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THEORIES IN SECOND LANGUAGE ACQUISITION

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Book Review by

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Second Language Acquisition (SLA) has been one of the most studied areas in the field of applied linguistics for the past five decades since Selinker (1972) coined the term "interlanguage". SLA can provide frameworks and empirical methods to examine the process and impetus of the acquisition. (Taguchi 2019) Second language research is concerned with the general question: How are second languages learned? (Gass et al. 2020) As shown in many empirical research and field observations, there have been some shared patterns and features in learners' second language development, which requires researchers to put forward theories so that such patterns and features could be explained and understood. More important is that predictions on learners' performance in SLA could also be made based on these theories.

It is thus of such duly demand that the third edition of *Theories in Second Language Acquisition* was published. This renewed volume, edited by Bill VanPatten, Gregory D. Keating, and Stefanie Wulff, is a timely collection contributed by nineteen eminent authors introducing in total 10 contemporary mainstream theories and models from a linguistic, psycholinguistic, or cognitive perspective. First of all, several changes have been

made compared with the last edition. Early theories (former Chapter 2, behaviorism and Monitor Theory) were abridged and reassigned to Chapter 1. Complexity Theory (former Chapter 12) was changed into Complex Dynamic System Theory due to more recent development. And the comparison of 10 theories (former Chapter 13) was replaced by a more practical chapter demonstrating implications for instructed second language learning. Other than that, the volume maintains a similar structure, consisting of 12 chapters: a general introduction by the editors, ten extensively operationalized theories or frameworks, and one chapter of pedagogical implications drawn from theories discussed so far.

Chapter 1 opens with an illuminating discussion on the definition, necessity, and functions of linguistic theories in second language acquisition, followed by further clarification to distinguish theories from models and hypotheses. This chapter also lists 10 commonly observed phenomena in need of explanation from a theoretical standpoint, concerning the role of input, characteristics of output, and limited effect of frequency, native language, instruction, and production on L2 learning. Another reoccurring issue in the field of SLA, namely the debated relationship between

explicit and implicit learning and knowledge, also requires insights from theories in the following chapters. Besides, two early theories, behaviorism and Monitor Theory, are introduced in brief.

Chapter 2 regards the linguistic theory in second language research. Starting with the logic problem in child language acquisition, Lydia White gives a thorough discussion of linguistic competence and interlanguage competence. It is stated that the nature of second language acquisition centers around the principles and parameters of Universal Grammar, which can be made clear using island constraints and wh-movement as examples. Concerning evidence for linguistic theory and Universal Grammar, grammaticality judgment tasks, and truth-value judgment tasks are supposedly more appropriate in that such tasks indirectly tap learners' linguistic competence and intuitions. Furthermore, UG described in this chapter neither accounts for all aspects of language learning nor guarantee native-like success in L2 acquisition. Crosslinguistic influence also has a role to play in determining the outcome of second language learning. Results from an exemplary confirm the possibilities for UG parameter resetting and the influence of the UG principle on interlanguage grammar. According to UG theory, the initial parameter resetting is triggered by target language input, which is indubitably necessary but also insufficient in essence. Discrepancies between L2 learners' linguistic subsystems (syntax, morphology, and discourse) can also be explained by the psychological processing of meaning. Concerning the explicit and implicit debate, the UG theory takes a generative perspective on L2 acquisition, focusing on the learners' implicit knowledge. Implicit acquisition leads to unconscious linguistic competence and explicit learning results in learned linguistic knowledge. The interface between implicit and explicit knowledge is also denied by researchers working under the UG framework.

Chapter 3 takes a concept-oriented approach to second language acquisition. Kathleen Bardovi-Harlig presents an analytic framework, which identifies one specific concept at first and investigates its evolving expression. For example,

temporal concepts such as past or futurity can be encoded by six linguistic devices: tense, grammatical aspect, lexical aspect, temporal adverbials, temporal particles, and discourse principles. Several forms can be produced to express the same concept, known as the function-to-form mapping. Previous linguistic and cognitive experiences offer the semantic concepts L2 learners need for communication in another language. Learners make progress when the form they currently use failed to achieve the meaning intended and new forms are adopted to secure the transmission of information. The development of learners' second language is investigated by how the expression of a given concept changes. Evidence taken in such a framework includes mainly communicative language use and offline processing studies. Besides, longitudinal research design and communicative tasks in relatively natural situations are also commonly employed. However, difficulties for novice researchers in focusing primarily on form prevent this functionalist approach from common use. To further illustrate how such a framework can be utilized, Bardovi-Harlig describes an exemplary study in short, focusing on the concept of RORs (reverse-order reports) and its expressions. Although a framework is nothing like a theory, the concept-oriented approach considered in this chapter is still able to account for two observations from SLA. The predictable path of learners' speech production is the sequence from pragmatic to lexical, lexical to morphological expression of concepts. Instructions are limited when the communicational goals can be successfully attained without moving forward to the next level of expressive forms. As for the distinction between implicit and explicit knowledge, studies with a concept-oriented approach usually collect elicited narratives from untutored learners with low literacy skills, which consequently falls into the category of implicit knowledge.

