

Introduction

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Second language learning is the study of how learners come to create a new language system with an often limited exposure to the second language. It is the study of how they can make use of that system during comprehension and speech production. In a general sense, a second language (L2) refers to a language that is acquired after the first language (L1) has been established in early childhood.

Theory and research in second language acquisition has emphasized the complexity of acquisition processes. How learners process language, how they intake it and accommodate it into the new language system, and how they access the information for speech production are key areas of research in second language acquisition. Scholars in this field are mainly interested in exploring what the processes and key factors involved in language acquisition are. Research carried out in this context is often about learners and learning. However, the main findings of this research have implications for teachers and teaching.

The Cambridge Handbook of Language Learning builds on this impetus and reports on topical areas and findings that have formulated and continue to define research trajectories in the field of L2 acquisition today. The authoritative, state-of-the-art works in this handbook are organized across the following seven parts:

- Part I: Theories
- Part II: Methods
- Part III: Skill Development
- Part IV: Individual Differences
- Part V: Pedagogical Interventions and Approaches
- Part VI: Context and Environment
- Part VII: Moving Forward

In Part I, the handbook opens with a set of chapters that are dedicated to discussing prominent theories and frameworks in L2 learning. Chapter 1 by Jason Rothman, Fatih Bayram, Ian Cunnings, and Jorge González Alonso opens the section with an exhaustive overview of the major contemporary theories, models, and hypotheses that drive formal linguistic and psycholinguistic research in adult L2 acquisition and processing. The authors focus on morphosyntax proper and its interfaces with semantics, pragmatics, and phonology (prosody). In addition to a historical overview of how the main questions of the paradigm have been refocused over time as formal linguistic and acquisition theories evolved, the chapter also presents how typically used methodologies have expanded, especially in the past decade or so. In Chapter 2, Nick C. Ellis and Stefanie Wulff present an overview of cognitive approaches to L2 learning which hypothesize that L2 learners acquire constructions (form–function mappings, conventionalized in a speech community) from language usage by means of general cognitive mechanisms (exemplar-based, rational, associative learning). The authors present a usage-based analysis of this in terms of fundamental principles of associative learning: low salience, low contingency, and redundancy all lead to form–function mappings being less well learned. From the review of experimental work of learned attention and blocking in L2 learning, the chapter presents educational interventions such as form-focused instruction which recruits learners’ explicit, conscious processing capacities and allows them to notice novel L2 constructions.

Chapter 3 by Rémi A. van Compernelle presents a critical overview of the primary characteristics of Vygotsky’s sociocultural theory and how they relate to the qualitative science of L2 learning. The author makes extensions to these theories such that it can be invoked as an analytic lens for interpreting “naturalistic” data and can also be used as the basis for designing educational opportunities. Chapter 4 by John Truscott and Michael Sharwood Smith concludes Part I. In this chapter, the authors review four examples of narrow theoretical frameworks (interlanguage theory, creative construction approach, generative approach, and processability theory) that have served to guide L2 research. Following this, two broad frameworks are discussed: the complex adaptive systems approach, particularly as realized in the position paper of the Five Graces Group (2009), and the MOGUL framework of Sharwood Smith and Truscott (2014). The authors’ critical analysis of theoretical frameworks suggests that a broad framework to L2 learning should be emphasized in which assumptions about the nature of language, learning, and the mind must be made explicit and critically examined.

Part II presents important methodological approaches in L2 learning research. Peter I. De Costa, Wendy Li, and Hima Rawal in Chapter 5 offer insight on several qualitative methodologies (e.g., case studies,

ethnographies) that have been used in L2 classroom-based research along with methods (e.g., interviews, focus groups, observations) that are used in conjunction. The authors also review key theories in L2 acquisition, discourse analytic approaches, and discourse analytic tools that are generally adopted. The chapter demonstrates how some quantitative methods can effectively be paired with qualitative methods and contemporary constructs such as emotions and language ideologies in order to extend this research agenda, thereby creating a holistic understanding of the dynamics surrounding language acquisition. In Chapter 6, Charlene Polio and Jongbong Lee focus on experimental classroom research. They first present its historical context by explaining what early research investigated as well as some of the problems with the early research. Following this, the authors provide a summary of experimental classroom research published in the last ten years in which the researchers manipulated an independent variable within a classroom setting. The chapter concludes with a discussion of the drawbacks and challenges in experimental classroom research including the lack of random assignment or control groups and issues related to internal validity such as controlling for teacher and student variables.

