Bilingualism: Language and Cognition

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Words in the non-native mind: Developing lexical representations in the L2

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Editorial

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A large body of bilingualism research has dealt with the lexicon. Topics such as vocabulary acquisition and the representation of words in the bilingual lexicon have been highly popular in bilingualism journals. There are also prominent models of the bilingual mental lexicon (e.g. De Groot, 1992; Dijkstra et al., 2019; Kroll & Stewart, 1994) that can account for many empirical findings from vocabulary studies with bilingual speakers and listeners. However, what has been missing in previous research is a framework for understanding the properties of lexical units in a non-native second language (L2) and how these properties develop. Bordag, Gor and Opitz (2022a) outline such a framework in their Keynote article. In their model, lexical units consist of orthographic, phonological, and semantic representations which are interconnected. The authors' Ontogenesis Model (OM) seeks to describe how a word's orthographic, phonological, and semantic representations and their interconnections develop in the L2 mental lexicon. The authors argue that many L2 lexical representations are 'fuzzy' and that, while learners seek to attain optima over time, L2 lexical acquisition does not often reach the ultimate stage of attainment with optimal encoding. The consolidation of L2 lexical representations over time is argued to differ for the three dimensions of lexical units. Whilst new phonological representations and connections have to be created for L2 lexical units, the acquisition of L2 semantic representations may benefit from pre-existing representations from the learners' L1. Consequently, phonological form representations may remain fuzzy in the L2, particularly when the L2 is not closely related to the L1, whereas semantic representations are more robust and may even end up achieving the optimum.

Seventeen commentaries from well-known experts in mental lexicon and bilingualism research accompany the Keynote article. Several commentators (Darcy, 2022; Ellis, 2022; Escudero & Hayes-Harb, 2022; Gyllstad, 2022; Kroll, Vargas Fuentes & Torres, 2022; Lemhöfer, 2022) praise the Keynote article for bringing together different strands of research on the L2 lexicon that have rarely been considered together before – namely, (i) psycholinguistic studies on L2 word processing and (ii) acquisition studies of L2 word learning. In addition, Baxter, Leoné and Dijkstra (2022) highlight the potential usefulness of the model proposed by Bordag et al. as a valuable theoretical underpinning for vocabulary teaching and educational research more generally – a topic the Keynote article briefly mentions. Some non-trivial criticism of the proposed model has also been raised and a number of limitations noted. A number of commentators pointed out that the notion of 'fuzzy' lexical representations and other critical concepts are only vaguely defined, and that the proposed model remains purely verbal rather than being properly implemented in an explicit computational model (Jamieson, Johns, Taler & Jones, 2022; Lemhöfer, 2022; Meara, 2022; Nicol, 2022; Ellis, 2022; Li & Zhao, 2022). Other commentators point out that the OM's focus on *L2* lexical representations does not do justice to the role of cross-linguistic influence and potential links between the L1 and the L2 lexicon (Ecke & Hall, 2022; Kroll et al., 2022; van Hell, 2022; Wolter, 2022). Furthermore, commentators raise additional dimensions of the current topic that (in their view) were not covered in sufficient detail by the Keynote article. Mishra (2022), for example, notes that the OM lacks a neuro-cognitive component and does not address the question of which brain structures are involved in L2 lexical processing. Calabria (2022) notes that the OM does not specify a control system for accessing lexical representations. Gass (2022) observes that the empirical studies considered by the Keynote authors are largely based on samples of educated – and specifically, literate – individuals and that research on L2 lexical representations needs to be extended to include data from non-literate speakers.

In their response, Bordag, Gor and Opitz (2022b) address the concerns raised by their commentators and clarify a number of controversial points. In particular, Bordag et al. use their authors' response to compare their OM to other models of the bilingual mental lexicon. They also further explain the notion of 'fuzzy' lexical representations and question implemented computational models as the gold standard of theory in this domain (contrary to some commentators' views). What perhaps Bordag, Gor and Opitz as well as most commentators can agree upon is that the current Keynote article presents a unique synthesis of different research on the bilingual lexicon, and a framework for future research on the development and processing of lexical representations in non-native speakers.

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We hope our readers will enjoy the Keynote article together with the commentaries and the authors' response, as well as the interesting regular research articles presented in the current issue.

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