



Zhisheng (Edward) Wen, Richard L. Sparks, Adriana Biedroń, and Mark Feng Teng,
Cognitive Individual Differences in Second Language Acquisition: Theories, Assessment and Pedagogy
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Zhisheng (Edward) Wen, Richard L. Sparks, Adriana Biedroń, and Mark Feng Teng's *Cognitive Individual Differences in Second Language Acquisition: Theories, Assessment and Pedagogy* offers an interdisciplinary account of how cognitive individual differences shape second language acquisition (SLA). Drawing on applied linguistics, psychology, and cognitive science, the volume examines variables such as age, intelligence, aptitude, working memory, attention, metacognition, self-regulation, and anxiety. The book opens with an overview chapter and is organized into four parts: Part I, "Age, Intelligence, Aptitude and Affect"; Part II, "Memory, Attention and Noticing"; Part III, "Learning Strategies, Metacognition and Self-Regulation"; and Part IV, "L2 Skills, Learning Difficulties, and Anxiety." It closes with an epilogue that reflects on the contributions of individual-differences research to SLA. In what follows, this review assesses the volume's major contributions and identifies areas where its analysis could have been further developed.

In the foreword focusing on cognitive individual differences, the distinguished researcher Peter Skehan highlights a distinction between two schools of thought in second language acquisition: one grounded in universalist principles, which assume that all learners acquire language in similar ways, and another based on differential principles, which emphasize the role of cognitive differences among learners. Skehan supports this distinction by tracing aptitude research from Carroll's foundational work to recent measures such as the High-Level Language Aptitude Battery (Hi-LAB; Linck et al., 2013), designed to assess advanced language-learning capacities (Doughty, 2019).

Part I consists of four chapters that examine the interactions among age, intelligence, aptitude, and affect in the context of second language acquisition. The author, Adriana Biedroń, analyzes these fundamental components with precision, examining their influence on learning outcomes.

In the first chapter, “The Age Factor and the Critical Period Hypothesis,” Biedroń examines the Critical Period Hypothesis (CPH), which posits that success in second language acquisition diminishes with age. She references studies (e.g., Muñoz, 2019; Pfenninger & Singleton, 2019), indicating that early starters achieve superior pronunciation; however, she acknowledges variability in the results. Biedroń associates this variability with alterations in brain function, such as a deceleration in procedural memory. Her discussion gives limited attention to observations suggesting that motivation and learning context may mitigate age-related constraints (Gabryś-Barker, 2018). Although she argues that late learners rarely achieve native-like fluency, she does not address exceptional cases of successful older learners, which could make the interpretation of the CPH appear less rigid.

In the second chapter, “Intelligence,” Biedroń discusses the disregard for intelligence in SLA research over the last few years. She presents a compelling case for intelligence’s critical role in language learning by exposing common misconceptions and showing the field’s developing grasp of the term. Through her sophisticated presentation of intelligence models, measurement techniques, and their connection to SLA, Biedroń repositions intelligence within the current SLA discussion. She discusses the Wechsler Intelligence Scale, which is one of the most widely used intelligence tests (1939, 1997, 2008). Finally, Biedroń concludes that stronger performance in both first and second language learning is often associated with higher IQ scores and more efficient working memory. This aligns with Skehan’s (1998) assertion that exceptional verbal memory is the paramount characteristic of highly effective learners.

In the third chapter, “Foreign Language Aptitude,” Biedroń examines the complexity of language aptitude, tracing its evolution and contemporary significance. She carefully examines the factors influencing aptitude, including memory and socio-environmental variables, as well as neurological underpinnings. Through meticulous analysis of aptitude testing, Biedroń offers valuable insights into its dynamic nature and pedagogical implications.

Finally, in the fourth chapter, “Language Aptitude, Psychological and Affective Factors,” Biedroń brings together the cognitive and affective aspects of SLA and explains how they are linked. She shows how psychological factors, such as motivation and anxiety, can affect language learning in subtle yet real ways by explaining how they shape our thinking. Biedroń shows how psychological factors can play a vital role in determining linguistic talent and giftedness through detailed theoretical discussion and illustrative examples.

Biedroń’s analysis of age, intelligence, aptitude, and affect is comprehensive, particularly with CPH’s age curve. Nonetheless, it would be more impactful

with exceptions for late learners, recognition of IQ limitations, and practical strategies for educators.

