

EXPLORING THE ACQUISITION OF  
ENGLISH AMBIGUOUS WORDS BY  
CHINESE EFL LEARNERS

# 中国学习者 英语歧义词习得研究

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李海龙 著

中国社会科学出版社

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# 序

现代心理语言学始于 20 世纪 50 年代乔姆斯基发起的“认知革命”，是一门年轻的学科，在之后的半个多世纪得到飞速发展。二语习得领域的心理语言学研究大多采用实验条件下的实证研究范式。由于需要使用 E-Prime 软件开展实验并用 SPSS 软件对实验数据进行统计分析，文科背景的英语专业学生会面临不少困难。通过不断探索，李海龙克服了这些困难，在中国英语学习者歧义词习得研究方面取得了丰硕成果。

一语多解展示了语言的魅力，也给人们生活增加了幽默或误解的调味剂。随着认知语言学的发展，人们对语言歧义的认识进一步深化。譬如，隐喻和转喻两种修辞格就被看作词义引申机制。英语中的词汇绝大多数都是多义词，仅有一个意义的单词少之又少。因此，研究中国英语学习者如何习得歧义词具有重要的理论和实践意义。本书聚焦词汇歧义，考察了中国学习者对不同类型歧义词的习得，以及在这一过程中一语和二语词汇知识的交互作用。“发展”与“交互”是贯穿全书的两个主题。在实验研究阶段，作者严格筛选实验材料和被试，规范实验流程，较好地保证了实验数据的有效性和实验结果的可靠性。

国内外研究者在实证研究的基础上，提出了分层模型、分布特征模型以及交互激活模型等描述双语心理词汇发展的理论模型。通过对歧义词的科学分类，作者运用词汇判断等在线加工任务考察了学习者心理词汇中不同类型英语歧义词的心理表征的发展。研究发现学习者在加工同形异义词、隐喻多义词和转喻多义词的效率有差别，并结合学习者心理词汇中各类歧义词表征的发展模式和语义反馈理论对实验结果进行了解释。二语习得和一语习得的不同之处在于学习者大脑中已经有一个成型的语言系统。英语歧义词的习得也不可避免地会受到一语词汇知识的影响。为了考察一语和二语之间的交互作用，作者用翻译识别和语义启动等研究手段考察了不同水平的英语学习者在加工英语歧义词时一语和二语特定词汇知识的激活和抑制能力。研究结果进一步验证了不同类型歧义词各义项心理表征的发展存在差异。结合不同类型歧义词心理表征的发展和两种语言的交互作用，作者探讨

了概念重构在英语歧义词加工中的作用。此外，作者还设计了出口问卷考察英语学习者的多义词学习策略，可为英语词汇教学提供参考。

作为导师，我很高兴看到李海龙的专著《中国英语学习者歧义词习得研究》出版。一方面是这本著作所包含的学术创见能得到系统展示，另一方面则是我见证了作者在博士学习期间所经历的苦辣酸甜。希望他能够把博士论文出版作为一个新的起点，不畏学术研究之“路漫漫其修远兮”，继续上下求索，为二语习得和心理语言学研究做出新的贡献。

是为序。

王同顺

上海交通大学

2018年11月6日

# 前 言

一个语言形式对应多个意义是人类语言的普遍现象。对语言歧义，特别是词汇歧义的研究吸引了哲学、语言学、心理学等领域研究者的关注。自 20 世纪 70 年代以来，对词汇歧义的研究已经取得了不少成果，然而已有研究对不同类型歧义词的异质性关注不够，且多采用单语者被试，难以体现二语词汇知识的发展过程。

根据各个意义间相关度高低，歧义词可以分为同形异义词和多义词；多义词又可以根据其意义引申机制分为隐喻多义词和转喻多义词，其中隐喻多义词的各义项之间存在跨认知域的相似性，而转喻多义词的各义项之间存在同一认知域内的相邻性。已有研究表明，歧义词的加工比单义词的加工更有效率（即歧义效应），而且意义相关度会影响词汇加工效率。成人外语学习者在学习二语之前大脑中已经有成型的一语概念系统，他们在二语词汇加工过程必然涉及两种概念系统的交互作用。基于词汇歧义和双语心理词汇发展的相关理论，本书内容试图回答以下三个问题：（1）中国英语学习者加工英语歧义词时是否存在歧义优势？（2）随着学习者英语水平的提高，不同类型多义词的心理表征有何发展特征？（3）就两种语言的交互作用而言，学习者的跨语言词汇加工体现出歧义词双语心理表征的何种发展特征？为此，本书依次呈现了三个词汇在线加工的心理语言学实验。

