

PhD dissertation abstract

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Title: “The processing of *present perfect* in French-English and Polish-English bilinguals: Behavioural, eye-tracking, and electrophysiological evidence”

Translation: “Przetwarzanie czasu *present perfect* u francusko-angielskich i polsko-angielskich osób dwujęzycznych: Dowody behawioralne, okulograficzne i elektrofizjologiczne”

Abstract:

The present PhD dissertation addresses the processing of tense in native (L1) speakers of French and Polish, who have achieved high proficiency in English as a second language (L2). It specifically focuses on *present perfect*, whose concept does not exist in French and Polish. Although neither language makes a distinction between *present perfect* and *past simple*, the default past tense in French, *passé composé*, only formally corresponds to *present perfect*, whereas Polish lacks its equivalent altogether. Therefore, the first question I attempted to answer in my dissertation concerned the possibility for French-English bilinguals of developing a shared mental representation of these formally equivalent constructions, despite considerable usage-based differences. Furthermore, I aimed to determine whether French-English and Polish-English bilinguals could show native-like sensitivity to violations in the use of *present perfect*, taking into consideration L2 proficiency, which might modulate the effect of L1 influence.

In order to address these questions, I used three psycholinguistic and neurolinguistic methods. The first was cross-linguistic syntactic priming, whereby the exposure to a construction in one language influences the processing of an equivalent construction in the other language. Contrary to the posited hypothesis, French-English bilinguals did not show any priming effects between *passé composé* and *present perfect*. In an L1-L2 translation task, they selected *past simple* over *present perfect* to translate French sentences in *passé composé*. In a primed sentence creation task, participants were first exposed to a French prime sentence in either *passé composé* or *passé simple* (formally equivalent to *past simple*), after which they were prompted to create a different sentence in English on the basis of two keywords. Here again participants had a tendency to create sentences in *past simple*, independent of the prime. Of note, no priming effects were observed in a within-language task conducted with native speakers of English. Therefore, I turned to more sensitive methods, namely eye-tracking and event-related potentials (ERPs), which allowed me to capture subtle differences between L1 and L2 processing of tense.

I used eye-tracking study in a violation paradigm to pinpoint similarities and differences in the

processing of *present perfect* in French-English and Polish-English bilinguals, as compared to native speakers of English. Participants read for comprehension sentences in *present perfect*, which were either grammatical (starting with a time adverbial typically used with *present perfect*, e.g. *recently*), or not (starting with an adverbial creating a time violation with *present perfect*, e.g. *last year*). While both native speakers of English and Polish-English bilinguals slowed down while reading sentences including violations, French-English bilinguals had similar reading times independent of sentence grammaticality. This lack of sensitivity might be related to the fact that literal translations of all sentences into French would be grammatically correct. In turn, Polish-English bilinguals' native-like performance can be attributed to very high L2 proficiency and extensive metalinguistic knowledge. Yet, it remained unclear whether they were also sensitive to violations involving a construction absent in their L1 at the electrophysiological level. Hence, I used ERPs, characterised by a much higher temporal resolution than eye-tracking, to examine how the brain processes information in real time.

The ERP study focused on this question by recording brain activity of Polish-English and Welsh-English bilinguals as a control group, who make a *present perfect* vs. *past simple* distinction in both their languages. Participants were presented with the same types of tense violations as in the eye-tracking study, but this time they were asked to judge the acceptability of sentences. While Welsh-English bilinguals showed significant modulations in ERP amplitudes in the N400 time window related to the detection of semantic violations (in this case, disagreement between the time adverbial and tense), Polish-English bilinguals did not show any significant difference between correct and incorrect tense use. Hence, it can be argued that processing in an L2 is not fully native-like for constructions absent in the L1, even at very high levels of L2 proficiency.

Taken together, the studies conducted for the purpose of this PhD dissertation have provided evidence that L1-L2 similarity and L2 proficiency play an important role in the processing of tense in L2. Such results are in line with earlier psycho- and neurolinguistic studies, which have predominantly focused on the processing of other constructions in bilinguals, and they extend the findings to the domain of grammatical tense.