

西方语言学丛书



# 心理语言学

# PSYCHOLINGUISTICS

MICHAEL GARMAN

DEPARTMENT OF LINGUISTIC SCIENCE  
UNIVERSITY OF READING



北京大学出版社  
PEKING UNIVERSITY PRESS



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# 出版说明

乔姆斯基的转换生成语法强调人类语言的普遍性,试图从语法原则与参数的高度揭开人类语言的普遍结构,更进一步揭示人类认知的奥秘。人类历史上似乎从未有哪一门学科如此富于创造性和挑战性,也很少有一种科学能够如此深刻地对相关学科产生如此广泛而深远的影响。这一理论在不断拓展的语料视野面前,在不断回应新思想方法的挑战过程中,不断地调整自己的思路和方法,跋涉了半个世纪,其所取得的成就不仅使语言学家激动和自豪,也令当代哲学、心理学、信息学、计算机科学、人工智能等众多领域的学者所瞩目。

乔姆斯基自称其理论远绍十七世纪法国普遍唯理语法。1898年,马建忠在他的《马氏文通》后序中这样说:“盖所见为不同者,惟此已形已声之字,皆人为之也。而亘古今,塞宇宙,其种之或黄或白,或紫或黑之钩是人也,天皆赋之以此心之所以能意,此意之所以能达之理。则常探讨画革旁行诸国语言之源流,若希腊、若拉丁之文词而属比之,见其字别种,而句司字,所以声其心而形其意者,皆有一定不易之律;而因以律吾经籍子史诸书,其大纲盖无不同。于是因所同以同夫所不同者,是则此编之所以成也。”马氏是留法的,普遍唯理语法对他的影响同样是深刻的。

不过,在中国,普遍主义的思想也就此昙花一现,很快就湮没在强调汉语特点的思路中。半个多世纪之后,转换生成语法逐渐为中国学者所知,可是很多人都认为它不适合汉语语法研究,只有在国外的学者在这方面做了些工作,取得了不少成绩。这种研究尽管还存在许许多多的问题,但至少可以说明,汉语研究同样可以走普遍语法的道路。

马氏的模仿是显然的。然而我们今天的研究就能肯定不是模仿了么?朱德熙先生曾经说:“长期以来印欧语语法观念给汉语研究带来的消极影响……主要表现在用印欧语的眼光来看待汉语,把印欧语所有而汉语所无的东西强加给汉语。”“我们现在在这里批评某些传统观念,很可能我们自己也正在不知不觉之中受这些传统观念的摆布。

这当然只能等将来由别人来纠正了,正所谓后之视今,亦犹今之视昔。”其言盖有深意焉。然而问题其实并不在于是否模仿,而在于模仿来的方法、视角是不是可以得出符合汉语事实的结论。反对模仿蕴涵着一个前提:即汉语与印欧语的结构没有相同之处。但是今天的我们对汉语的结构究竟了解了多少呢?

任何语言都有自己的特点,这一点毋庸置疑。但是不了解语言的普遍性,也就谈不上特点,也就无所谓走自己的道路。而且,在某一水平上成为特点的规律,在更高或更深层的水平上也许就不成其为特点,而仅仅是普遍性的一种特殊表现而已。

当代社会文化领域中多元化是主流,当代语言学理论也趋于多元。在西方,形式语言学不大可能再如以往如此这般地波澜壮阔,而是进入一个相对平静的稳定发展的时期,语言的功能方面的研究已经占据一席之地。在未来的一段时期内,语言学将是一个酝酿期,为下一个重大突破作准备。而在中国,语言学在长期的“借鉴”之后,也在思考如何能够从汉语出发,取得重大突破,反哺世界学林。语言学发展到今天,又重新面临着路怎样走这一根本问题。

不管下一步怎么走,充分了解西方学者的成绩,借鉴他们的思路和方法无疑是必不可少的。特别是对于取得了如此重大成就的当代西方语言学,如果不能有正确的了解,无异于闭门造车,要想出门合辙,不亦难乎?

北大出版社多年来坚持学术为本的出版方针,我们愿意为语言学在新世纪的发展尽一分绵薄之力。为了推动我国语言学事业的发展,在总编张文定先生的主持下,我们将原版引进一批高质量的语言学专著和教材,命之曰“西方语言学丛书”,以飨学林。引进的作品将包括语音学、韵律学、句法学、语义学、语言史、词源学、方言学等各个领域;既包括宏观的理论研究,也包括重要问题的个案研究;既包括形式语言学的方法,也包括认知、功能等视角。但不管是哪一种,都是经过精挑细选,庶几开卷有益。

我们期待着中国语言学的新突破!

北京大学出版社

## PREFACE

This book provides an introduction to the field of language study known as *psycholinguistics*. Language can be studied in a number of ways – as a corpus of data in *descriptive linguistics*, as an abstract system of knowledge in *theoretical linguistics*, as a social phenomenon in *sociolinguistics*, and so on. Psycholinguistics is, as its name implies, basically concerned with language as a psychological phenomenon; and, most characteristically, with language in the individual. Hence it addresses such questions as ‘How does a listener recognise words in the stream of speech, or in patterns on the page, and arrive at an understanding of utterances?’ and ‘How does a speaker go about putting ideas into forms that can be expressed as patterns of articulatory, or manual, movements?’

