

1 Cognitive Linguistics and Second Language Acquisition

1.1 Introduction

Cognitive linguistics (CL) emerged as a field of study during the 1970s and 1980s and has changed our understanding of the nature of language itself and how language is learned. Opposing the Chomskyan paradigm, which considers language as modular or separate from other cognitive capacities, CL takes a holistic approach that perceives language as an integral part of human cognition, inseparable from meaning and function, and grounded in embodied experience (Geeraerts & Cuyckens, 2007; Langacker, 2008; Lakoff, 1991; Talmy, 2000; Tyler, 2012). Despite the popularity of CL approaches in first-(L1) and second-language (L2) research, successful applications of CL concepts and theories for L2 instruction remain limited. Some CL concepts often appear inaccessible for L2 instructors and learners who do not have prior CL training and background knowledge. In writing this book, our aim is to introduce in a comprehensive manner a variety of CL concepts that can aid in the analysis of Chinese, while illustrating how CL insights can help inform L2 Chinese teaching and learning, so that CL can be incorporated into the classroom in understandable and applicable ways.

The nine chapters in this book cover the most prominent and fundamental topics in CL, including construal, categorization, iconicity and image schemas, metaphor and metonymy, polysemy, as well as embodied cognition and mental stimulation. After introducing each of these topics and reviewing the corresponding findings from CL research, each chapter offers pedagogical examples to illustrate how the CL concepts can effectively scaffold the learning of L2 Chinese in the classroom. Each chapter also points toward areas and issues that await future research and includes “Time to Think” and “Time to Do” exercises that encourage readers to extend their newly acquired CL knowledge to investigate other linguistic phenomena. For instructors that choose this as a textbook for courses in Chinese language or pedagogy, the “Time to Think” and “Time to Do” exercises can be adopted as in-class activities for group discussion or as homework assignments. Answer keys are provided for these

exercises to facilitate the discussion and study. Each chapter concludes with “Points to Remember,” summarizing key ideas.

The accessible yet thorough coverage of CL findings in this book allows it to serve not only as an effective textbook for an undergraduate Chinese linguistics class or a graduate seminar on language teacher training, but also as a reference companion for readers interested in learning more about the Chinese language or catching up with the advances in CL. With sample lesson plans and classroom-ready activities, this book shows language teachers how to use CL-based approaches to explain and teach a wide range of linguistic phenomena to their students. L1 and L2 researchers will gain new insights from summaries of recent advances in the field, comprehensive analyses of Chinese language phenomena, and proposed areas for future research. Notably, Chapter 8 presents a previously unpublished study showing the effectiveness of CL-based instructional methods in teaching the subtle distinctions inherent in the grammar and usage of Chinese modal verbs. Last but not least, L2 learners of Chinese at all proficiency levels will benefit from the book’s thorough linguistic analyses, open-ended exercises, and topics for further exploration that inform their own contrastive analyses between English and Chinese, their understanding of how the Chinese language works, and their development of metalinguistic skills as L2 Chinese speakers.

1.2 What is Cognitive Linguistics?

CL is “the study of the mind through language and the study of language as a cognitive function” (Bergen, 2006). As Lakoff (1991, p. 54) puts it, CL is defined by the cognitive commitment, namely, “the commitment to make one’s account of human language accord with what is generally known about the mind and brain from disciplines other than linguistics.” The CL approach embraces a wide range of research methods and constantly enriches itself based on new empirical results across a range of disciplines including linguistics and applied linguistics, cognitive and developmental psychology, anthropology, and neurobiology. The theoretical foundations of CL are based on the following principles:

- CL upholds that language is part of the human cognition system. A language user resorts to general cognitive resources such as memory, categorization, attention, planning, problem-solving abilities, and general knowledge when using and learning a language (Croft & Cruse, 2004; Langacker, 2008; Lakoff, 1991; Talmy, 2000). Opposing Chomsky’s (1965; 1981; 1995) modular view of language and his pursuit of Universal Grammar and reducing differences across languages as parametric variation, CL advocates that there is no separate or autonomous cognitive module specifically responsible for language processing and language acquisition.

