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Introduction

As we approach the third decade of the 21st century it is clear that the world's citizens increasingly function in more than one language on an everyday basis, with consequences that go well beyond the realm of language. It is the purpose of this volume to present the latest research on bilingualism from this broader perspective, exploring the complex interaction between the acquisition, processing, and use of multiple languages throughout the lifespan and in different sociopolitical contexts and the effects of bilingualism on some nonlinguistic domains such as family functioning, literacy, cognition, and identity, to name a few. Primarily addressed to linguistics, psychology, and education students as well as to bilingualism scholars, the volume's first goal is to underscore the variability of "the bilingual experience"—both in terms of language experiences and of language outcomes. At a superficial level, a *bilingual speaker* is defined as an individual who knows two languages, but the chapters in this book point to the inadequacy of this simple definition to capture the heterogeneity of bilingual speakers. Genesee (Chapter 1, this volume), in particular, expands on the myriad of ways bilingual speakers can differ from each other, from the pairs of languages spoken to the functions each language serves in bilingual speakers' lives. The main implication is that because of their multidimensional nature, bilingual speakers must be studied in their own right, without reference to monolingual speakers as norms.

Another crucial theme of the research presented in this volume is that language knowledge and use—be it mono- or multilingual—are deeply intertwined with socio-cultural and sociopolitical issues, like identity, status, power, and ability to participate in the community. Hence, bilingualism can be understood only when examined in the context in which it unfolds. Code-switching, for example, is often seen as a sign of confusion or language incompetence in the United States (MacSwan, Chapter 10) but as an asset and evidence of language mastery in Singapore (Yow, Patrycia, & Flynn, Chapter 5). Similarly, the ability to speak Spanish and be bilingual in the United States is not valued in the same way as in countries that are supportive of bilingualism (Montrul, Chapter 8). Few studies have directly compared how different sociocultural settings affect bilingualism, so we will return to this issue in the volume's Conclusion.

The third goal of this volume is to challenge scholars of linguistics and psychology to think about the generalizability of acquisition theories. A few decades ago, bilingualism was sometimes presented in language acquisition textbooks in the chapter on special populations. In one textbook used by one of the editors in graduate school, a discussion of bilingual first language acquisition was juxtaposed with learning to speak with cochlear implants. In recent years, researchers have begun

to recognize that far from being a special population, bilingual and multilingual speakers make up a large proportion of the world's population. To the extent that linguistic and psychological theories of language acquisition claim to be universal, they must account for the variability observed in bilingual speakers, in addition to monolingual acquisition. Consider, for example, usage-based theories of language acquisition that have had some success in recent years in explaining monolingual children's language acquisition. Can these theories account for why bilingual children can sometimes attain similar outcomes to monolingual children of the same age, even though they use each of their languages less often than their monolingual peers (see Unsworth, Chapter 6, and Gathercole, Chapter 7)? How can the bilingual learning experience in all its variants be incorporated in such "universal" theories of language acquisition?

It is with these three themes in mind—the heterogeneity of bilingual speakers, the importance of the social context to understand bilingualism, and the need to include bilingual development in general language acquisition theories—that this volume presents research on bilingualism across different stages of life, from infancy to old age. By framing the research within a lifespan perspective, we hope to show readers that age is yet another variable that affects bilingual outcomes. The volume focuses on four major areas of investigation in which many advances have been made in recent years: (a) early bilingualism, (b) factors affecting bilingualism across the lifespan, (c) academic achievement and literacy in bilinguals, and (d) cognitive effects of bilingualism. The contributions in these areas are not exhaustive of all bilingualism research but they are meant to provide the reader with a view of bilingualism that goes beyond traditional linguistic or psycholinguistic accounts and show the consequences of bilingualism on—and its interrelationship with—nonlinguistic domains such as literacy, cognition, and family functioning, to name a few.

It is precisely in this framework that Quay and Montanari set their chapter (Chapter 2) in this book's first section on early bilingualism. One important issue underlying research in this area and in all the chapters in this section is how children with early exposure to two languages learn to differentiate them. Bilingual children sometimes *code-switch*, or use both of their languages within an utterance or conversation. Does code-switching show that they cannot tell their languages apart? Quay and Montanari argue that the very phrasing of this issue implies that bilingual speakers are being compared to a monolingual norm. They propose to examine early bilingual development with a focus on what impacts it most—the social context, the language environment, and, in particular, the home and family language practices that allow children to become productive bilingual speakers.

