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# 心理语言学

Psycholinguistics

刘利民 编著

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## 内 容 提 要

心理语言学是 20 世纪 50 年代问世的新兴交叉学科,主要对象是人类语言的心理过程。在西方发达国家,心理语言学是心理和语言专业的必修课程。本书作为心理学和语言学专业著作,比较系统地阐述了心理语言学领域中的基础理论和研究,包括语言的生理基础,语言理解和产生的心理过程,第一语言习得和第二语言学习,语言与思维的关系等。本书内容较新,既体现了国外的最新研究动向,也大量综合了国内学者自心理语言学于 80 年代初引进中国以来的研究成果。在不少问题上,本书综合了作者本人的研究,提出了自己的观点。

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# 序

人是怎样学会说话的？为什么只有人类才能掌握和运用语言？人类语言的产生过程及其实质是什么？自古代东西方的哲人到今天的哲学家、心理学家、语言学家等都无不对这一系列问题表现出极大的兴趣，而且一直在孜孜不倦地寻求其答案。虽然限于目前的认识程度和科学技术发展水平，人们还未能取得对这些问题的最终解答，但是，在漫长的探索过程中，尤其是进入 20 世纪以后，在这方面的研究上已经有了不少实质性的突破和可观的成果，其集中体现就是诞生于 50 年代的心理语言学及随后从中衍生出的神经语言学等相关学科。

作为一门新兴交叉学科，心理语言学以心理学和语言学的基本理论为基础，采用心理学的研究方法，对语言与心理活动之间的关系进行研究，以揭示言语生成、语言习得、言语思维、言语理解等过程中的心理活动规律。它的研究成果不仅有着重大的理论意义，而且也有广泛的实用价值，特别是适应了当前迅猛发展的信息科学和计算机科学的迫切需要，并为信息科学的进一步发展，即人工智能的开发奠定理论基础。

心理语言学自问世以来就一直在学术领域中居重要地位。专著和专题性文章层出不穷，各种规模的学术会议不断召开。在欧美的许多高等学校中心理语言学已被列入哲学、心理学、社会学、人类学、语言学、教育学、计算机科学、神经医学等专业的基础理论学科。在我国，虽然引入较迟，学者们在介绍国外心理语言学的理

论和成果的同时,也结合汉语研究,出了相当的成果,提出了一些独到的见解。然而到目前为止,我国学者的成果大都见诸零碎于学术刊物,尚未被有机地融入心理语言学研究体系之中。

现在,摆在我们面前的,由刘利民教授用英语精心撰写的这部《心理语言学》,可以说是为上述现象划上了句号的一种努力,为我国的心理语言学研究呈上了整合了我国学者主要成果的一部专业著作。本书的特点之一是内容全面、系统性强,涵括了语言的生理基础、语言理解和产生的心理过程、语言习得和学习、语言与思维的关系等现代心理语言学的基础理论和研究;特点之二是取材新颖,既介绍了至90年代的国外研究成果,也汇集了国内学者及作者本人的最新成果和真知灼见,实为深入浅出之佳作。是为序。

周光亚 石 坚

2000年1月

于四川大学外国语学院

# 编者的话

心理语言学作为人类语言探索的最新科学努力诞生于 20 世纪 50 年代。与其他语言科学探索不同的是,心理语言学认准了没有心理便没有语言的道理,将人类语言的心理过程和机制作为其研究的对象。具体地说,这门学科针对人类语言最重要的三大问题展开研究:1)人的语言行为能力是如何获得的,2)语言理解的心理过程和机制是什么,3)语言产生的心理过程和机制是什么。这三大问题无疑既是关于语言的古老的问题,也是当代科学迫切要求回答的问题,但同时又是非常难以回答的问题。这些问题的任何突破性进展都会对人类认识世界及自身的科研活动以及一切与语言有关的应用领域产生重大的影响和有利的推动。

