Dr Alice Foucart
Nebrija Research Centre on Cognition
Faculty of Languages and Education
Universidad Nebrija
Campus de Arturo Soria,
Calle Asura, 90
28043 Madrid, Spain

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Assessment of Anna Skałba's PhD dissertation

Decision: positive evaluation - the PhD candidate can proceed to the final stages towards earning a PhD title.

Mrs Anna Skałba presents a thesis entitled 'The processing of present perfect in French-English and Polish-English bilinguals: Behavioural, eye-tracking, and electrophysiological evidence' in the aim of obtaining the title of Doctor from Adam Mickiewicz University. The thesis starts with the Introduction and Chapter 1 that set the theoretical and methodological contexts of the thesis. Chapter 2 presents a series of experiments investigating priming in second language (L2). Chapter 3 and 4 report respectively an eye-tracking and event-related brain potential (ERP) studies examining the processing of present perfect during sentence comprehension in L2. The General Discussion interprets the results in line with previous studies and models of L2 production and comprehension, acknowledges the limitatons of the thesis and proposes future research.

Strengths of the dissertation

The dissertation is well-written and well-structured. The overarching question addressed in the thesis is effectively introduced in the Introduction, and the rationale for each study is clearly articulated. Furthermore, the connection between the studies is explicitly outlined, demonstrating the coherence of the thesis.

The topic is highly relevant to the literature on bilingualism, as the processing of tense has received limited attention to date. The thesis explores these questions using a combination of methodologies, paradigms, and analyses, offering new insights into the subject. Notably, the thesis addresses the question from both the production and comprehension perspectives of language, whereas research in this area often focuses on only one aspect. This approach requires familiarity with two distinct bodies of literature and a strong grasp of various L2 models. The candidate presents an extensive review of these in the Introduction.

The thesis also involves experimental complexity, employing behavioural, eye-tracking, and electrophysiological methods. The design, data collection, and analysis of eye-tracking and ERP data demand substantial time and expertise, which the candidate appears to have developed successfully during her training. Additionally, the statistical analyses applied in the thesis are diverse, reflecting Mrs Skałba's thorough experimental and statistical understanding, which enables her to design robust experiments addressing the research questions.

Moreover, the studies involve a range of populations with different linguistic backgrounds, tested across multiple countries. The complexity of participant recruitment and testing underscores the candidate's determination. She has not limited her research questions to conveniently available populations. Her motivation is also evident in the number of pilot experiments reported in Chapter 1. These unsuccessful pilot studies highlight her perseverance in refining her experimental design and her resilience in the face of null results—an essential trait for any researcher.

It is also worth emphasising that Mrs Skałba demonstrates an awareness of the importance of transparency in science, as she has made her raw data files publicly available through the Open Science Framework.

Finally, in both the individual studies and the General Discussion of the thesis, Mrs Skałba provides an excellent interpretation of her findings and thoughtfully contrasts them with those of previous studies.

In continuation, I outline a few comments that I would be interested in discussing with the candidate. These are minor points, and most of them require only a simple clarification or further elaboration on aspects already addressed in the thesis. Additionally, I offer some recommendations for future research.

Chapter 2: behavioural studies

In the priming studies, I was curious as to why L1 English was not used to test the methodology. This point is only briefly addressed in the Discussion of the final study (p.123). The candidate emphasizes that tense has not been examined in priming studies previously, and therefore no established design exists to address her research question. However, I wonder why the design was not first validated with native speakers to ensure its effectiveness before testing L2 speakers. This raises the question of whether the design itself is inherently unsuitable or whether the lack of observed effects is due to L2 speakers' sensitivity to tense. This question can be discussed during the defence.

In the sentence translation study, it is said 'It was essential that each sentence could be translated into English using either present perfect or past simple'. How was it checked?

Were any control checks used in the online experiment? How can one be sure the participants did not use the internet?

Cognates were included in the design to test the cognate boost effect but no results are reported. Please, include results or explain why it is not reported.

Chapter 3: Eye-tracking study

I was curious as to why the candidate chose to test population samples with varying levels of proficiency. I assume it was because of the access to these populations. The concern here is that it becomes challenging to disentangle whether an observed effect is due to cross-linguistic differences (the focus of the research) or proficiency levels. I will be happy to have the candidate's thought about that.

How were AOI selected? Was the selection based on previous studies? If it was the case, references should be included. Even though the non-inclusion of early measures is justified (p.137), it would be nice to report them in a table, even if they are not analysed.

Language processing is often delayed in L2; I was wondering if the spill over region had been analysed. It would be interesting to report fixations in later regions, if available.

p.150 'Although neither Polish nor French differentiates between recent and distant past on the pattern of the present perfect vs. past simple distinction in English, in French the default past tense is the formal equivalent of present perfect, whereas in Polish, it is past simple.' Across the experiment, could the past simple not have been used as a control condition for the Polish groups?

