

COMMENTARY

The bilingual mental lexicon beyond Dutch–English written words*

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(Received: May 23, 2018; final revision revised: May 25, 2018; accepted: May 29, 2018)

The contribution that Ton Dijkstra has made to the field of bilingualism, with his colleagues over the years, is beyond measure. He has advanced our field with the thoughtful and thought-provoking models of the bilingual lexicon he has put forward, and with the vast empirical data he and his colleagues have collected from numerous bilinguals, using a variety of experimental methods. This paper by Dijkstra, Wahl, Buytenhuijs, van Halem, Aljibouri, de Korte, and Rekké (2018) is no exception. It comprises a thoughtful and detailed description of a new model, Multilink, and provides relevant information regarding the context in which the model was developed, its assumptions, its successes and challenges. The model is the first to consider aspects of both word production and word recognition, as well as of word translation, and to explicitly address how translation equivalents that share both form and meaning – cognates – may be processed. Also addressed are word-frequency concerns, including differences in word frequency that are dependent on language proficiency and exposure. The assumptions that are made within the model are clearly laid out, and less-than-ideal decisions that needed to be made are acknowledged. The authors conclude that a model like Multilink could be the basis for a general model of the mental lexicon. In that, they promote the view taken in Libben, Goral, and Libben (2017) that the bilingual – not the monolingual – lexicon should be considered as the default.

Multilink moves our field forward and its authors should be commended. However, it also perpetuates a limitation of many studies of the mental lexicon: modeling the bilingual lexicon on the basis of written word processing. Dijkstra et al. (2018) state that extensive empirical research has led to the assumption that when bilinguals are presented *visually* with a word, they experience activation of words from both (all) their languages (p. 4). Whereas this assumed co-activation has been supported by a large number of studies, it may be the case that it is relevant for bilinguals who are literate in two

languages and may be especially the case for bilinguals whose languages share the same orthography. But not all bilinguals are literate in both their languages, and many biliterate bilinguals read languages that do not share the same orthography. By building the model on the basis of Dutch–English written word pairs, the authors may be limiting the generalizability of Multilink.

Spoken word processing can be quite different from written word processing; words that share most of their written form can sound quite different; translation equivalents that are considered cognates in their written form may not be perceived as cognates in their spoken form; morphological processing can differ for spoken and written forms; and contextual cues and phonotactic cues can strengthen the activation of one of the bilingual's languages. It may not come as a surprise then that models that have been developed to account for bilingual spoken language perception, unlike Multilink and other models of written word processing, started with the assumption that the two languages may be organized as inter-connected but separate systems (e.g., Grosjean, 1998). In auditory word presentation, the language to which the word belongs may be immediately obvious to the bilingual listener, which may restrict the activation of the other language. If we venture beyond written word recognition to spoken word processing, we might question the second assumption of Multilink. As Dijkstra and colleagues state, the evidence in the literature for language non-selective activation is robust. But it is robust especially for written word processing and in tasks that may encourage bilingual activation (e.g., translation recognition, mixed language picture naming). Despite intriguing evidence for non-selective activation of languages of different orthographies (e.g., Thierry and Wu, 2007), evidence for spoken language processing, for words in context, and during spoken language communication situations, is rather scarce. There are data that suggest co-activation beyond decontextualized, single (written) word experiments (Libben, 2017), but additional research is warranted to substantiate the idea that all bilinguals maintain a constant bilingual mode.

* The author thanks Gary Libben and Maya Libben for their comments on an earlier draft of this paper.

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The question of the scope of language non-selectivity is relevant to a key concept addressed in the modeling of the bilingual lexicon: namely, the concept of integration. Dijkstra et al. (2018) acknowledge the complexity of the concept. If, as in Multilink, all entries in the lexicon are tagged for language, if competitors need to be inhibited differently based on the language the words belong to, if lexical selection is task-based, which in some cases means language-based – maybe we end up keeping some fundamental aspects of “separate” lexicons. It is possible that we do not yet have experimental tools or theoretical terminology to distinguish clearly between an “integrated one” and “interconnected two” lexical systems. For example, as the fifth assumption laid out in the paper reminds us, many translation equivalents do not share the complete set of semantic features across languages. A proficient bilingual user knows the context within which a word in one language is appropriate and its (partial) translation equivalent is not. This is consistent with a model that assumes language-specific semantics. Moreover, some translation equivalents differ in their morphological structure (e.g., single word versus a compound word), which may necessitate language-specific morphological representation. Future discussions

will no doubt wrestle, as Multilink does, with the meaning and implications of an integrated bilingual lexicon.

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