实验一为简单词汇判断任务，主要研究不同水平的中国英语学习者加工歧义词时是否有歧义效应，以及不同类型歧义词的心理表征如何发展。实验结果表明：（1）中国英语学习者在词汇判断时有歧义优势，然而各类歧义词的优势不尽相同。多义词的歧义效应大于同形异义词的歧义效应；（2）歧义类型与学习者英语水平之间存在显著的交互作用，即同一类型歧义词的歧义效应会随着学习者英语水平的提高而变化。具体而言，隐喻多义词的歧义效应随学习者英语水平的提高而减少，然而转喻多义词的歧义效应有所增加。

实验二为翻译识别任务，主要研究不同水平的英语学习者在跨语

言词汇加工中是否有歧义优势,以及翻译识别方向的作用。实验结果显示:(1)中国英语学习者在翻译识别时存在歧义优势,多义词比同形异义词的优势更为明显;(2)高低两个水平组被试的翻译识别效率有显著差异,高水平组的翻译识别效率显著高于低水平组;(3)由于歧义词的各个意义之间存在竞争,且被试再翻译识别过程中需要对激活的非目标语表征进行抑制,翻译识别方向的主效应不显著。

实验三为语义启动范式的词汇判断任务,主要根据语内和语际、主要和次要联想词的语义启动效应来考察不同类型歧义词的心理表征如何发展。实验结果表明:(1)在各个启动实验条件下高低两个水平组的语义启动效应均有显著差异,高水平组的启动效应更大;(2)语言内启动条件下,高低两个水平组中主要联想词均比次要联想词的启动效应大;(3)跨语言启动条件下,低水平组中主要联想词的启动效应比次要联想词的启动效应大,而高水平组中两类联想词的差异不显著。被试在实验之后填写了一份出口问卷。问卷结果显示不同水平的中国英语学习者在词汇学习策略和隐喻意识方面均有显著差异。

围绕词汇加工中的歧义效应,这三个实验从不同维度研究了歧义词的心理表征及其发展:简单词汇判断任务体现了二语词汇知识不同层次的心理表征之间的交互作用;翻译识别任务体现了跨语言加工过程中的双语语义表征的激活和抑制;语义启动范式的词汇判断任务体现了多义词表征发展中可能发生的概念重构过程。主要研究发现可以归纳为:(1)中国英语学习者加工英语歧义词时有歧义优势,但不同类型的歧义词在歧义效应上强弱有别。多义词比同形异义词的歧义效应大,而转喻多义词又比隐喻多义词的歧义效应大。这可以从词形、语义和概念等层次心理表征之间的交互作用得到解释;(2)随着学习者二语水平的提高,隐喻多义词各义项之间的相关度减弱而转喻多义词各义项之间的相关度增强。这可以从隐喻和转喻两个不同的意义引申机制来解释;(3)跨语言词汇加工中存在两种语言的交互作用,低水平英语学习者中英语次要联想词的意义激活更容易被强势的一语抑制,而高水平学习者在相同条件下一语的抑制作用大大减弱。这可能是二语语义表征重构的结果,即按照二语的认知方式重新组织心理词

汇中的语义表征，从而提高了加工效率。

总而言之，本书从词汇歧义效应角度考察了中国英语学习者对不同类型歧义词的加工过程，并依据二语的不同层次心理表征之间以及一语和二语之间的交互作用说明了歧义词语义表征的提取特征和发展模式，可以为优化学习者的英语词汇学习策略并提高他们的隐喻意识提供有益参考。