Chapter 7 by Anne Burns tracks the development of action research, a methodological approach used by practitioners in language educational contexts which takes a socio-constructivist approach and views teachers as agentive actors and investigators within their own social contexts. The author considers recent initiatives that have contributed to the spread of action research and discusses the findings about the impact on teachers who conduct action research. Nina Spada transitions to classroom observation research in Chapter 8. This method, often referred to as interaction analysis, typically involves the use of observation instruments that focus on broad-based, macro-level descriptions (e.g., the communicative orientation of instruction) as well as those that focus on micro-level analyses of specific instructional features (e.g., corrective feedback). Spada offers examples of both types and examines their structure and organization, the type of features included, and coding procedures. She also evaluates the strengths and weaknesses of the interaction analysis approach to L2 classroom observation in relation to other approaches such as discourse analysis and ethnographies.

The last chapter of the section is Leah Roberts' Chapter 9 which provides a state-of-the-art and critical overview of psycholinguistic and neurophysiological methods currently being used in L2 learning and processing. Some of the questions addressed by these methods include the extent to which L2 real-time processing is similar to or different from that of native speakers, how individual differences in factors such as proficiency and cognitive capacity affect L2 processing, and what the influences are of a

learner's first language on the processes of production and comprehension. The methods reviewed by the author allow researchers to examine potentially distinct, qualitative changes in brain signatures that correlate with increased linguistic knowledge as well as learners' error- and feedback-related responses to L2 linguistic stimuli.

Part III reviews research on the development of various L2 skills. In Chapter 10, Jaemyung Goo illustrates the importance of interaction as a valuable opportunity for learners to refine their interlanguage through negotiation for meaning. The author discusses several factors that affect the benefits of interaction including noticing, feedback type, modified output opportunities, task type and complexity, cognitive individual differences, and language aptitude. Through these observations, Goo notes key issues that merit further research to gain a better understanding of L2 learning through interaction. Dustin Crowther and Susan M. Gass provide insight on the development of L2 speaking in Chapter 11. The authors begin by addressing the contract of L2 speaking from both a macro- and micro-perspective, drawing on a corpus of oral proficiency interviews across foreign languages (e.g., French, Spanish, Russian, Chinese). The authors also review phonology-, fluency-, and sociolinguistic-based factors that intersect with listener perceptions of L2 speech performance. The chapter finishes with a discussion on some of the variables that may influence the development of L2 speaking ability.

John Field discusses the development of L2 listening in Chapter 12. The author first reviews the conventional comprehension approach to L2 listening and highlights recent arguments that demonstrate the shortcomings of these conventional approaches. Three recent developments are then discussed. The first is the notion of subdividing the skill of L2 listening into its component parts to enable them to be practised individually. A second development concerns the extent to which learners' difficulties in L2 comprehension derive from the phonetic characteristics of connected speech. A third issue is the role of authentic speech in an L2 listening programme and the nature of the compensatory strategies in which L2 learners engage. In Chapter 13, Elizabeth B. Bernhardt and Cici Malik Leffell shift readers' focus towards L2 reading. Their review of the state of the field shows that a significant amount of research in this area has focused on word- and sentence-level processing. The authors argue that this narrow focus diverts attention from two critical elements that have not been widely discussed: the implications of L2 extended text; and L2 comprehension. As such, Bernhardt and Malik Leffell explore the comprehension of complicated, extended L2 discourse, and their treatment of the interactive compensatory framework, as well as other research methodologies, suggests promising new insights into L2 upper-register text processing.

Chapter 14 by Rosa M. Manchón and Olena Vasylets closes the section by offering a review of research on how and why writing can be a site for L2 learning. The authors comment on empirical L2-oriented writing research looking at how writing and feedback processing can lead to language development, especially areas of development concerned with: (1) language processing in different conditions (individual and collaborative writing) and environments (pen-and-paper and computer-mediated writing); (2) task-related issues, including task complexity, task repetition, and task modality effects; and (3) attentional processes and potential learning outcomes during feedback processing. The authors conclude by ascertaining the implications of the theory and research reviewed and suggest ways of advancing research agendas in the area.

Part IV synthesizes work on the role of individual learner differences in L2 learning. Zhisheng (Edward) Wen and Shaofeng Li report on working memory in Chapter 15. The authors discuss the nature and structure of the limited capacity of the human working memory (WM) system and elaborate on the implications of individual differences in WM has on L2 developmental domains including vocabulary, formulaic sequences and chunks, and morpho-syntactic constructions. Wen and Li also discuss the distinctive roles of executive WM components and functions in selective processes during L2 sub-skills learning and performance such as listening, speaking, reading, writing, and simultaneous interpreting. In Gisela Granena's Chapter 16, the author explores the role of language aptitude in L2 learning and offers an approach to understanding and measuring aptitude components and functions in L2 learning. In addition to providing a review of past and present research on language aptitude, Granena addresses its predictive validity in naturalistic and instructed L2 contexts and analyses the implications for L2 teaching.