- “Meaning is central to the shape of language and guides its acquisition” (Ortega et al., 2016). Grammar, like lexical items, is meaningful (Langacker, 2008). Linguistic representation of meaning is conceptual in nature, indirectly reflecting the “real world” as mediated by embodied human experience and perception (Tyler & Evans, 2003).
- Language is grounded in usage and built on pairings of form and meaning that are established through real-world experiences. Form–meaning pairings at all levels of linguistic structure (including morphemes, words, grammatical structures, and discourse patterns) all emerge from actual language use in contexts. A language user learns language through input and functional interaction and considers the physical, social, cultural, and linguistic context when comprehending a novel expression (Croft & Cruse, 2004; Evans & Green, 2006; Geeraerts & Cuyckens, 2007; Goldberg, 1995; Langacker, 2008; Lakoff, 1991; Lieven & Tomasello, 2008; Tomasello, 2003; Tyler, 2012).

The goals of CL, therefore, are to study how general cognitive mechanisms are reflected in language and to explain all sorts of linguistic phenomena in a holistic manner, based on psychologically and empirically viable evidence.

1.3 Applying Cognitive Linguistics to L2 Teaching and Learning

CL insights have been successfully adapted to support L2 teaching and learning in areas such as semantics of English prepositions (Tyler & Evans, 2004; Tyler, 2012), influence of L1 motion event construal on L2 acquisition (Cadierno, 2004; 2008; Wu, 2011; 2016a; Wu, Nunome, & Wang, 2022), and metaphorical or idiomatic language (e.g., Littlemore, 2001; Littlemore & Low, 2006). We see CL as a highly valuable resource for L2 classroom instruction, and compatible with current L2 theories, for the following reasons:

- The CL view of language as part of human cognition reveals the nature and developmental path needed for successful L2 learning. CL insights can be incorporated into the classroom through explicit instruction (Achard, 2018). Learners, especially adult learners who have fully developed general cognitive capacities, should be encouraged and guided to use their existing cognitive skills to analyze the L2 input, to connect meaning and form, and to notice the grammatical constructions and patterns in the target language. Improvement in complexity, accuracy, and fluency in an L2 requires learners not only to be able to notice similarities and differences between the target language system and their existing language(s) but also to make conscious comparisons between their production and the target language input (Schmidt, 2010). The metalinguistic awareness gained through explicit CL instructional methods can prompt L2 learners to become more cognizant of

and responsible for their own learning and to develop feasible learning goals and strategies for themselves.

- Drawing upon learners' everyday real-world experiences, CL explanations of linguistic phenomena tap into an intuitive reservoir of knowledge and thus promote learning (Verspoor & Tyler, 2009). As our experiences with the world are crucial in forming patterns of conceptualization and communication, representations of conceptual-linguistic meaning, such as carefully constructed diagrams, have become a staple in applied CL and have been proven to facilitate L2 learning successfully (Tyler & Huang, 2018).
- The usage-based view of CL naturally aligns with L2 approaches such as focus on form (Long, 2000), noticing (Schmidt, 1993; 2010), consciousness raising (Eckerth, 2008; Sharwood Smith, 1981), and task-based language teaching (Ellis, 2003). That is, learners benefit from exemplars of form–meaning pairings, communicative tasks, and ample exposure and practice to functionally use the L2 input and develop fluency and automaticity.

However, it is worth noting that many of the existing CL-based pedagogical proposals have not yet been empirically tested (Jacobsen, 2018). Applications of CL theories to L2 instruction remain limited so far, especially in the field of L2 Chinese pedagogy. As noted by Tyler (2008), a major step needed to improve applied CL research is to provide accessible and precise explanations to instructional practitioners, outside of the CL laboratory, who may not have prior CL training and background knowledge. This book, therefore, intends to address these challenges by focusing on how key CL theories can be used to analyze the Chinese language and to advance L2 Chinese teaching and learning.

1.4 An Overview of the Chapters

Before diving into each of these topics, let's start with an overview of the main chapters.