Chapter 4 focuses on usage-based approaches to L2 acquisition. Nick Ellis and Stefanie Wulff start this chapter with two working hypotheses and major constructs of usage-based approaches. Central to such approaches is the idea of constructions, which can be understood as form-

meaning pairs, ranging from simple morphological markers to complex syntactic frames. Learning a language thus can be seen as learning a set of constructions, which depends heavily on the frequency and the manner of encounters. Methods used in usage-based approaches varied. Corpora and computational modeling are widely used in usage-based studies. Common misconceptions concerning usage-based approaches revolve around the overly stressed effects of frequency. To defend the theory, Ellis and Wulff confirm the fundamental role of frequency, but also make clear that it is only of several factors determining the process and outcome of language learning. The joint effect of frequency, prototypicality, and contingency on L2 construction learning is investigated by an exemplary study, showing that each factor influences learners' form-meaning association differently. This chapter also offers several explanations of some observed phenomena in SLA. For example, the necessity and limits of input can be explained by the associative learning of constructions from input and prototype effects. Usage-based approaches also provide a refreshing view on the role of explicit and implicit learning, maintaining that language learning is initially explicit learning with symbols and shifts to implicit learning where learners come to understand the associations between symbols and meaning.

Chapter 5 is devoted to the Skill Acquisition Theory by Robert DeKeyser. Language learning, whether first or second, is said to be a developmental process from the initial representation of knowledge through consciously repeated practice to eventual skilled behavior. The main constructs of the theory include three stages of development, namely declarative, procedural, and automatic, as Anderson put it. Proceduralization and automatization connect these stages and transform knowledge from one stage to the next. Another central concept mentioned is the power law of learning, which mathematically formalizes the interrelationship between reaction time, error rate, and practice. Direct evidence, such as reaction times and error rates gleaned from production tasks, indirect simulation research based on computational program and neurological data

collected from a cognitive perspective are widely used in skill acquisition studies. An exemplary study of Skill Acquisition Theory demonstrates how different procedural knowledge develops from the same declarative knowledge using tone in Mandarin Chinese as the target, showing a robust effect of practice. Like many major theories in the field, Skill Acquisition Theory does not attempt to account for everything about SLA, nor does it contradict with other theoretical frameworks. However, the limited effect of frequency, instruction, and production on L2 learning and variable outcome of L2 learning are largely stemmed from the predetermined pattern of development from declarative through procedural to automatic stages. The crux of implicit and explicit learning and knowledge is resolved by Skill Acquisition Theory in that albeit a clear distinction between declarative and procedural knowledge, there is a synergy between two types of knowledge where implicit learning and explicit learning work in collaboration.

Chapter 6 elaborates on Input Processing in second language research. Bill VanPatten, using the mapping of pastness as an example, demonstrates how Input Processing takes part in language learning. It is stated that the processing of input includes making form-meaning connections and computation of syntactic structures. The author also discusses two typical research designs for data collection in favor of Input Processing, namely sentence interpretation tasks and eye-tracking studies. Several misunderstandings of Input Processing are as well addressed in detail. The author explains that Input Processing is neither a model nor a theory of acquisition. Instead, it is devoted to, and only to the way learners connect forms and meanings. Differentiation is also made between processing and noticing in terms of consciousness. As for pedagogical implication drawn from Input Processing, the author gives an exemplary study, which focuses on the processing of the First-noun principle in real-time. According to the author, input in Input Processing is of great importance to learning in that language acquisition is a byproduct of language comprehension, which also indicates the variability in language development. The frequency of the input, however,

is presumably less important because it does not necessarily facilitate learners' processing of input. Concerning the explicit and implicit distinction, the author takes a neutral stand on whether adults learn language explicitly or implicitly, despite the emerging claims that language processing happens largely automatically and that explicit information is rarely involved.

