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# The Routledge Handbook of Instructed Second Language Acquisition

*Edited by  
Shawn Loewen and Masatoshi Sato*

# Instructed Second Language Acquisition (ISLA)

## An Overview

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### **What Is ISLA?**

The field of instructed second language acquisition (ISLA) continues to be a growing sub-field within the discipline of second language acquisition (SLA) (see Nassaji, 2016). There are many similar concerns between the two fields, but the continued growth of second language (L2) learning and teaching, as a pedagogical, economic, social, and political activity, ensures that researchers, teachers, and learners continue to grapple with the practicalities of how best to acquire, learn, and teach an additional language.

There have been several attempts to define and describe the boundaries of ISLA (e.g., Ellis, 2005; Housen & Pierrard, 2005), with perhaps the most recent one found in Loewen (2015) in which he describes ISLA as

a theoretically and empirically based field of academic inquiry that aims to understand how the systematic manipulation of the mechanisms of learning and/or the conditions under which they occur enable or facilitate the development and acquisition of an additional language.

*p. 2*

This definition focuses on several key aspects that will be explored further in this introductory chapter.

### *An Academic Field*

An important starting point is that ISLA is an academic endeavor, meaning that it is based on a rigorous and scientific process of accumulating knowledge about L2 learning. To that end, theories and hypotheses have been and are being proposed about general or specific aspects of the L2 learning process (see VanPatten & Williams, 2015 for a recent overview of SLA theories); furthermore, these theories and hypotheses are investigated using data that researchers gather and interpret. Because researchers rely on specific skills and methods to research L2 learning (e.g., Larson-Hall, 2010; Mackey & Gass, 2015; Paltridge & Phakiti,

2015), ISLA includes examination of research methodology, not because it necessarily has a direct impact on L2 learning (although in some cases it might, such as action research), but because research methods are lenses that provide information from specific epistemological perspectives. Consequently, methodology impacts the credibility and trustworthiness of research findings that ultimately inform pedagogical practice.

### *Systematic Manipulation*

Another defining component of ISLA is the systematic manipulation of the learning environment and learning processes, which separates ISLA from what has been called, among other things, uninstructed or naturalistic L2 acquisition; in this, learners are simply surrounded by the target language but make no or little conscious effort to learn the language. Such scenarios might involve immigrants who are exposed to another language as they live in a wider social context, but who are not actively involved in learning the L2. Alternatively, uninstructed L2 learning might occur when expatriates who live and work in non-L1 contexts gain some knowledge of the local language, even though they are not concerned with achieving L2 proficiency. In both cases, the L2 may be “picked up” to a greater (in the case of immigrants) or lesser (for expatriates) degree, but the point is that there is no systematic effort by individuals to learn the L2 and/or by teachers/institutions to help develop the L2; rather, any L2 development results simply from exposure to the target language.

### *Instructional Contexts*

The prototypical context for ISLA is, of course, the language classroom, which may take many different shapes: from introductory lessons for children in elementary school that aim to give kids a taste of an L2, to required university foreign language courses, to private language schools whose sole purpose is to promote L2 learning. However, it is important to point out that the physical classroom is not the only context of interest for ISLA because there is considerable L2 learning that occurs outside of the four walls of a classroom (Leow, 2015). For instance, the virtual L2 classroom is an increasingly popular L2 learning context, with both hybrid and fully online options (see Benson & Reinders, 2011). In addition, there are other circumstances, such as learner self-study, in which there is systematic manipulation of the learning conditions. For example, although autonomous learners may rely solely on authentic materials, in which case the level of manipulation is very low, learners generally use some type of study aid, such as books or computer programs or apps, to help them in their learning process. These materials, then, have been developed (i.e., manipulated) by individuals who presumably believe that the materials will be effective for L2 learning.

Another context that is included in ISLA is study abroad, even though the amount of manipulation may be minimal if students are placed in content classes taught in the target language and left to their own devices; however, many study abroad programs provide considerable structure for L2 learning. In such cases, learners are exposed to both intentional and incidental learning conditions (see Pérez-Vidal, 2014). As study abroad students interact in the broader target language context, they may not differ substantially from uninstructed learners; however, the mere fact that they have chosen to engage in study abroad indicates that they have altered their circumstances in an effort to gain more knowledge of the L2. Thus, although the amount of manipulation may vary, and it may be done by teachers, learners, or others (such as textbook designers), there is always at least some effort to acquire the L2.