Fennell, Tsui, and Hudon (Chapter 3) then review studies on the processes by which bilingually exposed children learn to differentiate the rhythms, phonological patterns, and word forms of their two languages, how they come to perceive speech sounds, and how they categorize them as phonemic in each language. The chapter shows that, despite being exposed to more complex and variable input than their

monolingual peers, bilingual infants meet most speech perception milestones—such as language discrimination, phonetic refinement of vowels and consonants, the acquisition of phonotactic rules, and the perception and use of phonological categories—following the same timeline as monolingual children. The authors argue that the perceptual gateway to bilinguals' language separation might lie in their early ability to detect rhythmic differences between languages but also in their keen attention to talking faces and their sensitivity to the social cues that characterize speakers of each language.

Not only must bilingual children differentiate the rhythms, sounds, and phonological patterns of their two languages, but they also eventually must be able to develop vocabularies for each. Conboy and Montanari (Chapter 4) focus specifically on lexical processing and production in bilingual infants and toddlers. The review shows that bilingual infants develop two lexical systems by using the same segmentation, recognition, comprehension, and processing mechanisms that monolingual infants use to build one system. However, young bilingual children might also develop unique abilities as they learn to manage two lexical systems, suggesting that differences from monolingual patterns may reflect appropriate responses to input factors and properties rather than to a delay or deviance induced by bilingualism.

If bilingual children can differentiate their two languages, why then might they code-switch (i.e., alternate between two or more languages in the context of a single utterance or conversation)? Yow and colleagues (Chapter 5) consider data from Mandarin–English bilingual 5- and 6-year-old students in Singapore. The analyses reveal that the amount of code-switching by children is related to bilingual proficiency and that contexts that favor code-switching produce children with increased command of two languages. These results suggest that in a reality supportive of bilingualism, alternating languages in discourse is indicative of linguistic and sociolinguistic competence rather than lack of proficiency or language attrition.

Part II delves more deeply into the factors that affect bilinguals' knowledge and use of their two languages. Unsworth (Chapter 6) reviews the latest research that examines the role of input quantity and quality on bilingual children's developing language skills. This review shows that more input generally leads to quicker rates of acquisition, especially in the areas of vocabulary and verbal morphology. However, input effects may be moderated by a variety of factors, including the variety and proficiency level of the input providers, the existence of older, school-age siblings, the regularity of language- and literacy-related activities in the home, and, most important, the extent to which children use the languages in question themselves.

Gathercole (Chapter 7) extends Unsworth's review by examining other factors that lead to and promote bilingual proficiency. After laying out the contributions of input in the home and the community and the role of the quality and sources of input, Gathercole shows that the complexity of linguistic forms in each language also affects bilingual outcomes, giving rise to profile effects. This means that language aspects that are complex take longer to emerge than aspects that are simpler, making

bilingual learners perform similarly to monolingual speakers on some structures but distinctly on others. Gathercole further shows that, together with home language, socioeconomic status is one of the best predictors of performance on both receptive vocabulary and grammar measures, especially at later ages, pointing to the crucial role of socioeconomic and sociocultural issues in bilingualism.

Unsworth and Gathercole discuss outcomes related to bilingualism when there is continuous exposure to both languages. Montrul (Chapter 8) reviews key studies on bilingual skills in populations for whom first language input is interrupted: heritage learners, the children of adult immigrants who receive reduced input to the heritage language, and international adoptees. The findings presented in this chapter show that for a language to develop, stabilize and not regress, a critical mass of input and use is required during an extended period of time, possibly until the period of late elementary schooling and later language development. These results put into question the notion that language acquisition is largely complete by age three or four, as traditionally put forth by monolingual acquisition studies, and calls for language acquisition theories that move beyond static accounts of bilingual development and take into account the full constellation of social and psychological factors that can affect—and the language skills that can result from—bilingualism across the lifespan.

