Ontogenenis model of L2 lexical representation: Cross-language links to account for bilingual lexical processing

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In their keynote article, Bordag, Gor, and Opitz (in press) present the Ontogenenis Model of the L2 Lexical Representation. The Ontogenenis Model is a theoretical model that describes the representational architecture of the L2 mental lexicon, and focuses on the development of L2 phonological, orthographic, and semantic representations, and the corresponding mappings and networks of these representations. A particular strength of the Ontogenenis Model is its detailed description of the development and properties of L2 phonological, orthographic, and semantic representations and mappings, as well as the notion of fuzziness and changes in fuzziness as L2 learners seek to attain optima in the ontogenesis of L2 phonological, orthographic, and semantic representations. As rightfully noted by the authors, existing models such as BIA+ (Dijkstra & Van Heuven, 2012), Multilink (Dijkstra et al., 2019), the Revised Hierarchical Model (Kroll & Stewart, 1994), and the Distributed Feature Model (De Groot, 1992; Van Hell & De Groot, 1998) focus on the relationship and interactions between the L1 and L2 lexicons. As the two crucial properties of their Ontogenenis Model, Bordag and colleagues state that their model primarily addresses "properties and aspects of the L2 lexical units" and "developmental aspects of L2 representations." This focus is a distinctive strength of the Ontogenenis Model: The in-depth and comprehensive description of the developmental dynamics of L2 phonological, orthographic, and semantic representations uniquely positions the Ontogenenis Model in the current literature of models describing the bilingual mental lexicon. But principally focusing on the representational architecture of only the L2 lexicon is also a potential weakness if the model seeks to explain bilingual lexical processing.

The Ontogenenis Model primarily focuses on the initial stages in the acquisition of L2 phonological, orthographic, and semantic representations, in particular in L2 learners who have already established the triangular architecture of phonological, orthographic, and semantic codes

in their native language. Research studies testing such late L2 learners, using a wide range of lexical processing tasks, have found ubiquitous evidence that supports language nonselective activation and cross-language interaction: lexical activation of a word in one language leads to the co-activation of related words in the bilinguals' two languages, even when the social and linguistic context calls for only one language (for reviews, see Kroll, Bobb, & Wodniecka, 2006; Van Hell & Tanner, 2012). The bilingual mental lexicon is fundamentally permeable across language boundaries, not only for bilinguals who use two languages of the same script, but also for bilinguals who use languages with different scripts or languages from different modalities, as in sign-speech bilinguals. This implies that in order to understand and predict patterns of bilingual lexical processing, theoretical models of the bilingual mental lexicon must describe the triangular architecture in L2, but also the corresponding mappings with the L1 lexicon and the activation mechanisms that describe the activation of phonological, orthographic, and semantic codes across languages. Such activation mechanisms explain how bilinguals navigate cross-language activation and inhibition to optimize lexical processing and reduce unintended interference from the nontarget language.

Does the Ontogenenis model of L2 lexical representation operate independently from the native language? No. A compelling part of the Ontogenenis Model is the detailed description of how the acquisition of, in particular, the L2 semantic and phonological representational architecture builds on L1 representations and how characteristics of the L2 learners' native language shape the developmental dynamics of L2 representations. But if the Ontogenenis Model strives to also account for bilingual online lexical processing and the rich empirical basis for cross-language interactions during lexical processing, the L2 representational architecture needs to be integrated into a larger model of the bilingual mental lexicon that includes L1

phonological, orthographic, and semantic representations and links connecting L2 and L1 representations. May I add this to the authors' future agenda?

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