Finally, it is important to point out that learning contexts may also affect the effectiveness of instruction because language instruction is a culturally bound endeavor, and while the fields of SLA and ISLA were primarily developed in North American and Western European contexts, the considerable importance of L2 instruction in other parts of the world has necessitated different perspectives on the classroom. In other words, it is necessary to conduct research in different learning contexts that may challenge existing ISLA theories or provide alternative perspectives. As an example, the different perspectives between task-based language teaching with its emphasis on student-centered activities (see Shehadeh & Coombe, 2012) and, in contrast, more teacher-centered educational cultures require ISLA researchers to consider how larger social, political, or ideological variables may affect the classroom (see Block, 2014).

### *Target of Manipulation*

Another important consideration of ISLA are the mechanisms of learning, which include the processing and internalization of input; the restructuring, consolidation and storage of L2 knowledge; and the production of L2 output. However, not all learning mechanisms are of equal interest to ISLA researchers because some mental processes are not open to manipulation. For example, Universal Grammar (UG) or innatist perspectives of L2 acquisition are not primarily focused on instruction because arguably there is little that can be done to alter the makeup of the cognitive system. White (2015) states: “Clearly one cannot instruct L2ers as to UG-constraints (nor does anyone attempt to do so)” (p. 48). Similarly, the implicit processes that are involved in extracting patterns from input, as proposed by frequency- or usage-based approaches to L2 learning, are not generally influenced by L2 instruction, as Ellis and Wulff (2015) claim: “exemplar-based learning . . . is in large parts implicit . . . taking place without learners being consciously aware of it” (p. 76). Nevertheless, both innatist and frequency-based perspectives do have an interest in how the input that learners receive—which can be manipulated—affects the L2 learning process. In general, therefore, ISLA research is concerned with L2 learning processes that are hypothesized to be or have been found to be amenable to intervention.

### *Goals of Instruction*

Having described ISLA in somewhat technical terms, it is important to consider, in more lay terms, its primary concern, which is: *what is the best way to learn and/or teach an additional language?* Implicit in this question is the notion that instruction can make a difference in L2 learning; however, the views about the amount of influence instruction can have on L2 learning range from minimal to extensive. For example, early theoretical views by Krashen (e.g., 1982, and more recently 2003), exemplified in a strong version of communicative language teaching (CLT), argue that instruction has little impact on L2 acquisition; instead, learners need to be provided with rich, authentic input in the classroom. Such views about the ineffectiveness of instruction, however, are in the minority, and most ISLA researchers, almost by definition, believe that instruction of some sort can positively influence L2 learning.

However, it is all well and good to say that L2 instruction is effective, but we also need to ask ourselves, *Effective for what?* In other words, what is the goal of L2 instruction? The goals of individual L2 learners or teachers may vary, but overall, the goal of many in the ISLA endeavor is for learners to develop communicative competence in the L2, that is the ability to use the L2 for communicative purposes (e.g., Littlewood, 2014). Of course, some

learners have other goals, such as gaining reading ability in the L2, learning phrases to help them on an upcoming trip, passing a L2 course required for their degree, or obtaining a good result on a standardized test to advance their careers. In other words, full proficiency or communicative competence may not be the goal. Nevertheless, if the goal of L2 instruction is often L2 proficiency, then we need to consider what precisely proficiency consists of, how to measure it, and what can bring it about.

Although there are different theoretical viewpoints about what constitutes L2 learners' linguistic knowledge, there is general agreement that not all knowledge is the same. On the one hand, there is what has been called explicit knowledge, declarative knowledge, or knowledge "about" language, all of which consist of information that learners are consciously aware of (DeKeyser, 2015; Rebuschat, 2013). Furthermore, this type of knowledge can be verbalized by learners and it can be reflected upon, although it may take the form of either lay terminology, such as "You need an *-s* because it is *he*," or more technical, metalinguistic descriptions, such as "third person singular *-s*." Another characteristic of explicit or declarative knowledge is that it is easily taught, in the same way as mathematic equations or historical dates. Teachers can present explicit information, often in the form of grammatical rules, and learners can commit them to memory. Subsequently, teachers can test to determine whether learners have retained this knowledge, and, if students have studied hard and have sufficient time to draw on their knowledge, they may do well on such tests.

