it will serve as an excellent point of departure for the study of language endangerment in other regions of the world.

REFERENCES


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The last two decades have seen a dramatic surge in research on bilingualism and multilingualism, with exciting new frontiers in the study of language being explored particularly in the cognitive and neural sciences. Current research is dedicated to studying the bilingual experience and shows a language system that is highly dynamic, where each language interacts with and influences the other. Within this context, Lexical processing and second language acquisition contributes persuasive evidence from psycholinguistics and second language (L2) acquisition research for how bilinguals of varying language backgrounds and proficiencies navigate the use of two languages. Tokowicz’s expertly written volume builds on the canon of books dedicated to bilingualism by specifically addressing the word level, identifying unifying themes across subdisciplines, and showcasing the latest developments in a rapidly growing field.

The value of focusing on the representation and processing of words lies in part, as T reminds us, in the finding that ‘word knowledge is foundational to learning the rest of language’ (2). Indeed, lexical skills are tightly linked to successful language comprehension and production in both first language (L1; e.g. Nation 2014) and L2 acquisition (e.g. Prior et al. 2014). By skillfully demonstrating the interplay of variables that influence lexical access, T provides us with a framework for thinking about the dynamics of language at grammatical, syntactic, and pragmatic levels. To build her case, T emphasizes laboratory approaches to investigating the lexicon. This emphasis is well suited to inform our understanding of L2 learning because quantitative studies provide experimental control as well as sensitivity to the timing of events in linguistic processing.

In the first chapter, T situates the book both theoretically and methodologically, providing a roadmap to the reader on the fundamental questions the book addresses. T then moves themati-
cally from the models that explain how words are processed and represented in the mind (Chs. 2, 3, and 4) to discussions of learner characteristics and word characteristics that may influence processing (Chs. 5 and 6, respectively). Ch. 7 provides an overview of the growing area of neuroscience. Of particular interest throughout the volume is the discussion of new research directions. Within each chapter, T highlights relevant future work that will help examine the mechanisms underlying word activation, and she devotes the final chapter (Ch. 8) to a more comprehensive review of research areas that are needed to address outstanding questions in the field.

One of the central questions T tackles is how bilinguals and L2 learners manage the use of more than one language. Numerous studies, including findings from our own lab (e.g. Marian & Spivey 2003a,b, Shook & Marian 2012), have now shown that bilinguals coactivate both languages even in situations where only one of their languages is relevant. In Ch. 2, T focuses on two general models of bilingual language processing and control as a way to illustrate the relevance of both extrinsic and intrinsic factors in influencing the degree to which a bilingual shows language coactivation. Grosjean’s language mode hypothesis (2001) emphasizes the influence of discourse factors on the relative activation of each language. Green’s inhibitory control model (1998) addresses the possibility that in order to ultimately select one of the coactivated languages for further processing, the bilingual regulates activation of the unintended language via an internal control system. The strength of T’s literature review is that she systematically builds up to concrete research questions that are needed to further test predictions about the processing of each language in the system. T also considers multiple angles, from single case studies of individuals with brain pathology to well-controlled larger-scale studies, in order to provide converging support for ideas such as language control. Each perspective adds valuable pieces to the puzzle. Together with brief introductions to other general frameworks of the bilingual language system, T paints a vibrant picture of dynamic interaction between external and internal factors that influence the activation of words in both languages.

In Ch. 3, T takes a closer look at what it means to have both languages active and, more specifically, its implications for models of word recognition and production. In detailing relevant models, T is unbiased, choosing to describe the most influential models from several viewpoints. For instance, in discussing language production, she considers models that assume words in both languages compete for selection (so called ‘language nonselective’ accounts), as well as alternatives in which the speaker only considers words in the intended language (‘language selective’ accounts). She also pays particular attention to evaluating the success of models in simulating important findings of bilingual speech comprehension and production. Her approach allows the reader to easily grasp a model’s strengths and contributions. To illustrate, the computational Bilingual Language Interaction Network for Comprehension of Speech (BLINCS; Shook & Marian 2013) can account for cross-language findings such as the coactivation not just of words that sound alike, but also of words that are similar in meaning: for example, the English word road activated phonologically related ropa ‘clothes’ in Spanish, as well as the semantically related car in English. These results argue for strong cross-language interactions within the bilingual lexicon. The evidence T reviews demonstrates a fundamental permeability of both languages down to the very representation of words.