Chapter 7 covers the Declarative/Procedural model from a neurobiological perspective. Michael T. Ullman begins the chapter with an introduction of the brain structures, followed by an overview of the declarative and procedural system for learning and memory. The author also offers several predictions for L1 and L2 grammar learning based on two separated system and their combined effects. Discrepancies between L1 and L2 grammar learning result from different language exposure, learners' unique experiences, and so on. As for the evidence used to test the Declarative/Procedural model, the author lists four types of evidence commonly used, including behavioral evidence, neurological evidence, electrophysiological evidence, and functional neuroimaging evidence. However, the author points out that no single methodology is flawless and that converging evidence is more preferable in testing the Declarative/Procedural model. The author then addresses two misconceptions about the model, concerning the domain generality and knowledge transformability of two systems. An exemplary study using artificial grammar and ERPs to investigate syntactic word order and morphosyntactic gender agreement is given, showing better results from implicit training over explicit trains at L1 processing and retention testing. According to the author, greater implicit exposure is supposed to facilitate grammar learning along with multiple biological and linguistic factors, which accounts for the necessity of certain input types and the variability of outcome. About the explicit and implicit debate, it is made clear that the seeming parallel relationship between explicit/implicit and declarative/procedural only serves right in part. The distinction between explicit and implicit is about awareness, while the dichotomy between the declarative and procedural system is about neurological structure.

Chapter 8 by Manfred Pienemann and Anke Lenzen concerns Processability Theory. The authors propose that learners can only understand and produce linguistic forms that can be handled by their language processor, underling the fact that the staged development of language follows a developmental trajectory determined by a universal processability hierarchy, which determines the predictable path for second language development. While the processability hierarchy is described as the sequence in which the fundamental design of language processor develops in L2 acquisition, variances created by the interaction between the processability hierarchy and the leeway it generates is defined as Hypothesis Space, which accounts for the variability of learners' production. The authors also discuss the transfer of grammatical information and feature unification, followed by a detailed account of Lexical-Functional Grammar. As for the evidence supporting Processability Theory, longitudinal or cross-sectional study with a large set of naturalistic or elicited speech data from a relevant corpus is deemed as suitable. Besides, reaction time and sentence-picture matching results also constitute valid tests of Processability Theory. Concerning the misunderstanding about Processability Theory, the authors explain that due to the unique grammar of an individual language, instead of the developmental trajectories found in current studies, only the fundamental principles of Processability Theory can be applied to a new target language. An exemplary study by Kawaguchi is given to exemplify how to apply Processability Theory to the acquisition of Japanese as a second language. As noted above, the predictable path and variable outcome can be accounted for easily, as well as the limits of input frequency, learners' first language, the instruction received and production on second language acquisition. Although Processability Theory does not directly tackle the explicit and implicit debate, the author considers that implicit knowledge and explicit knowledge are responsible for processing and monitoring respectively, and that interface between two types of knowledge is rather constrained.

Chapter 9 offers an integrated discussion on input, interaction, and output in second language

acquisition, which is referred to as the interaction approach by Susan M. Gass and Alison Mackey. Input, as noted by the author, provides crucial evidence for learners to form a linguistic hypothesis. Interaction sets out to provide information about the correctness and incorrectness of learners' speech. The output is said to reinforce learners' syntactic use of language. The roles of feedback, language-based episodes, and attention are also investigated by the authors. Appropriate methods for interaction approach include longitudinal designs, cross-sectional designs, and case studies. A range of carefully planned tasks and designs with pretests, posttests, and retrospective sessions are recommended. Two common misconceptions are addressed by the authors. As indicated by itself, the interaction approach is primarily about the role of input, interaction, and output in language learning. Classroom application of interaction approach is also unintended according to the authors. An exemplary study investigating learners' perception and use of feedback in two modes is discussed in brief, showing that lexical and semantic feedback are more easily to be accurately perceived by learners than morphosyntactic and phonological feedback. As many models mentioned in previous chapters, the interaction approach also makes no claims about explicit and implicit learning and knowledge. However, feedback can be categorized as implicit and explicit feedback.

Chapter 10 by James Lantolf, Matthew Poehner, and Steven Thorne deal with Sociocultural theory, which lays great emphasis on mediation and influence from cultural artifacts, activities, and concepts. Constructs such as mediation, private speech, internalization, regulation, and zone of proximal development are discussed in this chapter. The authors also introduce the genetic method, in which the development of individuals, groups, and processes is traced over time. Grounded in the genetic method, the sociocultural approach to second language acquisition research usually adopts an assessment framework called DA, where a variety of L2 populations and language features is focused on by such a method. Regarding common misconceptions about Sociocultural Theory, the authors specifically address two misbeliefs about

ZPD, distinguishing it from scaffolding and Krashen's notion of $i+1$. Unlike scaffolding, ZPD is primarily concerned with the quality and mediation negotiated between novice and expert. ZPD also differs from Krashen's $i+1$ in that while Krashen's $i+1$ focuses on language and language acquisition device per se, ZPD involves the dialogic relationship between interlocutors. The authors then present an exemplary study by Kim and Lantolf respecting the classroom instruction of sarcasm in ESL with a Sociocultural approach. As for observed phenomena in SLA, Sociocultural theory mainly accounts for the role of input and output, predictable development path, and variable outcome in linguistic systems. Besides, the authors further acknowledge the explicit/implicit distinction by offering a dichotomy relationship between spontaneous concepts, a largely non-conscious knowledge stemmed from everyday activities, and scientific concepts, a primarily learned knowledge through intentional and systematic formal instruction.