However, the difficulty with explicit or declarative knowledge is that it is not readily available for use in spontaneous, real-time communication. For that, learners need to possess a type of knowledge that has been referred to variously as implicit knowledge, proceduralized knowledge, or knowledge "of" language, which is held unconsciously by the learner. In other words, learners are not aware of this knowledge, and they cannot verbalize it; however, learners are able to access it rapidly to communicate in spontaneous, real-time contexts. (Note, however, that it is possible for learners to possess both types of knowledge of the same linguistic feature.) The quintessential example of implicit knowledge is the knowledge that speakers have of their L1, especially before they receive any educational instruction about the language (via language arts or literature classes). When L2 learners ask L1 speakers why a specific utterance is grammatically or collocationally non-target-like, L1 speakers will often reply, "I don't know. It just sounds wrong." L1 speakers certainly know whether an utterance is acceptable in their L1, but they may not have the explicit knowledge of the linguistic rules to state why it is not acceptable. In sum, implicit knowledge is the primary contributor to communicative competence; therefore, it is the type of knowledge that many L2 learners wish to obtain and the type of knowledge that ISLA is primarily concerned with.

Specific language domains to which implicit knowledge can be deployed vary. Following the research focus in the field of linguistics, grammar has traditionally been the domain of ISLA research, with other linguistic areas receiving less coverage. However, that situation has changed over the past 20 years, with the increased emphasis on vocabulary, as well as pronunciation and pragmatics. Furthermore, one of the efforts of ISLA has been to provide a more integrated view of language and to consider ways in which theoretical concerns may apply across linguistic domains. So, for example, does the theoretical concern with explicit and implicit L2 knowledge, which has been primarily concerned with grammar, also apply to vocabulary, pronunciation, and pragmatics? Or are other theoretical perspectives more applicable? Although ISLA has been concerned with linguistic knowledge, there has also been a concern, especially among teachers and learners, with the language skills, especially productive skills. Consequently, some ISLA researchers conceptualize the goal of instruction in skill domains such as listening, reading, writing, and speaking.

### *Type of Instruction*

While explicit knowledge (e.g., being able to recite grammatical rules) is relatively easy to gain and can be taught explicitly, implicit knowledge (e.g., being able to communicate in the target language accurately and fluently) is less amenable to instruction and often takes considerable time to develop. But if the goal of learners (and teachers and researchers) is implicit knowledge, how can this goal be achieved in the classroom? Can explicit knowledge be taught and then converted into implicit knowledge? ISLA scholars disagree on this point, which is referred to as interface positions. There are three perspectives: (1) the noninterface position maintains that the two types of knowledge are distinct and it is not possible for explicit knowledge to become implicit; (2) the weak interface position argues that under the right circumstances explicit knowledge may become implicit, but such conversion is not easy; and (3) the strong interface position claims that explicit knowledge can become implicit.

The reason that it is important to consider the relationship between explicit and implicit knowledge, from an ISLA perspective, is that it is important to know which types of manipulations (or instruction) are going to have an effect on which types of L2 knowledge. Within the last several decades, the investigation into this topic has been framed in terms of meaning-focused instruction and form-focused instruction. Meaning-focused instruction has its roots in the CLT movement, as put forward by researchers such as Krashen, who argued that the best way to bring about L2 communicative competence is by having learners communicate in the target language and that explicit instruction of linguistic forms (e.g., teaching grammar) has a detrimental effect on the development of communicative competence.

However, over time it became clear that meaning-focused instruction alone would not bring about the level of accuracy in L2 learner production that might be desired. Consequently, focus on form was put forward as a way of having brief attention to linguistic items during larger meaning-focused interaction (Long, 1996) in order to develop both accuracy and fluency in L2 learners. Long contrasted focus on form with focus on forms, the latter of which is the term he used for traditional, explicit language instruction. Over time, the terms *focus on form* and *focus on forms*, as well as *form-focused instruction* have been used somewhat differently by different researchers. Our current way of understanding of these terms (e.g., Loewen, 2015) is that form-focused instruction is a superordinate category that is commensurate with meaning-focused instruction; however, whereas meaning-focused instruction focuses exclusively on communication without any, or very minimal, attending focus on linguistic items or structures, form-focused instruction includes attention to linguistic form to varying degrees. Focus on form and focus on forms, then, are subordinate categories within form-focused instruction that reflect the amount of attention to linguistic structures in the instruction. In focus on forms, the primary focus is on linguistic structures, and instruction often follows a structural syllabus with different grammatical features being introduced in consecutive fashion. In contrast, focus on form describes instruction that is primarily meaning-focused, but includes brief attention to linguistic items as the need arises during communication. Sometimes, focus on forms and focus on form are used dichotomously to indicate two different types of instruction; however, it is perhaps more helpful to think of the two types of instruction as poles on a continuum, in which the ratio of attention to language form and meaning change proportionally.