Chapter 2 introduces the concept of construal. It explains how identical objects or real-world events can be perceived and described differently by multiple speakers, due to differences in individual speakers' perspectives, the impact of culture as a lens on cognition, and the linguistic options available in a language. Linguistic choices reflect how the same objective event can be construed differently, based on the speaker's subjective beliefs or attitudes toward the situation (Traugott, 1989; 1995). In Chinese, for example, when a speaker wants to highlight that an object is being adversely affected by the agent of the action, one would use the passive 被 *bèi* construction. When one wants to underscore the agent's impact on the object, one would use the 把 *bǎ* construction. Moreover, the language one grows up speaking can prompt one

to become accustomed to particular concepts, syntactic frames, and rhetorical styles of the language when constructing utterances, a process referred to as L1 entrenchment (Langacker, 1987; Schmid, 2007; 2017). Slobin (1987; 1996) coined the special form of thought developed when one is constructing speech in one's native language as "thinking for speaking." For instance, although Chinese shares similar concepts of time as English, associating time and space so that front and back can refer to temporal relationships, Chinese also exhibits a tendency to construct time vertically, in which the past is up and the future is down. Systematic crosslinguistic differences can also be found in descriptions of motion events across world languages. Learning to express time and motion in L2 Chinese often entails adjustment to new perspectives that are not articulated in a learner's native language. L2 Chinese speakers therefore need ample opportunities to use the L2 functionally before they can develop L2-specific ways of thinking-for-speaking patterns.

Chapter 3 introduces another cognitive mechanism called categorization. Categorization is an automatic and unconscious cognitive process that enables our limited cognitive capacities to understand and organize information, make predictions, and respond to new situations (Ellis & Wulff, 2020; Goldstone, Kersten, & Carvalho, 2003; Lakoff, 1987). Our minds develop concepts or "mental representations of categories of objects" based on our experiences of the world. Different members of a given conceptual category have different statuses. Members that match a category's prototypical concept are regarded as more central and representative. For example, for many speakers of North American English, *sparrow* is a more central or prototypical member within the broader category of birds, while *ostrich* is a less central member. Members sharing fewer similarities with the prototype may fall outside the fuzzy boundaries of a category, such as *bat*, which is proximal to but not quite within the bird category. Notable crosslinguistic variation can be found in conceptual categories. Such variation can be manifested in morphemes, words, grammar, phonology, and other levels of linguistic structure. The theory of linguistic relativism suggests that linguistic categories may implicitly affect how we categorize objects and events. Consequently, learning L2-specific categories generally entails a certain degree of conceptual recategorization. This chapter discusses how words in different languages can have varying semantic boundaries to delineate space and action. Established L1 semantic systems may block the creation of L2 meanings that are similar to or intersect with the existing L1 systems, resulting in weak links between L2 words and new concepts (Jiang, 2000; 2002). In the same vein, an L2 sound tends to be perceived and categorized as a good, acceptable, or poor instance of an L1 phonetic category (Best & Tyler, 2007; Tyler, 2019). CL-based pedagogical suggestions are offered to address L1–L2 categorical issues at lexical, phonological, and syntactic levels.

Chapter 4 looks at the concepts of iconicity and image schemas. Iconicity refers to a phenomenon that illustrates natural resemblance between language and concepts and demonstrates direct correspondence between the linguistic form and the meaning to be conveyed. For instance, we tend to state daily activities based on the temporal sequence of their actual occurrence. And linguistic distance often corresponds to conceptual distance. We use longer utterances iconic of “distance” to show politeness when talking to new acquaintances. Image schemas, as the bridge between sensorimotor experience and concepts, are the preconceptual structures derived from our sensorimotor experiences, through which we can structure abstract concepts and carry out inferences. Taking the VERTICALITY schema as an example, it is derived from our shared bodily experiences of standing up, rising, falling down, and seeing things that go up and must come down. The VERTICALITY schema is the basis behind the abstract concepts of *above*, *higher*, or *more* (Johnson, 1987). It helps us make sense of expressions like “*The housing price has gone higher this year*” or “*Our stocking is up this month.*” This chapter discusses through a variety of examples how iconicity and image schemas can be useful in facilitating language learning.