In addition to characterizing the organization of words in the mental lexicon of fluent bilingual speakers, T also reviews the developing L2 lexicon. In Ch. 4, T focuses on models of bilingual word representation, with specific references to how increasing L2 proficiency may change how words and meanings are connected in the mental lexicon. Particularly helpful in this respect is T’s ability to subcategorize models both historically and functionally. For instance, the reader is taken through the step-by-step historical development of the revised hierarchical model (RHM; Kroll & Stewart 1994). In explaining how the L2 accesses meaning, earlier models of word production posited that L2 words accessed meaning through L1 words (word association model) or via direct links to concepts (concept mediation model). The RHM introduced the idea of a developmental shift from one type of connection to the other in response to increasing L2 proficiency. T then functionally distinguishes models that focus on discrete representations of meaning, such as the RHM, from those that view the representation of meaning to be more distributed. The sense model (Finkbeiner et al. 2004), for example, works from the assumption that words can have
more than one sense of meaning (e.g. ‘head’ as a body part or group leader), and bilinguals typically have a richer inventory of senses for the L1 than the L2. By juxtaposing these models, T clearly communicates to the reader the pros and cons of each in order to build toward an integrated view of word processing that accounts for different research findings: while discrete models such as the RHM address general relationships between representations of words and meanings, distributed models more successfully differentiate between types of words.

One of the questions of strongest personal interest to the reader may well be what makes a successful L2 learner. In Ch. 5, T reviews the current literature on how learner characteristics contribute to effective learning and further explores how L2 representations in the mental lexicon change as a function of learner differences. In particular, T examines the impact of three learner characteristics on the representation of L2 words: the context of learning, proficiency, and individual differences in cognitive processing. Here is another instance where T uses a historical perspective to underscore the significance of current findings. T contrasts Weinreich’s (1953) ideas of language context with recent results in computational modeling, providing important nuances to the debate on how the L2 is represented in the mind. With respect to learner outcomes, T’s evaluation is consistent with findings from our own lab that vocabulary learning depends on the interaction of multiple factors, including the learner’s own experience and ability, and the characteristics of the L2 itself. To fully account for the attributes that characterize a successful L2 learner, more work is clearly needed; individual differences in cognitive resources (e.g. working memory) may indeed impact the degree of success that an L2 learner experiences during L2 acquisition, but the findings are correlational at this point and cannot speak to causality.

Whereas Ch. 5 spotlights learner characteristics, Ch. 6 is devoted to word characteristics and their similarities across languages. T considers cognate translations, word concreteness, and translation ambiguity in turn as windows into how words and their meanings are represented in bilingual memory. Both cognates and concrete words are translated more accurately and more quickly than noncognates and abstract words, suggesting that they have a special status in the bilingual inventory of words. To explain this relationship, T offers substantial evidence, based in part on her own research, for the role of meaning overlap and shared features at the conceptual level. The connections between these words are admittedly complex and would be difficult for the lay reader to understand. Here, as elsewhere in the volume, T embeds concrete examples and clear descriptions to aid the reader in grasping terminology and key concepts.

In Ch. 7, T gives a brief overview of converging evidence provided by neuroimaging. Neuroscientific approaches to bilingualism have proven particularly fruitful because of their increased sensitivity to often subtle effects of proficiency; at the same time, they are able to answer questions about the time-course of language processing. T purposefully revisits earlier topics through the lens of neuroscience, and in doing so skillfully brings the reader back to the broader picture. In several of the studies she reviews, the neurocognitive approach has revealed additional or more nuanced stories. T persuasively argues that because these methods are particularly sensitive to how word processing unfolds over time, they provide a valuable tool in delineating the scope of activation in the language network. The findings of Ch. 7 segue to a discussion of open research topics in Ch. 8, which in part suggest that neurocognitive tools may provide the key to adjudicating outstanding questions in the field.

A strength of the volume in general is the way T showcases the scientific rigor of the field. T’s treatment of the research confirms that second language acquisition is a firmly established area of inquiry in its own right. Furthermore, the reader comes away with a well-stocked toolkit of the latest methodological and statistical approaches that are used to investigate questions about lexical processing in L2 acquisition. In our opinion, the most enduring contribution of the volume, however, may be in what happens to our perspective of the forest as we examine the trees. Beyond providing thorough coverage of L2 acquisition in particular, T leaves the reader with a deeper appreciation for the cognitive system as a whole and the strength of viewing the bilingual from multiple scientific perspectives.

To summarize, T provides a comprehensive overview of the field and makes a strong contribution to bilingual literature by addressing central questions about bilingual processing at the level of words. T dedicates the volume to Rosa M. Sánchez-Casas and Patrizia Tabossi, two leading
scholars at the forefront of research on language learning and on language and cognition who innovated some of the methods now widely used in the field. For those of us who seek to advance this field of research, T’s book provides a contextualized discussion of the exciting recent discoveries in L2 learning and bilingualism.

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Few books these days go to the core of the linguistic enterprise, questioning what we do, how we do it, and why we do what we do. Wierzbicka’s Imprisoned in English is one such book—it

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