So why does it matter how implicitly or explicitly language structures are addressed in instruction? Well, it goes back to the notion of what type of L2 knowledge teachers and researchers want learners to develop. There is a tendency for explicit instruction to result in

explicit L2 knowledge, which tends not to be helpful in developing learners' communicative competence. Thus, the argument is that more implicit types of instruction, which have more emphasis on meaning and communication, are more suited for the development of implicit L2 knowledge. However, it is also the case that if instruction is too implicit, there may be no improvement in the accurate use of the targeted linguistic feature (as can be seen in fossilization of immersion learners). Currently, much ISLA research is ultimately concerned, either directly or indirectly, with the optimal combination of attention to language forms and language meaning in the classroom.

Having made a broad claim about the focus of ISLA research, it is important to acknowledge that there are numerous variables, both internal and external to the learner, which moderate and influence the effectiveness of instruction. Such individual differences are both interesting and challenging to ISLA researcher (as well as teachers and learners) who are trying to account for the effects of instruction. Learner-internal factors that have received considerable ISLA investigation include motivation, language aptitude, and foreign language anxiety (see Dörnyei & Ryan, 2015), while learner-external factors include the micro- and macro-social contexts in which learners find themselves (see The Douglas Fir Group, 2016). Furthermore, teachers' characteristics may affect the ultimate effect of instruction (see Borg & Sanchez, 2015).

In sum, this overview has attempted to provide an overarching framework for ISLA, while introducing the rich array of concerns and interests that comprise ISLA research. Given the diversity and complexity within the field, we refer the reader to the individual chapters included in the current handbook for specific theoretical foci, empirical references, and practical pedagogical suggestions.

### About This Handbook

This handbook is the first collection of state-of-the-art papers pertaining to ISLA, with the purpose both to provide an overview of past ISLA research as well as to identify new and growing areas of interest. The handbook consists of 32 chapters (including the current chapter) written by 45 world-renowned experts and prominently emerging researchers in the field. Unlike many handbooks and encyclopedias, the entries are full-length articles detailing pertinent issues surrounding the respective topics. In addition, authors were asked to discuss updated research (as recent as 2017 publications) so that readers, both researchers and teachers alike, could be informed of current issues and cutting-edge pedagogical developments. We hoped to be comprehensive and inclusive in terms of topics but, at the same time, we are aware that such an endeavor never sees perfection.

The authors come from varying theoretical backgrounds precisely due to ISLA's cross-disciplinary nature (e.g., linguistics, psycholinguistics, psychology, sociolinguistics, technology, and education). Moreover, in order to reveal the complexity of L2 acquisition in instructional settings and to provide useful information to practitioners, we believed it was necessary to accumulate knowledge from differing perspectives. In this respect, we requested that authors share their expert opinions on their topics rather than merely surveying and summarizing existing research findings, with the result that each contribution constitutes a unique position paper. Also, we asked the authors to give a special attention to the *I* in ISLA by emphasizing pedagogical aspects and implications. As a result, we believe that each chapter serves three purposes: (1) providing updated literature and discussions of current issues; (2) sharing the authors' understanding of and approaches to the issues; and (3) providing direct links between research and practice.

### Components of the Handbook

Each chapter starts with a Background section where the authors layout the framework for the topics. The following Current Issues section introduces theoretical and methodological issues that have been debated in the past, as well as those that are still being debated. Then, the authors elaborate the identified issues with empirical findings in the Empirical Evidence section. Importantly, the empirical evidence is discussed in order to support both the theoretical and pedagogical discussions. In the following Pedagogical Implications section (which occurs in all chapters except for those in Section I, focusing on theoretical issues, and Section VI, covering methodological concerns), the authors apply the empirical findings to instructional contexts. Finally, the authors conclude their chapters with the Future Directions section where they propose new research topics based on current studies and noticeable gaps in the research.