正是由于其重大的理论和实践价值,心理语言学自诞生以来,备受重视,在发达国家已经成为重要的基础理论学科,迄今已取得了可观的科研成果。由于历史原因,心理语言学迟至 80 年代才逐渐被引入我国。到目前为止,该学科在我国也仅处于“初级阶段”,有关的学术著作不多,就作者所知,仅有朱曼殊、缪小春主编的《心理语言学》(1990)、桂诗春主编的《心理语言学》(1985)和《实验心理语言学纲要》(1991)、以及彭聃林、谭力海主编的《语言心理学》(1991)等。

本书写作的最初动机是为英语语言学专业及广义的语言学研究生准备一本系统的心理语言学教材。但在初稿试用过程中,学生们纷纷提出了不少有关汉语使用以及能否将汉语研究成果融会

于整个心理语言学学科体系的问题。这些问题迫使作者本人进行比较深入的思考和研究,最后形成了本书的内容结构。心理语言学本身在我国还很稚嫩,因此本书大量的内容仍然取自国外的研究成果。目前所能做的也只能是借鉴国外的成果,取他山之石以攻己之玉。但我国研究者经过不懈的努力也确实在基于汉语语言的研究中取得的不少成果,其中不乏独到的见解,因此本书中尽可能地综合了我国学者的研究,其中包括作者本人近十年的相关研究和思考。著书本旨在立说,然而当代科学之中任何一说都不可能凭空而立,都必须也只能建立在他人思想和成果的基础之上。故,本书作者绝不妄称此为一家之言,但望以己一孔之见,将分散的研究系统地整合于一体并由此构成一个新的视角,使读者有一点新的收获,或引发新的探讨和争鸣。

本书愿为引玉之砖。这并不是客套,而是事实。任何科技书籍都不能指望完美,更何况是心理语言学这样的年轻科学领域。虽然经历了几十年的发展,前述的心理语言学三大问题却一个也没有得到哪怕是相对完整的回答。从这个意义上说,本书不可能没有缺陷甚至失误,诚望读者斧正。

本书的出版得到了四川大学研究生教材建设基金的资助,川大外语学院领导及同事的关怀和指导,以及川大出版社的协助,谨此一并致以诚挚感谢。

刘利民

2000年1月

于四川大学外国语学院

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# CHAPTER 1

## INTRODUCTION

### Language and Speech

Wings are to birds what language is to humans. As one of their defining features and their principal means of communication, language enables humans to exchange ideas, share experiences and impart knowledge, thus making possible progresses in science, technology, literature, art, religion, politics, and other dimensions of civilization. Language ability is so natural among us humans that we take it for granted. We may speak a language expertly without any knowledge about its structures and the rules that govern the use of it. Few, except scholars of language, pause to think about the questions of what language is and how we are able to speak and understand it. However, it is exactly because of its unique importance that language merits in-depth and insightful studies. As N. Chomsky (1972) has pointed out: “When we study human language, we are approaching what some might call the ‘human essence,’ the distinctive qualities of mind that are, as far as we know, unique to man.” It is no wonder then that language is taken as the object for study in quite a few subject areas, such as linguistics, psychology, sociology, neurology, and even computer science.

## **I. Language as a system of symbols**

What is language then? Linguistics defines language as a system of phonological and grammatical symbols and the rules and structures of combining these symbols together to convey certain meanings.

Language is primarily materialized in speech sounds. Human vocal organs can produce a wide variety of sounds, but only a few of them are employed in the phonological system of language. In the several thousand languages in the world, only 200 or so distinguishable phonetic sounds are employed, and in each specific language, the number is inevitably far fewer. Some sounds are universal in every language, such as the five basic vowels of [a], [i], [u], [e] and [o]; but some others are specific to a few languages only. For example, [ð] and [θ] are typical English consonants, which do not exist in Chinese, Russian, Japanese or German. The Chinese language, as a tonal language, has the four tones of leveling, rising, falling-rising and falling of a syllable that distinguish meanings, such as [mā] (mother), [má] (horse), [mǎ] (hemp) and [mà] (to scold). But this is not the case with the alphabetical European languages. Conversely, the use of rising tune to indicate question or uncertainty in European languages is not a property with Chinese.