Chapter 17 by Stephen Ryan examines some of the key shifts in recent thinking about the motivation to learn an L2, some of the methodological challenges these changes have posed, and some of the ways in which the field has responded to these challenges. The author situates motivation uniquely among learners' individual differences and demonstrates that it has been enthusiastically embraced by both researchers and classroom practitioners, resulting in a fast-changing and expanding theoretical landscape. Ryan concludes the chapter by considering the implications of this period of high research activity and major upheaval for the future development of the field. In Chapter 18, Carmen Muñoz reviews research on age with respect to L2 learning. Recently, this body of work has acquired new perspectives, such as the concern with native-likeness, the view of age as a factor in isolation from other learner internal and external factors, or the generalization of age-related findings across different learning settings. Muñoz discusses these issues and argues for a revamping of

research on age and L2 learning to account for new priorities. Especially, the author notes that further research must investigate the two extremes of the age continuum, that of the very young school learners and that of older learners who may be learning an L2 because of immigration or as a hobby.

Ron Darwin and Bonny Norton in Chapter 19 discuss L2 learner identity as a key factor in L2 acquisition. Through the lens of L2 learning as a social practice implicated in relations of power, the authors show how identity categories impact interactions in diverse learning contexts, positioning learners in different and sometimes unequal ways. Consequently, how L2 learners are recognized as legitimate speakers in these contexts shapes the extent to which they invest in their learning. On this backdrop, Darwin and Norton examine the notion that learners in the digital era need to navigate more complex, fluid spaces in which developing broader linguistic repertoires becomes increasingly crucial in negotiating their existing and imagined identities. The chapter demonstrates how an understanding of the complexities of learners' identities can inform L2 teaching that extends the range of identities and opportunities available to L2 learners around the globe.

Part V engages readers with a dialogue on the pedagogical interventions that facilitate L2 learning. Alessandro Benati and John W. Schwieter, in Chapter 20, examine how different pedagogical interventions to L2 grammar instruction have been addressed from a variety of theoretical frameworks (linguistic, cognitive, psycholinguistic, and neurolinguistic) and pedagogical perspectives (input, interaction, and output). The authors argue that although grammar instruction is limited and constrained due to several linguistic and processing factors, non-traditional pedagogical interventions might have some beneficial effects in terms of speeding up the rate of acquisition. After examining the characteristics, empirical evidence, and theoretical and pedagogical implications of different pedagogical interventions, the chapter outlines guiding principles which should be considered in language pedagogy.

Michael H. Long, Jiyong Lee, and Kyoko Kobayashi Hillman discuss task-based L2 learning in Chapter 21. The authors review a substantial body of research concerning several dimensions of tasks and task-based language learning, including task criticality, frequency, complexity, and difficulty, and the conditions under which tasks are performed. The chapter also synthesizes practical issues in the design and implementation of task-based language teaching and with ways of dealing with problems that can arise in the field. A central issue in task-based L2 learning is how language may be attended to and processed in lessons in which the main focus is on meaning, and how such linguistic processing may interact with task design. Such is the topic of Chapter 22 by Roger Gilabert and Joan Castellví

in which the authors address this issue with regard to morphologically rich languages such as Russian. The chapter provides an overview of communicative language teaching methods and then explores the issue of models of task design and task complexity and how they conceptualize the issue of linguistic complexity. The role of L2 proficiency and the use of tasks at lower levels of proficiency is addressed, and recommendations are made for researchers, syllabus designers, and educators who work with task-based programmes of morphologically-rich languages.

In Chapter 23, David Little reviews the two most widely used proficiency guidelines and frameworks in L2 education worldwide: the American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines and the Common European Framework of Reference for Languages (CEFR). The ACTFL guidelines comprise detailed descriptions of what learners can do at different proficiency levels, whereas the CEFR uses scaled descriptors to illustrate a taxonomic account of language use and the learner's competences. The author explores the origin and objectives of both frameworks, considers their different approaches to language proficiency as language use, and gauges their impact on L2 learning, teaching, and assessment. Chapter 24 by Carol A. Chapelle reports on technology-mediated L2 learning and how technology has affected L2 pedagogical interventions. The author synthesizes work done on new pedagogies that motivate the creation of learning activities which operationalize theoretically-based learning principles. Within this synthesis is an overview of the technological affordances underlying new pedagogies for grammar, vocabulary, reading, writing, listening, and speaking, as well as pedagogical approaches that have been created or enriched through the use of technology (e.g., blended learning, technology-assisted task-based language learning, and distance learning). In addition to reviewing research and evaluation methods used to investigate students' use of technology for language learning, Chapelle highlights how research and development in this area has contributed to the study of L2 learning.