In addition to structuring each chapter in the aforementioned way, we asked the authors to include two types of call-out boxes. In Key Concepts boxes, the authors introduce and/or define concepts that are important to their topics. We hoped that the boxes would serve as a quick reference for a reader who may not be familiar with a particular topic. In the Teaching Tips call-out boxes, the authors offer practical pedagogical advice based on their research experiences. These call-out boxes can provide readers with a quick summary of some of the most important theoretical and pedagogical points in each chapter.

### Topics in the Handbook

To achieve the goal of surveying research in the multifaceted discipline of ISLA, we divided the handbook into six sections.

- Section I: Second Language Processes and Products
- Section II: Approaches to Second Language Instruction
- Section III: Language and Instructed Second Language Acquisition
- Section IV: Instructed Second Language Acquisition Learning Environments
- Section V: Individual Differences and Instructed Second Language Acquisition
- Section VI: Instructed Second Language Acquisition Research Methods

It should be noted that in reality there is sometimes considerable and inevitable overlap between sections, and within chapters in a section. For example, Section I on L2 processes and products is more theoretical, but several of the chapters provide direct support for specific types of approaches to instruction in Section II. Additionally, different types of instruction (Section II) may be more or less relevant to specific aspects of language (Section III). Research both of learning and teaching environments (Section IV) and individual differences (Section V) require theoretical bases (Section I) and relate to instruction (Section II). Not to mention, research methodology (Section VI) is relevant to all research discussed throughout the handbook. The interconnection is a testimony of, again, the complexity of ISLA. Next we explain the main themes of each section and chapter.

### Section I: Second Language Processes and Products

This section is probably the most theoretical and least directly applicable to the classroom; however, it is essential to understand the goals of ISLA—what is the result of ISLA—and how to achieve those goals. In Chapter 2, Robert DeKeyser dissects the issues related to

L2 knowledge and skills (e.g., declarative/procedural, implicit/explicit, and automatized/controlled) and argues that the goal of ISLA is automatized procedural knowledge. He discusses different variables found to affect the development of such knowledge including the role of distributed practice, specificity of practice, and corrective feedback, all of which are relevant to classroom practice. Ronald P. Leow and Celia C. Zamora (Chapter 3) focus on mechanisms of L2 processing and type of L2 learning especially in relation to incidental/intentional learning. They caution that the construct of learning should be treated carefully in order to understand L2 processes (incidental/implicit vs. intentional/explicit) in instructional settings. In Chapter 4, Marije Michel discusses the result of L2 learning—complexity, accuracy, and fluency (CAF) in L2 production. The author provides a survey of CAF research and connects the findings to classroom assessment; she also calls for research to investigate the role of L2 production in the acquisition process. Finally, in Chapter 5, Neomy Storch adds a social perspective to ISLA. Based on sociocultural theory, the author argues for the inclusion of such perspectives in order to further our understanding of L2 learning processes and to better help teachers make pedagogical decisions (e.g., corrective feedback and group work).

## Section II: Approaches to Second Language Instruction

This section explores different types of instruction that have been theoretically and empirically supported. In Chapter 6, Roy Lyster overviews a wide range of program types of content-based language teaching (CBLT) around the world. He makes a case for teaching language and content at the same time, with an emphasis on counterbalanced approaches to best assist the development of language skills in the classroom. Chapter 7 is devoted to task-based language teaching (TBLT). Rod Ellis first distinguishes TBLT from task-supported language teaching. He then shares practical suggestions as to what kinds of tasks to implement, how to implement them, and how to integrate tasks into a language curriculum. In Chapter 8, YouJin Kim summarizes research based on the interactionist perspective as a framework for ISLA. She offers suggestions as to how to enhance the effects of interaction, both between the teacher and learners and among learners, on L2 learning through corrective feedback, collaborative tasks, and learner training. James P. Lantolf and Xian Zhang (Chapter 9) discuss in detail a rather new pedagogical approach called concept-based language teaching. By reviewing sociocultural theory not only in relation to L2 education but to education in general, the authors introduce a Schema for the Orienting Basis of Action (SCOBA) for teaching a L2. In Chapter 10, Bill VanPatten provides a theoretical discussion of input processing and argues for processing instruction as a pedagogical intervention. He then suggests processing-oriented pedagogical interventions (POPIs) as a way of creating a mental representation of language based on input. Chapter 11 concerns a distinct yet important aspect of ISLA, that is, assessment. Ute Knoch and Susy Macqueen explain the concept of classroom-based assessment (CBA) and provide information pertaining to the timing and focus of assessment, as well as advice for individuals involved in the assessment process.