Next, Birdsong and Vanhove (Chapter 9) focus on one of the most influential factors that have been traditionally believed to determine bilingual attainment: age of onset of second-language acquisition. The relationship between age and ultimate level of attainment in a second language has been often thought of in terms of an “earlier is better” generalization, with young learners displaying fluent speech, effortless language processing, and native accent while late learners diverge from monolingual natives on accent, grammatical and lexical knowledge, and processing speed. This chapter reviews research on age effects on second language acquisition, in particular, whether such acquisition is truly constrained by a “critical period” after which nativelike attainment in the second language is not possible. Birdsong and Vanhove also review sociopsychological factors besides age—in particular, learners’ socialization patterns and their choices of integration with or segregation from specific sociolinguistic milieus—that might crucially condition the outcomes of second-language learning.

The final chapter in this section (MacSwan, Chapter 10) focuses on code-switching in adulthood. Traditionally perceived, in monolingual cultures, as indicative of a language disability and seen as a coping strategy for incomplete language knowledge, code-switching is reanalyzed by MacSwan in a review that shows that bilingual speakers who code-switch are not only sensitive to the grammatical rules of their linguistic systems, but they use their two languages creatively to fulfill a variety of pragmatic, stylistic, and social needs.

The third section of the volume addresses academic achievement in school-age bilingual children and literacy in bilingual readers. Lindholm-Leary (Chapter 11) reviews research on bilingualism and academic achievement among U.S. students

enrolled in dual language programs, in which instruction occurs in two languages with the goal of promoting bilingualism, biliteracy, and grade-level achievement. The review shows that students in dual language programs become bilingual speakers and achieve at or above grade level in English and the partner language, and they perform at comparable or higher levels compared to peers who are enrolled in English mainstream programs. However, challenges exist to develop high levels of bilingualism within dual language programs beyond primary school because the U.S. educational context does not value bilingualism and school accountability and academic success are associated with demonstrating language proficiency and achievement in English but not in an added language.

Turning to a psycholinguistic perspective of bilingual literacy, Kroll, Gullifer, and Zirnstein (Chapter 12) show that the bilingual speaker's two languages are open to cross-language activation that influences reading in each language. This is the case not only for bilingual speakers who are highly proficient in two languages but also for those acquiring second language literacy beyond early childhood, and for bilingual readers of languages with different scripts or of only one language. Such cross-language activation requires bilingual speakers to control the activation of the language not in use, conferring a set of cognitive benefits in tasks that tap into executive function and require ignoring irrelevant information, resolving conflict, and switching between conditions. The main implication of these findings is that the model of the monolingual reader reading in a single, native language is no longer taken to characterize successful literacy. Rather, a new model of literacy should accommodate the presence of two or more languages, the interaction that occurs cross-linguistically, and its consequences on cognition and processing.

If the experience of selecting languages for a context or a task affects cognitive processing, then such effects might well be observed across the lifespan. Indeed, in the next section on the cognitive effects of bilingualism, the authors review evidence showing bilingual advantages in some aspects of cognition over monolinguals across the lifespan. Kóvacs (Chapter 13) argues that early exposure to complex input leads not only to the development of enhanced cognitive abilities but also to complex social understandings in bilingual infants. Nicoladis (Chapter 14) shows that some of these effects may continue into early childhood: some studies have shown that bilingual children perform better than monolingual children on some cognitive tasks tapping flexibility, theory of mind, and selective attention. Freeman, Shook, and Marian (Chapter 15) demonstrate that managing multiple languages not only impacts cognitive control but also emotion. The review shows for instance that bilingual speakers process emotions differently across their first and second language and depending on context and cultural affiliation, suggesting interesting connections between identity, culture, language, and emotion processing. Finally, Duncan and Phillips (Chapter 16) examine how speaking more than one language may mitigate the cognitive decline often seen in aging and possibly delay the onset of dementia. Overall, these studies suggest that bilingualism may produce cognitive benefits across the lifespan and help

mitigate age-related cognitive decline. Yet, whether the hypothesized benefits come from bilingualism per se or from the many variables that characterize it remains a topic for future research.

It is precisely with this issue in mind that we return, in the Conclusion, to the themes that emerge throughout the chapters but have received little direct research attention: the variability that characterizes bilingual speakers' language experiences and outcomes, the often-unacknowledged relevance of sociopolitical and sociocultural factors for the outcomes of bilingualism across the lifespan, and the need for future research to be more geographically diverse, socially inclusive, and more readily transmitted to the public at large.