Chapter 5 delves into metaphor and metonymy. Metaphor exists as a collection of mappings between source and target conceptual domains, and the relationships established by these mappings are licensed by systematic similarities between entities in the conceptual domains. When we say, “*he needs to blow off some steam*” or “*she made my blood boil,*” we use our physical experience of boiling water to express the abstract emotion of anger (Lakoff, 1987). Metonymy functions within a single conceptual domain and establishes a mapping between two parts of that domain on the basis of physical or functional adjacency. For example, metonymy enables the use of the term *White House* to refer to the executive branch of the US government, and the name of the national capital *Beijing* to refer to China. Metaphor and metonymy are so pervasive in language that we often are not conscious of the extent to which these mappings structure our thought (Lakoff & Johnson, 1980; 1999). This chapter compares patterns of metaphor and metonymy available in English and Chinese while drawing readers’ attention to culturally specific Chinese concepts, such as the traditional medical and cosmological system of the five elements 五行 *wǔxíng*. It also illustrates how metonymy functions as a basis for character formation in Chinese and suggests how metaphor and metonymy can be incorporated into L2 Chinese classrooms.

Chapter 6 focuses on polysemy, a common linguistic phenomenon in which a single form is associated with two or more distinct but related senses, as shown in the relatedness of baseball *cap* and pen *cap*. Polysemy is different from homonymy, like baseball *bat* and mammal *bat*, in which the different senses linked with a linguistic form are unrelated. Polysemy is a result of

meaning extension, which can be triggered by mechanisms such as metaphorical mappings, experiential correlation, or inference. The principled polysemy model proposed by Tyler and Evans (2003) posits that the distinct senses associated with a particular lexical form are related to each other in a systematic and motivated way and are organized around a central or primary sense. Because polysemy is pervasive, the fact that many words have a large number of different senses magnifies the challenge of vocabulary learning. The chapter advocates for L2 instructional approaches that introduce the different senses of a word not in a piecemeal fashion but as a sequence of related meanings starting from the primary sense and continuing to extended senses. Different CL-based pedagogical methods and tasks are presented to showcase how to enable learners to attend to the systematic relationships that exist among the various senses of a lexical form.

Chapter 7 discusses the theory of simulation semantics, which claims that people spontaneously create mental simulations of the objects and actions expressed in language as part of the cognitive processes involved in language comprehension and production. When hearing a sentence like, “*He kicked the ball, and it bounced off a tree into the pond,*” our brain subconsciously uses the same neural assemblies that are involved in physically moving a leg to kick and watching an object move, while it also accesses experientially based memories that function as schematic representations of balls, trees, and ponds. Empirical findings from neuroscience on the specifics of neural activity during language comprehension lend support to the simulation semantics hypothesis. People who read verbs that refer to specific actions involving the tongue, hands, or legs (e.g., *lick, pick, kick*) had increased blood flow – indicative of neural activity – in the motor and premotor cortex areas of the brain (Hauk, Johnsrude, & Pulvermüller, 2004). That is, semantic understanding of language is produced, not in one language-specific part of the brain, but through coherent assemblies of activated neurons that span various regions of the brain. This provides strong evidence for the CL view that language exists through intricate interactions with general cognitive mechanisms. CL studies further demonstrate how mental simulation is involved in comprehension of abstract and metaphorical language and how mental simulation can be shaped by syntactic structures, and preliminary research has been done to tease apart how mental simulation differs for L1 versus L2 comprehension. The chapter suggests ways in which new understandings of embodied cognition can inform the teaching and learning of Chinese in the classroom.

Chapter 8 presents a new empirical study to illustrate how CL insights can help guide L2 teaching and learning of Chinese modal verbs. It offers a study that compared the effectiveness of a newly designed CL-based instructional method with that of the traditional instruction used in a mainstream Chinese textbook in the United States. The proposed CL-based instruction taps

learners' analytical abilities to see connections between the root and extended meanings of modal verbs as well as the subtle distinctions among them. The chapter suggests sample focus-on-form communicative tasks that simulate real-life scenarios. By following up these tasks with CL-based explicit explanation, teachers of Chinese can ensure long-term retention and automation in L2 acquisition of modal verbs.

Chapter 9 presents concluding remarks that synthesize the discussions and highlight strategies for invigorating the application of CL in Chinese studies.

In sum, *Cognitive Linguistics and Second Language Acquisition of Chinese: Theories and Applications* is a book that combines recent theoretical and applied research findings with a pedagogical focus on the teaching and learning of L2 Chinese. We hope to engage our readers to think about and explore the Chinese language, and other languages, from new perspectives.