## Section III: Language and Instructed Second Language Acquisition

This section addresses the different aspects of language that are the target of L2 instruction. First, Hossein Nassaji (Chapter 12) tackles arguably the most-investigated target in ISLA, namely, grammar. In reviewing major types of instruction (e.g., explicit/implicit,

focus-on-form/focus-on-form, input-based/output-based), the author reveals how they differentially assist different types of L2 knowledge. In Chapter 13, Kathleen Bardovi-Harlig focuses on pragmatics—the how-to-say-what-to-whom-when aspects of language. The author succinctly summarizes the challenges in teaching pragmatics or including it in a L2 program and provides empirical evidence that should be applied to L2 instruction. Chapter 14 concerns another linguistic target: fluency. Tracey M. Derwing discusses not only the processing aspects of fluency (or dysfluency) but also its social impacts. After reviewing pertinent research, the author introduces a variety of classroom activities designed to help learners develop fluency. Yet another important target in ISLA is pronunciation. In Chapter 15, in addition to discussing acoustic and perceptual aspects of L2 pronunciation, Sara Kennedy and Pavel Trofimovich emphasize the importance of considering pedagogical norms (e.g., nativeness versus intelligibility). The authors share their pedagogical perspectives by including various elements related to instruction of pronunciation (e.g., outside-class learning, teacher cognition, and computer-aided teaching). Chapter 16 concerns acquisition of vocabulary knowledge. Beatriz González-Fernández and Norbert Schmitt first summarize the historical background of vocabulary research in order to substantiate current pedagogical practices. Through the chapter, the authors provide the reader with useful pedagogical suggestions to increase both intentional and incidental exposure to target words in the classroom. Finally, Charlene Polio and Jongbong Lee (Chapter 17) take a different way of looking at L2 production, namely, L2 writing and its effects on the development of L2 knowledge. They too provide pedagogical suggestions based on updated research, especially related to written corrective feedback.

## Section IV: Instructed Second Language Acquisition Learning Environments

This section acknowledges that ISLA is mediated by learning environments whereby target languages have different societal statuses and are learned differently due to different modes of communication. In Chapter 18, Yuko Goto Butler challenges some widely accepted ISLA norms (e.g., communicative competence, learner autonomy, and motivation) and argues that understanding L2 learning requires taking into account social/cultural perspectives, including the context in which the L2 is taught and learned. Focusing on Eastern Asian contexts, she proposes various contextually appropriate suggestions for L2 instruction. Another contextual variable that has been well investigated is study abroad. Carmen Pérez-Vidal (Chapter 19) discusses key differences between study abroad and study at home by focusing on contextual features (input and output opportunities), individuals' ability to make contact with the target language, and program features. She provides a useful list of program features that any language institute may want to consider for successful study abroad programs. In Chapter 20, Hayo Reinders and Glenn Stockwell overview the rapidly growing ISLA field of computer-assisted language learning (CALL). As technology develops and empirical findings from CALL research accumulate, the authors claim that CALL research can contribute to the development of SLA, as well as benefiting from it.

## Section V: Individual Differences and Instructed Second Language Acquisition

This section addresses some of the individual differences that have been found to mediate SLA processes and the effects of instruction. In Chapter 21, Patricia A. Duff addresses social dimensions in ISLA (e.g., race, class, gender, sexuality, educational background,