Part II, authored by Zhisheng (Edward) Wen, examines the complex domains of memory, attention, and noticing and presents a more intricate understanding of their roles in SLA. Wen adeptly explores the complex nature of these cognitive processes in two carefully crafted chapters that analyze their implications for the future of language education and curriculum design.

In “Phonological and Executive Working Memory,” Wen examines the role of working memory (WM) in facilitating second language acquisition from a cognitive-psychological perspective. Drawing on psychology and neuroscience, he discusses the role of working memory (WM) in language acquisition, particularly phonological working memory (PWM) in auditory processing and executive working memory (EWM) in task management. Wen advocates a shift in research, emphasizing the need to move beyond fundamental PWM and EWM concepts to a detailed examination of executive functions, such as the mechanisms underlying shifting focus during sentence processing. He argues that it is more important to grasp these interrelated cognitive processes than to adhere to the conventional SLA framework. Wen also makes a pedagogical connection and suggests this could improve classroom practices, including activities that shift learners’ attention away from rote memorization. His analysis is substantial and suggests potential adjustments to classroom practice; however, some of its pedagogical implications remain underexplained.

Wen concludes the chapter with a table titled “Major Formats and Procedures of WM Span Tasks,” which summarizes widely used working memory (WM) span tasks in language and SLA research. He also outlines the Phonological/Executive (P/E) model, which refines Carroll’s aptitude framework by distinguishing between phonological WM, responsible for sound/form retention, and executive WM, associated with higher-order processing. However, the discussion provides limited context for understanding the model’s implications for SLA. For instance, the reference to the “plus–minus” task (a task-switching measure) is not clearly explained (Liu, 2024). A clearer account of how such tasks relate to language learning activities would strengthen the table’s pedagogical value.

In “Consciousness, Attention, and Noticing,” Wen examines the interplay among awareness, attention, and noticing in second language acquisition. He leans on Schmidt’s noticing hypothesis, which holds that conscious attention to linguistic detail supports learning, especially in task-based setups (TBLT), and pairs it with concepts such as selective attention and the constraints imposed by cognitive load. Wen analyzes how different theories, such as Schmidt’s proposal of heightened awareness in grammatical tasks, influence SLA, while also identifying their shortcomings: the need for more empirical data and the tendency to oversimplify complex cognitive processes. Utilizing the book’s

cognitive framework, he incorporates elements such as motivation, illustrated by an engaged learner with focused attention, and social connections that facilitate progress. Although Wen does not provide specific examples for every issue, his comprehensive analysis presents significant challenges for future research.

To sum up, in Part II, Wen presents an in-depth examination of memory, attention, and awareness in SLA, by integrating cognitive psychology and neuroscience with language learning. However, some parts of the analysis could be clearer. For instance, when Wen introduces the P/E model, the lack of context makes it hard for readers to fully grasp its implications, leading to confusion. Although the discussion of working memory and Schmidt's noticing hypothesis is thorough, the chapter would benefit from clearer explanations and investigations on how these ideas can be practically applied in teaching. While the content is rich and informative, simplifying the presentation would make it more accessible and useful for educators.

Part III comprises three chapters that examine learning strategies, metacognition, and self-regulation in SLA. The author, Mark Feng Teng, explores the complexities of these cognitive processes through three carefully crafted chapters that offer significant insights into their role in language acquisition and education.

In the chapter "Language Learning Strategies," Teng navigates through the historical development of L2 learning strategies, offering a nuanced understanding of their assessment and effectiveness. By synthesizing research on the role of IDs in strategy use, Teng highlights the importance of strategy-based instruction in enhancing L2 learning outcomes. He concludes by addressing the ongoing challenges in instruction and pedagogy related to language learning strategies, thereby indicating directions for future research and practice. Among other points, Teng argues that identifying the strategies used by proficient language learners provides a basis for further research on language learning strategies (LLSs). In this context, he elaborates on the typologies of LLSs proposed by O'Malley and Chamot's (1990) and Oxford's (1990).

The chapter "Metacognition" explores the importance of metacognition as a vital instrument for language acquisition and instruction. Teng presents a comprehensive framework for comprehending metacognition in SLA, highlighting its importance in enhancing listening, reading, and writing skills. He also emphasizes the important role of language teachers in promoting students' metacognitive awareness by thoroughly analyzing assessment tools and research on metacognition.

In "Self-Regulation," Teng explores the multidisciplinary notion of self-regulation and its application in SLA contexts. He elucidates its function as the "engine" propelling strategic learning in language acquisition by examining major models and research findings. He acknowledges the challenges

involved in developing self-regulated language-learning capacity and, in doing so, indicates directions for future research and pedagogical intervention.