Chapter 11 by Diane Larson-Freeman expatiates on Complex Dynamic Systems Theory (CDST). Originated from Complex Theory, CDST combines basic principles from its precursor and Dynamic Systems Theory, dedicating to the L2 development. According to the author, CDST seeks to explain the working of emergent, complex, interrelated, dynamic, self-organizing, context-dependent, open, adaptive, and nonlinear systems in language use and development. Albeit at different timescales, online processing and changes in linguistic structure or development serve as vivid manifestations of a complex dynamic system. The author further illustrates the dynamic system using statistical preemption as an example, which suggests the possibility of constructions heard can statistically preempt the constructions expected. In addition to neurological images and corpora data, other evidence obtained from longitudinal case studies and simplex systems in educational contexts are also of high value. As for possible confusion about CDST, the author points out that although the genesis of the theory lies in physical science, ample research has proved its applicability in language studies. The author also explains that a "complex" system does not entail "complicated". As an

exemplary study, Lowie and Verspoor (2019) investigate the role of motivation and aptitude at a group level and in a longitudinal case study. Several findings in second language acquisition are well accounted for using Complex Dynamic Systems Theory. It is noted that learners know more than they have been exposed to due to the initial state of L2 learning and the creativity of L2 learners. The predictable paths of a given structure are the result of the frequency and salience of certain patterns. The author also confirms the existence of implicit learning.

Chapter 12 concludes the volume by offering a pedagogical comment on theories in second language acquisition. Bill VanPatten starts this chapter through a quick summary of Chapter one, recapitulating what theories are and what theories do. Then the author offers some basic ideas about language teaching, especially the purposes of current theoretical development and language teaching. Finally, drew from Lighthown's basic views on expectation, the author provides several facts concerning language acquisition and suggestions made from these facts.

On the whole, this updated edition characterized 10 contemporary theories in second language acquisition and a practical discussion on second language instruction. Several features are prominent through the volume. Firstly, chapters on theories are organized the same way, starting with the theory itself and its main constructs, followed by evidence for the theory, common misunderstandings and a summary of an exemplary study. Next are observed phenomena accountable in each theory and concluding thoughts on explicit/implicit distinction. Such an arrangement makes a comparison between theories easier for scholars and the volume more accessible to novice readers. Secondly, specific attention is given to the explicit and implicit debate, which has been of concern and controversy for a long time and can be extended to many facets of language learning and teaching. Independent sections on such distinction are thus included in each theory. Finally, each chapter is followed by several research questions and suggested reading, which provides further

research directions for scholars and students who intend to conduct relevant studies.

However, there are also limitations on this current volume. To begin with, due to characteristics of the theory, some author does not strictly follow the intended structure of the volume, or deal with the topics in a sufficient way, leaving certain questions unanswered. Besides, unlike the second edition, the third edition of this volume failed to compare different theories in terms of methodological methods or the explicit and implicit debate, which may result from the various focuses of different theories. However, there are indeed shared opinions among these theories, which are comparable at least to some degree. Moreover, ten theories listed in the volume emphasize different aspects of second language learning, lacking an integrated view on the complementary job for each theory. Also, not all chapters included in this volume are devoted to a theory. More frequently are models or approaches relevant to second language acquisition loosely arranged in a thematic manner. Last but not the least, as noted by the editors in Chapter 1, this volume only takes into consideration theories from a linguistic, psycholinguistic, or cognitive perspective, deliberately leaving out alternate approaches, despite the emerging dominance of social perspectives.

That said, this volume remains an accessible and comprehensive collection of theories in second language acquisition, offering basic components and principles of each theory. Readers who are interested in learning about SLA and novice researchers who are inclined to conduct relevant studies, and teachers who are struggling with pedagogical obstruction can all gain significant support from this volume.

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Auto biography of the author: Junwei Zhao (1997-), male, postgraduate student in the College of Foreign Languages, Ocean University of China, mainly focuses on second language pragmatics and second language acquisition research.