immigration status, and ethnicity). She argues that people's perceptions and biases of social differences ultimately influence the outcome of SLA, and she proposes some ideas for teachers to consider in order to avoid negative impacts based on learners' social differences. Chapter 22, on the other hand, focuses on cognitive individual differences (i.e., language aptitude and working memory). Shaofeng Li reviews research examining the relationships between cognitive individual differences and types of instruction (e.g., explicit/implicit). He emphasizes that it is important, although challenging, to match learner types and instructional approaches in the classroom. Kata Csizér (Chapter 23) reports on self-related models and dynamics system theory in order to understand L2 motivation. Importantly, the author makes a direct and convincing connection between motivation research and classroom practice. In Chapter 24, Jean-Marc Dewaele provides a general review of psychological dimensions of ISLA including the higher order personality traits (the Big Five). In particular, he focuses on foreign language anxiety (FLA) and discusses how dynamically FLA is related to a web of personality traits and states. Laura Gurzynski-Weiss (Chapter 25) provides a perspective and research findings related to a necessary yet underinvestigated component of ISLA, that is, the teacher. In conceptualizing instructor individual characteristics (e.g., teachers' native language(s), years of teaching experience, educational background, engagement with research, etc.), the author establishes the significance of the research in relation to ISLA. Yet another individual difference that has been found to affect ISLA significantly is age. Rhonda Oliver, Bich Nguyen, and Masatoshi Sato (Chapter 26) collect a number of ISLA studies focusing on child L2 learners. While admitting methodological challenges in working with children, the authors lay out key similarities and differences between child SLA and adult SLA, including the need to be mindful of how the development of children's general cognitive abilities may influence L2 acquisition. The section ends with the topic of heritage language acquisition written by Silvina Montrul and Melissa Bowles (Chapter 27). As with the other individual differences, instructed heritage language learning presents unique variables and pedagogical challenges. Drawing on cognitive, sociocultural, and political perspectives, the authors discuss some important pedagogical questions, such as whether to include L2 learners and heritage language learners in the same classroom.

### Section VI: Instructed Second Language Acquisition Research Methods

Finally, no academic discipline can advance without sound research. Consequently, this section attempts to capture the wide and developing range of research methods that are used in ISLA research. First, Luke Plonsky (Chapter 28) explains how important it is to increase objectivity, systematicity, and ease of analysis in advancing quantitative research, and he walks the reader through key decision-making points in conducting quantitative research. He also summarizes recent meta-analyses in ISLA. In contrast, qualitative methodology is explored by Peter I. De Costa, Lorena Valmori, and Ina Choi in Chapter 29. The authors proclaim that researching the mechanisms and conditions of L2 learning is insufficient to understand ISLA, and they propose that social dynamics (e.g., any semiotic resources available to learners in the classroom) need to be investigated. A series of exemplar studies helps the reader understand the nature and strengths of qualitative research methods. The following two chapters address the tension that exists concerning the validity of ISLA research. In Chapter 30, Alison Mackey reports on ISLA research conducted in the classroom setting. She succinctly summarizes data collection and analysis tools used in previous quasi-experimental studies and raises methodological challenges for classroom-based research. Kim McDonough

(Chapter 31), on the other hand, discusses research methodology and findings of common laboratory-based research, namely, structural priming, joint attention, and elicited imitation. The author calls for methodological rigor and validity in such experimental research methods, while acknowledging that a primary goal of such research is to inform classroom practice. The final chapter deals with research ethics, which is relevant and important for any type of research (Chapter 32). Susan Gass and Scott Sterling contend that following institutional guidelines (institutional review boards, or IRB) does not necessarily make a researcher ethical. On the contrary, researchers need to consider the possible consequences of their actions while conducting classroom studies. Particularly useful is the list of ethically focused scenarios that the reader can ponder. As the field of ISLA advances exponentially, ethical considerations are necessary to advance our research agenda.

### Intended Audience of the Handbook

This handbook is intended for researchers, graduate students, upper-level undergraduate students, teachers, and teacher-educators who are interested in L2 learning and teaching. For undergraduate and nonthesis graduate students, the handbook provides an overview of the current state of the field of ISLA. Each chapter provides updated literature, which gives the reader an understanding of recent developments. For thesis graduate students or researchers, the chapters serve as useful reference points due to the thorough coverage of pertinent studies. Also, as the experts share their personal positions on various topics, readers may be able to situate themselves in the cutting-edge theoretical discussion. In the same vein, the research methodology section (Section VI) and the Future Directions segments in each chapter are useful for readers who are looking for a new research project.

For teachers and teacher-educators, theoretical debates or even research findings are sometimes inconsequential. Rather, what is often helpful for them is a list of potential pedagogical practices that they can employ in their classrooms. The pedagogical implications sections in each chapter provide such information. Also, the Teaching Tips boxes offer the reader quick suggestions while skimming through the chapter. We would like to stress that, unlike language textbooks and other pedagogically oriented volumes, the suggestions are based on empirical evidence on which teachers can confidently base their pedagogical decisions. We believe that, with nearly 40 years of investigation, ISLA research can and should contribute substantially to the classroom, and we hope that teachers find the pedagogical perspectives in this handbook relevant and useful.

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## Section I

# Second Language Processes and Products

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