Editorial: Learning a non-native language in a naturalistic environment: insights from behavioral and neuroimaging research

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Research on bilingualism has boomed in the past two decades. The processes by which a second language is acquired and processed has been investigated via linguistic, psycholinguistic, and neurolinguistic perspectives, focusing not only on second language (L2) acquisition and processing, but also the effects it might have on cognition and brain structure and function (Bialystok et al., 2012). More recent studies have focused on the effects of experience-based factors on L2 acquisition and processing (Dussias and Piñar, 2009); for example, several studies have increasingly focused on how L2 processing is affected by the active and continuous use of L2, or immersion, whether it becomes native-like, and which language domains are particularly affected (Dussias and Sagarrà, 2007; Pliatsikas and Marinis, 2013). The present E-Book is a collection of recent studies that demonstrate the effects of immersive L2 learning in lexical, phonological and morphosyntactic processing, while at the same time discusses the potential effects of immersive non-native acquisition on the structure of the bilingual brain.

Several studies in this E-Book have focused on morpho-syntactic processing by immersed late L2 learners. In an ERP study, Carrasco-Ortiz and Frenck-Mestre (2014) showed that highly proficient L2 learners of French with limited immersion (5–6 months) were native-like in their sensitivity of detecting verbal inflectional errors. This sensitivity was enhanced in the presence of phonological cues to the errors, but was also dependent on the L2 learner's overall proficiency. Further evidence in the domain of morpho-syntax was provided in an ERP experiment by Meulman et al. (2014), who demonstrated that immersed (5 years) late Romance learners of Dutch were native-like in detecting auditorily-presented verb agreement violations in non-finite verbs, but not gender violations. This demonstrated that there might be limits to how native-like L2 processing can be, but these limits are specific to the grammatical construction under investigation.

In two behavioral masked lexical priming experiments and in an ERP study with advanced Spanish and German late L2 learners of English, De Cat et al. (2015) showed that lexically transparent noun-noun compounds (NNCs) such as moon dust are processed combinatorially by advanced non-native speakers similarly to native speakers; however, sensitivity to word order violations within the NNCs was modulated by the learners’ L1.

In an acceptability judgment task, Parafita Couto et al. (2015) examined the interaction between word order and focus in the context of unaccusative (e.g., arrive) and unergative (e.g., walk) verbs in Spanish in a group of English late L2 learners of Spanish with extensive naturalistic exposure to L2 input. Immersed late L2 learners accepted different word order patterns depending on the focus context; however, they failed to distinguish between unaccusative and unergative verbs, and the ability to do so was a function of the verb’s frequency rather than its categorical classification on
demonstrated that immersed balanced
discusses the issues in combining linguistic,
). The effects of
Vulchanova et al. (2015)
examined short- and long-term
immersion can lead to native-like orthographic processing;
however, these effects were modulated by the participants’ L2
proficiency.

Zinszer et al. (2014) tested Chinese-English bilinguals in
China and in the US on a lexical categorization task and
examined which L2 learner’s language history variables (length
of immersion, L2 training, age of L2 onset, and code-switching
patterns) and language variables (e.g., native speaker agreement
on picture naming) predict performance on this task. The
authors reported that words with high name agreement and
few alternate names elicited high performance; at the same
time, immersion, age of L2 onset and code-switching patterns
contributed positively to learners’ performance, whereas years of
L2 training had a negative impact on task performance.
The effects of exposure to naturalistic L2 input on vocabulary
learning were examined in two studies by Dahl and Vulchanova
(2014) and by Vulchanova et al. (2015). Dahl and Vulchanova
examined whether providing naturalistic L2 exposure within
a standard school curriculum influences comprehension of
vocabulary in two groups of 6-year-old Norwegian-speaking
children. After 8 months of exposure, the group that received
naturalistic input to English outside the classroom setting but
within the school context outperformed on vocabulary learning
the group that was only exposed to English within the classroom
setting. This suggests that increased exposure to the L2 can lead
to a significant increase in receptive vocabulary at this young age
even after a short period.

Vulchanova et al. (2015) examined short- and long-term
memory effects of first language (L1) and L2 subtitles on
text comprehension and vocabulary learning in two groups of
adolescent Norwegian learners of English. Short-term effects of
L1 and L2 subtitles on text comprehension were found in both
groups. These effects were modulated by vocabulary knowledge
in the younger group of L2 learners and by knowledge of
grammar in the older L2 group. There were no long-term effects
in either group on vocabulary learning as measured through

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