip-of-the-tongues with a “feeling of knowing”. If the experiment was to be redone, it would also be important to have the option to record quickly resolved TOTs so as to have more accurate data.

The fact that the TOT rate diminished more for cognates than for non-cognates could point to habituation to the task. It could also suggest that there is increased non-selective activation (Marian & Spivey, 2003), due to more balanced bilingualism as the participants’ proficiency in French does not decrease while their proficiency in English increases. Additional research is needed to investigate this possibility.

References

- Bates, D., Maechler, M., Bolker, B., & Walker, S. 2015. Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67(1), 1-48. doi:10.18637/jss.v067.i01
- Gollan, T. H., Montoya, R. I., Cera, C., & Sandoval, T. C. 2008. More use almost always means a smaller frequency effect: Aging, bilingualism, and the weaker links hypothesis. *Journal of memory and language*, 58(3), 787-814.
- Köpke, B., & Schmid, M. S. 2011. L’attrition de la première langue en tant que phénomène psycholinguistique. *Language, Interaction and Acquisition*, 2(2), 197-220.
- Kroll, J. F., & Stewart, E. 1994. Category interference in translation and picture naming: Evidence for asymmetric connections between bilingual memory representations. *Journal of memory and language*, 33(2), 149-174.
- Lenth, R., V., 2020. emmeans: Estimated Marginal Means, aka Least-Squares Means. R package version 1.5.3. <https://CRAN.R-project.org/package=emmeans>
- Marian, V., & Spivey, M. (2003). Competing activation in bilingual language processing: Within-and between-language competition. *Bilingualism: language and cognition*, 6(2), 97-115.
- R Core Team 2022. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.
- Schmid, M. S., & Köpke, B. 2009. L1 attrition and the mental lexicon. *The bilingual mental lexicon: Interdisciplinary approaches*, 209-238.
- Szekely, A., Jacobsen, T., D’Amico, S., Devescovi, A., Andonova, E., Herron, D., ... & Bates, E. 2004. A new on-line resource for psycholinguistic studies. *Journal of memory and language*, 51(2), 247-250.