Chapter 4: ERP study

For clarity, it should be explained why epochs ranged from -200ms to 1000ms but artifacts were removed until 798ms.

In the results of the two time-windows, there is a significant effect of Group. This effect should be explained.

In Figure 25 and 27, which electrodes are displayed?

I understand that the time-windows and electrodes were selected based on previous studies, but more details are required. Two sets of electrodes appear to have been chosen for each time-window (i.e., C1, Cz, C2 and CP1, CPz, CP2 for the N400, and CP1, CPz, CP2 and P1, Pz, P2 for the P600), but it is unclear how they were analysed. Were they analysed by electrode set? This seems likely, given that no Region factor was included in the ANOVA. However, the results are not reported for each set of electrodes. More clarification is needed. Additionally, the effects in the N400 time-window appear larger in the electrodes selected for the P600 (Figure 27). Providing grand means for all electrodes would offer a clearer picture of the effects.

The behavioural responses for the Welsh-English group with respect to the present perfect indicate that they accepted approximately half of what was considered ungrammatical. Their answers for

the past simple were also not at ceiling. Was the manipulation of the experimental (grammaticality) factor evaluated in a pre-test with monolingual native speakers?

General discussion

P.176 'The absence of significant effects in the eye-tracking study with French-English bilinguals suggests that semantic differences in usage patterns between passé composé and present perfect make the detection of violations in the L2 challenging, if not impossible.' Many factors, such as proficiency, could have modulated the results. Participants with higher proficiency or more exposure may be sensible to tense. This statement should be toned down.

p. 177 'The attribution of our results to functional differences in tense application between French and English is also in line with previous bilingual ERP studies, which showed native-like processing of constructions characterised by L1-L2 similarities, in contrast to cross-linguistically different constructions. For example, Spanish-French bilinguals tested on gender agreement in Carrasco-Ortíz et al.' s (2017) study showed N400 modulations only for items with cross-linguistically convergent grammatical gender, whereas no significant effects were observed for nouns differing in gender between Spanish and French.' Foucart & Frenck-Mestre (2011) observed native like effects (P600) for German for cross-linguistically non-convergent grammatical gender with high-proficient but not intermediate L2 speakers. It may be worth mentioning these results and highlight the role of proficiency in native-like processing.

P.177 'For example, Hahne and Friederici (2001) did not observe any significant effects in Japanese-English bilinguals tested on phrase structure violations involving prepositions. This lack of sensitivity to violations was likely related to the absence of prepositions in Japanese, since Russian-English bilinguals tested on the same stimuli showed P600 modulations (Hahne 2001). Similarly, E. Rossi et al. (2014) ascribed the occurrence of a P600 effect in response to number, but not gender, agreement violations in English-Spanish bilinguals to the existence of number agreement, but not gender agreement, in L1 English.' In this paragraph, the studies that are mentioned in the Introduction and that did show sensibility to new features in L2 (i.e., gender) should be discussed too (e.g., Foucart & Frenck-Mestre, 2012; Gillon-Dowens, 2011; Keating, 2009.)

P. 179 'The explanation that Polish-English bilinguals showed native-like performance due to high L2 proficiency finds its confirmation, among others, in Bernolet et al.' s (2013) study with Dutch-English bilinguals, which revealed significant priming effects only in more proficient participants.' This study mainly focuses on language production. Maybe citing Foucart and Frenck-Mestre's (2011) study which investigated language comphrension with German speakers and a structure with cross-linguistic (di-)similarities would be relevant here.

Minor comments and recommandations for future research

For each study, participants' details should be provided (e.g., age with mean and SD) and the location of the testing should be specified.

LexTALE (only half of the participants completed it). In the future, I recommend asking the participants to complete the test either before they come to the lab or during the experimental session. Equivalence of the results in term of level (e.g., B2) should be mentioned.

In academic reports, statements like ‘the large majority of participants’, ‘the rest’ should be avoided. Numbers should be provided for more precision.

What were the proficiency self-assessment measures? They should be described (only once if they were the same across all experiments) and results should be reported for each study.

Provide SDs when means are reported. For instance, Cambridge scores in Table 6.

In line with the APA guidelines, refrain from using ‘marginally significant’. Especially because sometimes .09 is considered to be marginally significant and sometimes to be non-significant.

In the reference list details are missing (i.e., volume, issue, pages) for Li, et al. 2023.

p.141 ‘While both Polish-English bilinguals and native speakers of English spent more time reading the AOI in the grammatical than in the ungrammatical condition,…’ I believe the conditions should be the other way around.

p.151 ‘Although the present eye-tracking contributed to the existing literature on L2 syntactic processing’ The word ‘study’ seems to be missing.

In conclusion, I believe Anna Skałba’s thesis makes a nice contribution to the field, and the candidate has acquired the skills required to carry on a scientific career as an independent researcher. I express a favourable opinion on the defence of this work.

Sincerely,

Alice Foucart