Speech sounds per se do not yet make sense. A language must have its own pattern of sound combinations. The sound string of “mfiygdnv” is nonsensical in English, nor is it found in any other languages in the world. While the sound string of “plelinger” may appear plausible as an English sound pattern, an English-speaking person would not regard it as a word. With standard Chinese (Putonghua), the sound combinations of [ham] and [bag] are invalid,

but they are perfect in English and even in the Cantonese dialect of the Chinese language (in Cantonese dialect, [ham] means “salty” and [bag] “white”). The combinations of speech sounds constitute words of a language. The sound patterns of words vary from language to language. While Chinese and Japanese may have the sound pattern of [ai], this pattern is a global phoneme in the former (symbolized by V) but a phoneme cluster in the latter (symbolized by VV). In Japanese, the sound pattern is mostly a consonant plus a vowel (CV pattern, e.g., [ki-mo-no][ta-ta-mi]), while in English, it may consist of a series of CV patterns or their derivations. For example, in the sound string of [aɪ dəʊnt ni:d enɪ hausmeɪdɪz](I don't need any housemaids), there are sound patterns of a V, a CVCC, three CVC, and a VCV patterns. In Japanese, the pattern of ACC is not acceptable, while in English it is (e.g., [æks](ax)). Phonology is the branch of linguistic science that studies the patterns of speech sounds, their combinations, and the rules for forming such patterns.

Besides the sound pattern, a word of a language has to have a structure. In English, an alphabetical language, the word “denationalization” has “-nation-” as the word stem, “de-” as the prefix, and “-al” and “-ization” as suffixes. With ideographic language system such as Chinese, a character, an entity of sound, form and meaning in one as it is, is also composed of partial components and strokes. Take the Chinese word “人” (man); it consists of a left stroke and a right stroke. The word structure and its property are the topics of study in morphology.

In addition to structure, a word has to be a combination of speech sounds that conveys a meaning. For instance, “le paix”, “die

Friede” and “мир” mean “peace” to a French, a German and a Russian respectively. The meaning of a word is a concept, whose features and properties are the objects in the study of semantics. In some languages, a “word” may actually express a complete idea. For instance, in the Zuni language, an American Indian language spoken in New Mexico, the word “ni-kwashkwi-tepe-n-a” means “I push his head back” and the word “ni-kwashk-ho-to” means “I drop it in water and it bobs back” (Carroll, 1964). Such “words” are virtually complete sentences, which phenomenon is unique indeed in the family of languages of the world. In studying such “words”, both morphology and semantics, or even syntactic analysis, may be simultaneously involved. Morphology and semantics constitute lexicology, a branch of linguistic science that studies words of languages synthetically.

Furthermore, words must be arranged in a specific way in order to form a complete sentence that conveys an idea. Consider the following examples.

- (1) House little sand smart build freckles boy was.
- (2) The little house with smart freckles was building a sand boy.
- (3) The smart little boy with freckles was building a sand house

The first string is only a random line-up of completely unrelated words, which does not “make sense”. The second string of words does have a syntactic structure, but its words are not combined together in accordance to semantic rules, resulting in an anomaly. Only the third one has both syntactic and semantic structures that work together to carry a meaning and is acceptable as a sentence in English. Therefore, for a sentence to be established, it should have a specific structure, which combines words together in a logical and meaningful sequence

according to some rules.