In Chapter 25 by Hossein Nassaji and Eva Kartchava, the authors report on content-based language teaching (CBLT), an instructional method that combines the teaching of academic subjects (e.g., math, science, history) and L2 learning. The chapter outlines the main characteristics of CBLT in general and discusses its origins, various types, and contexts of use. The benefits and shortcomings of CBLT are assessed, as are pedagogical strategies that can address those shortcomings. The chapter concludes with implications for theory and practice and what the future landscape of CBLT research is likely to look like. The last topic of the section is Graham Crookes' Chapter 26, in which the author discusses critical L2 pedagogy, specifically teaching approaches that draw on social justice. Crookes notes a considerable increase in research conducted in this area in recent

decades, with practical work first appearing in the 1980s and more theoretical work and increased examples of practice since the turn of the century. The chapter demonstrates that critical language pedagogy has taken for granted theories of L2 learning which are critical in nature, though little attention has been paid to characterizing them in detail. The author reports on what is implied by critical theories of L2 learning and offers possible alternatives. Within this discussion is the concept of praxis, the integration of theory and practice, which is considered to be of central importance throughout the wider area of critical pedagogy.

Part VI considers the role of context, environment, and other factors in L2 learning. Bilingual education and policy is the first topic presented. In Chapter 27, Christine Hélot and Ofelia García argue that because learners, as well as ideologies about bilingualism vary, *bilingual education* implies many things in different contexts. As such, the chapter differentiates various types of learners and bilingualism, and describes how the main factor of differentiation has to do with power itself. These power differentials have a significant impact on which bilingual education programmes are implemented in different societies, as well as the pedagogical practices used and the resources that are available. This complicated landscape for bilingual education is discussed in the context of a globalizing world, and considerations are made for L2 learners, especially those who are minoritized. In Chapter 28, Kim Potowski and Sarah J. Shin report on heritage language instruction. The authors organize this discussion around four important questions. What is a useful working definition of heritage language learners? What are the major heritage languages around the world, and why are they important? What makes heritage language instruction different from teaching an L2? And what resources are available for educators working with heritage learners? The chapter concludes by advocating for a fundamental shift in societal attitudes towards heritage languages and speakers of those languages in order to accomplish a language competent society.

Aline Ferreira, Viola G. Miglio, and John W. Schwieter in Chapter 29 discuss minority languages and learners in both home and abroad contexts. The authors specifically focus on the role that education and acculturation play in relation to language learning and maintenance. They also compare results in historical minorities in their own countries and heritage language speakers abroad. Examples include Spanish and Chinese as heritage languages in the United States and Canada, respectively, and minority languages in Europe. The chapter demonstrates that although speakers of a minority language constantly face issues like L1 attrition, some alternatives have helped immigrants to maintain their language abroad. In the case of minority speakers within their own country, new policies are decisive in maintaining languages alive in places where they

have a secondary, inferior, legal status. In Chapter 30 by Jane Jackson and John W. Schwieter, the authors report on L2 learning in study abroad and immersion contexts. The chapter specifically focuses on L2 intercultural learning and the internal and external factors that can result in differing sojourn outcomes. As well as summarizing key findings, the chapter raises awareness of the theories and methodologies that characterize research in L2 study abroad settings and also calls on researchers to take a closer look at what actually happens during stays abroad so that study abroad educators and administrators can advocate for research-driven, theory based pedagogical interventions that deepen language and intercultural learning at all stages of the study abroad cycle: pre-sojourn, sojourn, and post-sojourn.

In Chapter 31, Peter Swanson discusses the past, present, and future of teacher education in the United States and juxtaposes this development with the highly successful system in Finland. His review, spanning over two centuries, advocates that teacher education holds many benefits and that care must be taken to advance the profession, continuously seek to improve learner achievement, and develop globally-minded citizens. Swanson's depiction of L2 teaching and learning is a testament that it contributes to these goals.

Part VII concludes the handbook with thought-provoking future trajectories in L2 learning and teaching. Chapter 32 by Susan M. Gass begins by first discussing early foundations of L2 learning by focusing on (1) the relationship between L2 teaching and learning; (2) the general growth of the field of L2 learning; and (3) changes in emphases suggesting a narrowing of the gap. Through her metaphoric crystal ball based on current research trends, Gass contemplates the future from three perspectives: the content of the field (based on past emphases); methodologies and statistical techniques; and research instruments. The author ties together the growth of L2 teaching and L2 learning with observations of ways in which the two continue to feed one another. The chapter concludes with comments about the overall development of the field of L2 learning, basing these observations on study quality, methodological rigour, and statistical sophistication.

Throughout *The Cambridge Handbook of Language Learning*, findings from research have provided a shift in the way we understand L2 learning and the roles played by both teachers and students in the classroom. Current findings from research provide a much clearer picture on how learning another language happens. Understanding more about L2 learning pushes language teachers to question the prevailing methods and approaches in language teaching. Such is the aim of this handbook: to take readers on this journey in which they will learn about the main implications of research and theories for language teaching and the vast territory that is yet to be chartered.