本书是在作者博士论文的基础上完成的，在写作和出版过程中得到了老师、同学、同事和朋友的诸多帮助。特别感谢我的导师王同顺教授在为学、做人方面的指导和关怀，并欣然为本书作序。感谢我在上海交通大学外国语学院的老師和博士同学，以及浙江外国语学院应用外语学院的领导和同事。中国社会科学出版社王衡老师为本书出版做了大量工作，在此深表谢意！

最后，囿于作者水平，本书在研究方法和理论阐述方面难以尽善，不少问题有待进一步研究。力有未逮之处，还请方家多多指正。

# Preface

Lexical ambiguity is a common phenomenon in human language. Since the 1970s, research on lexical ambiguity has made great progress, such as the explanation of the ambiguity effect in language processing. Nevertheless, in previous research, lexical ambiguity was treated as a homogeneous phenomenon, which largely ignored the lexical properties of different types of ambiguous words, and monolingual adult participants were adopted, which made it unlikely to investigate the developmental and interactive nature of the bilingual mental representations of ambiguous words in second language learning.

Lexical ambiguity can be divided into homonymy and polysemy based on their degree of meaning relatedness; polysemy can be further divided into metaphorical polysemy and metonymical polysemy, respectively based on similarity and contiguity among their meanings. Previous research showed that ambiguous words are processed more efficiently than unambiguous words, and that the relatedness of their meanings can influence the processing efficiency. For adult second language learners, they have got a mature first language conceptual system before learning a second language. Therefore, lexical processing in a second language inevitably involves the interaction of the two conceptual systems. Based on related theories on lexical ambiguity and bilingual mental lexicon, the present study intends to address the following three questions through three psycholinguistic experiments: (1) Is there any ambiguity advantage in the processing of English ambiguous words by Chinese EFL learners? (2) With increased English proficiency, what are the developmental features of different types of ambiguous words? (3) Viewing from the interaction of two languages, what developmental features of the mental representations of English ambiguous words can be revealed in the learners' cross-language lexical processing?

Experiment 1 is a simple lexical decision task set to investigate the ambiguity advantage in the processing of English ambiguous words by Chinese EFL learners at different proficiency levels, and the representational development of different types of ambiguous words. The results indicate that: there exists an ambiguity advantage in lexical processing by Chinese EFL learners, which differs for different types of ambiguous words; the two-way interaction between the ambiguity type and the learners' proficiency is significant, that is, the ambiguity effect for the same type of ambiguous words is modulated by the learners' English proficiency.

Experiment 2 is a translation recognition task, which is set to investigate the ambiguity advantage in cross-language lexical processing by Chinese EFL learners at different proficiency levels, as well as the role of directionality. The results indicate that: there exists an ambiguity advantage in translation recognition by Chinese EFL learners; there is a significant difference in the efficiency of translation recognition by high and low proficiency learners, in that the high proficiency learners are significantly more efficient than low proficiency learners; under the influence of the competition among meanings and the inhibition of the activated non-target mental representations, the main effect of directionality is not significant.

Experiment 3 is a semantically primed lexical decision task, which is set to investigate the representational development of different types of ambiguous words through the semantic priming effect of different types of associative words. The results indicate that: The semantic priming effect for different types of ambiguous words is significantly different between the two proficiency groups; for within-language semantic priming, the priming effect of English dominant associative words is significantly more robust than that of English subordinate associative words; for cross-language semantic priming, the priming effect of Chinese dominant associative words is significantly larger than that of Chinese subordinate associative words in the low proficiency group, whereas the priming effects of the two types of Chinese associative words

exhibit no significant difference in the high proficiency group. The same group of participants completes an exit questionnaire after Experiment 3, the results of which indicate a significant difference between the two groups in terms of their vocabulary learning strategy and metaphorical awareness.