Regrettably, the chapter fails to examine the difficulties of self-regulated language learning. Although Teng acknowledges the challenges students encounter, the discussion lacks practical guidelines for educators on how to help students develop self-regulation. The chapter's pedagogical value for language instructors is limited by this missed opportunity to bridge theory and practice.

To conclude, while Part III provides a comprehensive examination of cognitive processes in SLA, it lacks depth in certain essential aspects. For instance, Teng's analysis of language learning strategies, metacognition, and self-regulation provides a significant historical perspective and theoretical framework, especially through his thorough examination of the utilization of cognitive and social strategies among learners. However, the analysis remains largely theoretical. Most notably, the discussion of self-regulation presents important models and research findings, but it offers fewer concrete strategies for helping teachers foster self-regulatory capacities in their learners. This limits the section's relevance for language instructors, who would benefit from more specific strategies for connecting theory with classroom practice. Consequently, although this part contains substantial scholarly content, its practical utility for educators is somewhat reduced.

In **Part IV**, Richard L. Sparks, a prominent scholar of language learning difficulties and individual differences in SLA, examines L2 skills, learning difficulties, and anxiety across the final three chapters. Sparks adeptly addresses the complexities of these issues across well-structured chapters, providing valuable insights into their impact on educational methodologies and language acquisition.

Sparks analyzes the essential elements of reading and writing in L2 acquisition in the chapter "L2 Reading and Writing Skills," emphasizing their connection to oral language proficiency. Sparks introduces the Simple View of Reading (SVR) and Simple View of Writing (SVW) models, highlighting the cognitive components critical for decoding, comprehension, and written language production. He examines the relationship between listening and reading comprehension, offering important insights for evaluating and teaching English skills to L2 learners. However, Sparks offers only a general overview of the correlation and fails to specify whether speaking or listening models exist or how they interact with SVR/SVW.

The chapter "L2 Learning Difficulties and Disabilities" examines the challenges encountered by students with learning disabilities in their first (L1) and second (L2) languages. Sparks offers an in-depth examination of learning disabilities, emphasizing that definitions and diagnostic criteria can differ markedly among various cultures and languages. He clarifies the distinctions among the terms "differences," "difficulties," and "disabilities," noting that

educators generally identify students facing challenges in L2 learning. This distinction is significant because it shapes educators' perceptions and responses to students' needs; acknowledging these differences can lead to more tailored support strategies.

Sparks states that various studies from both the U.S. and abroad have demonstrated that learners who experience difficulties with their first language frequently encounter analogous challenges when acquiring a second language. He highlights the importance of adopting innovative teaching methods tailored to support second language learners with language-learning disabilities, based on an examination of relevant research.

In the chapter "L2 Anxiety: An Affective Factor or a Linguistic Variable?" Sparks conducts a critical analysis of L2 anxiety as a barrier to language acquisition. He critically examines research on anxiety surveys and empirical challenges to the anxiety hypothesis, questioning the validity of anxiety instruments in assessing L2 achievement. The author suggests that language skills may confound research on L2 anxiety and recommends pedagogical approaches that emphasize the development of language competence.

The book concludes with an epilogue titled "Individual Differences in SLA—Looking Back and Looking Forward," wherein Richard Sparks and Zhisheng (Edward) Wen analyze cognitive and emotional themes presented throughout the volume. Sparks and Wen emphasize issues such as learning disabilities and L2 decoding challenges that have previously been neglected in the literature. The authors analyze key factors affecting SLA, including intelligence, language aptitude, and metacognitive strategies, while also considering often-overlooked issues. They highlight similarities with the "Grand Synthesis" in reading research, underscoring the necessity of interdisciplinary collaboration to address "siloing" within the field.

In conclusion, the book offers a rigorous and comprehensive analysis of the cognitive factors that affect SLA. The authors have synthesized existing literature and offered new research insights on this important topic. Although the book provides a rigorous analysis of cognitive factors in SLA, it could benefit from a broader scope. Additionally, incorporating concrete case studies, such as a learner using robust memory to acquire vocabulary, would substantiate these concepts and bridge the theory–practice divide. Addressing these gaps would significantly enhance the book's utility for scholars and educators, improving strategies for ESL and L1 students. Finally, future editions could incorporate more precise evidence from longitudinal or classroom-based studies to strengthen the volume's empirical grounding.

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