The sentence formation rules differ from language to language. Chinese and English, for instance, are both analytical languages whose sentence meaning is expressed through word order. In English, it is normal to say, "I read books" or "We study foreign languages", but it is unacceptable to say, "Books read I" or "Foreign languages study we." The Chinese language is even more thoroughly analytical than English, because there is absolutely no inflectional changes in Chinese words, including those used to denote tenses or numbers (such as the present and past participles, the singular and plural) in English. In the Chinese language, it is correct to say "我昨天写了两封信" (I yesterday write two letter), but in English it must be "I wrote two letters yesterday", where inflectional changes are made both to the verb "write" and the noun "letter". Yet, both English and Chinese, as analytical languages, differ from the synthetic languages, such as Russian, which more or less depend on inflectional changes to express the sentence meaning. For example in English, one can say "The teacher gives a book to the student" but not "The student gives a book to the teacher", if the teacher is the giver and the student the receiver. But in German, one can either say "Der Lehrer gibt dem Student eines Buch" or "Dem Student gibt der Lehrer eines Buch", which would never cause misunderstanding so long as the cases (indicated by article inflections of "dem" or "der" or "eines") remain constant. In Russian, the sentence of "Я читаю книгу" (I read books) can be rearranged in any combinations, such as "Читаю книгу Я" (Read books I), "Книгу читаю Я" (Books read I), or "Книгу читаю" ([ "I" ] Books read), "Читаю книгу" ([ "I" ] Read books) with the omission of "Я" ("I") and so on, without changing the sentence

meaning that leads to any misunderstanding. The Japanese language does not have the part of speech called preposition, but it has its unique category of postposition, such as indicated by the underlines in the sentence, “わたしは北京へ行ます(I (subject mark) Beijing (direction-adverb mark) go (verb mark))”. The use of postposition enables Japanese to put the verb at the end of a sentence, differing from many other languages. All these structures are unacceptable either in English or in Chinese.

In view of such varieties, some linguists focus their studies on the description and generalization of the grammatical structure of one specific language, such as the study of English grammar, Chinese grammar and so on. Others are interested in the formulation of grammatical rules universally applicable in the light of certain theoretical framework, such as structural grammar, transformational-generative grammar, case grammar and so on. The former is the branch of language-specific linguistics, such as English linguistics and Chinese linguistics, while the latter is termed general linguistics.

## **II. Language competence and performance**

What we have seen so far is the language as a system of structures and rules used for communication. Language in this sense is an abstract knowledge system in nature, which somehow exists in human mind, independent of situation or idiosyncrasy and is studied as such in linguistics. The underlying ideology of linguistics is that since language has evolved in parallel with thinking, the complexity in the structures and rules of language is essentially the same as the complexity of thinking, and the unveiling of the laws governing language will lead to an understanding of human thinking. Yet, with

the progress of language study, scholars have come to realize the defect of traditional study of language as a system. The fact that people use language expertly without any knowledge of its rules and structures and that children acquire their mother tongue so efficiently in so short a time would nullify the value of the exclusive structural and functional study of language as a sufficient way to a useful explanation of language phenomena. Language is first of all a speech act, a behavior of communication among humans, and linguistics would be incomplete as a science without a study on speech, the actual use of language. Such a defect in traditional linguistics has been witnessed in modern times with the development of computer science. The development of artificial intelligence system, represented by the machine translation programs, has come to a dead end as the traditional linguistic theory repertoire for these researches is now found to be in poverty. This has given rise to an urgent call for “a new generation of linguists” to research on “natural language use”, including both generation and comprehension (Cao, 1998). The so-called “natural language use” undoubtedly denotes how an individual is able to transform language sounds or symbols he receives into conceptual information representation in the mind and how he is able to use language to express his conceptual representation in mind. In short, what should be explored are the psychological processes of human speech behavior.

Forerunner of modern linguistics research, Swiss linguist F. de Saussure was the first scholar to point out the difference of “la langue (language)” and “la parole (speech)”. Similar concepts can be found in Chomsky’s definitions of “language competence” (or “linguistic capacity”) and “language performance” (or “communicative