Centering on the ambiguity effect on lexical processing, the three experiments are designed to study the representational development of English ambiguous words in different dimensions: Experiment 1 shows the interaction among different representational levels of the English language; Experiment 2 shows the activation and inhibition of the bilingual semantic representations in cross-language lexical priming; Experiment 3 shows the process of conceptual restructuring in the representational development of different types of ambiguous words. The major findings of the research can be summarized as: (1) It confirms the existence of ambiguity advantage in processing English ambiguous words, but the magnitude of ambiguity effect differs for different types of ambiguous words; a plausible explanation is based on the interaction between different levels of representations; (2) The meaning relatedness of the senses of metaphorical polysemy weakens while that of the senses of metonymical polysemy strengthens as a result of the learners' increased proficiency, which can be explained from the meaning extensions mechanisms of metaphorical polysemy and metonymical polysemy; (3) The activation of the mental representations of English subordinate associative words tends to be inhibited by the dominant L1, while the inhibitory effect of L1 representations is greatly reduced in high proficiency learners, hence the representational development of English ambiguous words shows the restructuring of semantic representations, that is, reorganizing the semantic representations in the same cognitive pattern with the second language.

This book, based on the interaction of different representational levels of the second language and the interaction of the two languages in one mind, has investigated the processing of different types of English ambiguous words by Chinese EFL learners, which can facilitate the optimization of the learners'

vocabulary learning strategies and improve their metaphorical awareness. Nonetheless, the present study just takes a small step towards understanding the internal mechanisms driving the development of L2 representations, and awaits further study to deepen our understanding of the representation and processing of lexical ambiguity in second language acquisition.

This book is based on my doctoral dissertation. In the course of its compilation and publication, I owe my gratitude to many people who helped me so much along the way. My deepest gratitude goes to my supervisor Professor Wang Tongshun who gave me valuable insights and helpful suggestions on learning and life, and gladly wrote preamble for the book. My heartfelt thanks go to my teachers and fellow students in the School of Foreign Languages of Shanghai Jiao Tong University, and to my colleagues in the School of Applied Foreign Languages of Zhejiang International Studies University. I am also grateful to Ms. Wang Heng from China Social Sciences Press for her professional assistance in getting the book published.

## ABBREVIATIONS

ANOVA	Analysis of Variance
AW	Associative Word
BIA	Bilingual Interactive Activation
CET	College English Test
EAT	Edinburgh Associative Thesaurus
EFL	English as a Foreign Language
HP	High Proficiency
IC	Inhibitory Control
L1	First Language
L2	Second Language
LP	Low Proficiency
MHM	Modified Hierarchical Model
MS	Millisecond
PDP	Parallel Distributed Processing
QPT	Quick Placement Test
RHM	Revised Hierarchical Model
SAS	Supervisory Attentional System
SEL	Sense Enumeration Lexicon
SLA	Second Language Acquisition
SPSS	Statistical Package for Social Sciences
TEM	Test for English Majors

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# CHAPTER 1

## INTRODUCTION

In the realm of linguistics, ambiguity is defined as “a word or phrase susceptible of more than one meaning, or an equivocal expression” by *The Oxford English Dictionary* (Murray, et al., 1978: 270). As linguistic ambiguity is common in human language, resolving such ambiguity is essential for people to communicate effectively with each other, and interpreting pun-phrases or guessing riddles also helps people’s cognitive development. As a result, research on ambiguity has gained momentum since linguistics emerged as an independent discipline. Though linguistic ambiguity is ubiquitous, relatively little is known about how such equivocal expressions are comprehended or acquired by children or adults. Researchers have proposed many theories to varied degree of success, and many unresolved issues still require more in-depth research in this respect.

Generally speaking, linguistic ambiguity is comprised of syntactic ambiguity and lexical ambiguity. Garden-path sentences, which consist of an example of syntactic ambiguity, are sentences that people tend to interpret initially with a different structure than the structure they actually have. For example, the sentence *The horse raced past the barn fell* means “the horse that was raced past the barn fell”. Research in this respect helps to ascertain whether people employ serial or parallel parsing strategies when comprehending this sentence. Lexical ambiguity occurs when a word form can have more than one meaning. For example, the word *bug* can either refer to “a small insect”<sup>①</sup> or “an error in a computer program or system”. Previous research indicated that the presence of multiple meanings facilitated the processing of ambiguous words (i.e., the ambiguity advantage). The theme of the present study is to investigate the representation and processing of lexical ambiguity

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① Unless indicated otherwise, the definitions of the lexical words mentioned in this book are cited from *The Oxford English Dictionary* (Murray, et al., 1978).