Two important aspects of these concerns are well captured in the term *microgenesis* of language (Campbell 1979). First, *micro-* in this connection refers to the rapid, moment-by-moment nature of everyday language processes, by virtue of which we understand and produce utterances on a time scale that is marked off in seconds and milliseconds. This contrasts with what we may refer to as the *macrogenesis* of language, in either of its main forms, (i) the individual’s learning of a first or subsequent language (the ontogenesis of language), on a time scale of days, weeks, months and years or (ii) in the species’ development of linguistic abilities (the *phylogenesis* of language), on a time scale appropriate to human evolution. The other part of the term, *-genesis*, draws attention to the creative nature of language use that is involved, not just in producing utterances (where something is self-evidently ‘put together’), but also in understanding (where what is produced is abstract, internal to the language user, and altogether more difficult to study objectively).

The time-scale of microgenesis itself may be further highlighted by reference to a distinction between *microchronic* and *macrochronic* dimensions of speech (Catford 1977). In these terms, the very rapid microchronic *processing* events may be thought of as taking place within a hierarchy of phases, from neuro-

## *Preface*

linguistic programming to execution of vocal tract muscle movements, with each phase being of the order of tens of milliseconds in duration. The result is a macrochronic *product*, a succession of speech sounds which range from constituents having durations of tens of milliseconds up to indefinitely long stretches of utterance. Such concepts as these, in written as well as spoken language forms, and in comprehension as well as production, help to define the field that the psycholinguist is involved in.

It may be as well to say something here about who psycholinguists are, and what brings them to psycholinguistics. Terms such as 'linguist' and 'psychologist' are too broad to show either the inter-disciplinary similarities or the intra-disciplinary differences of approach, which appear to depend more on the immediate goal of study than on the demarcations between academic disciplines. Thus, linguists, philosophers of language and psychologists working in cognitive-semantic aspects of language performance constitute an interdisciplinary research community, and one that is rather distinct from, for example, that which concerns itself with the production and perception of speech. Concerning the latter, 'speech scientists' as they may best be called, we may observe that they too represent a number of disciplines, including acoustic physics as well as phonetics and psychology.

We should perhaps mention, in passing, that among this research community, there is a tradition that occupies a particularly important place in the development of psycholinguistics: within the academic discipline of linguistics, it is phoneticians who have most conspicuously and consistently focussed on the processes of actual human performance, as well as their products, in language. This focus is evident even in the idealised classical phonetic description of speech sounds, in terms of the movements of articulators that are required to produce them. In a sense, the goal of a more general psycholinguistics may be regarded as extending this approach to the rest of language performance. In this regard, it is unfortunate that linguistic science has (with some honourable exceptions) not devoted comparable efforts towards the study of the visible forms of language.

So psycholinguistic research may be thought of as constituting, appropriately enough, a mosaic of specialisms, focussed on different aspects of a highly complex phenomenon. As a result, it can be very difficult for the beginning student to develop a sense of where all the research activities and findings belong, in the larger field of psycholinguistics. This difficulty can be compounded by some real differences of approach between disciplines. In this connection, I should declare my own background as that of the interested linguist, teaching courses over the years to various undergraduate and postgraduate groups in the Department of Linguistic Science at the University of Reading.

One experience arising from this situation is that I have had to address those elements of psycholinguistics that are least well represented in my students' (and my own) experience – not an easy task, and one which writing this book has given me the further opportunity to labour at. Another has been the need to caution students from other disciplines against equating 'linguistics' with any single school of thought, and not to regard the view from linguistics (of any school) as having automatic authority within psycholinguistics. What balance I have been able to strike in my interpretation of psychological issues remains to be seen, but I should admit to a long-standing sympathy with the view expressed by N.S. Sutherland (an experimental psychologist), in the context of a discussion of Chomsky's (1965) account of linguistic competence, that

the task of psycholinguistics is not to confirm Chomsky's account of linguistic competence by undertaking experiments ... The task of psycholinguistics is to my mind very much more difficult and interesting. It is, by doing experiments, to find out what are the mechanisms that underlie linguistic competence. (Sutherland 1966, pp. 161–2)

Inevitably, developments have taken place in the years since this view was expressed in just these words. For one thing, our notion of 'doing experiments' has come under scrutiny; and it might be added that an important role for linguists in such a general enterprise is to provide suitable descriptions of observable language behaviour, in naturalistic as well as in experimental situations, in order that resulting theories about underlying mechanisms may be suitably founded.

Psycholinguistic approaches to language are, as we have noted, quite varied, from those that are concerned with the more concrete operations of the physiological systems involved in producing and perceiving language *signals* to the more abstract cognitive systems, including memory, which are involved in the construction and interpretation of *messages*. This book tries to cover something of this range, for both spoken and written forms of language. But it inevitably leaves a good deal out of account, particularly on those areas which are represented elsewhere in this series of textbooks by other specialists, such as Elliot (1981) for child language acquisition, Klein (1986) for second language acquisition, Brown and Yule (1983) on discourse analysis, and so on. By and large, however, what is left for our consideration is arguably central to our field.

The organisation of the topics in this book results from an attempt to identify *elements* (Part I) and *issues* (Part II) of psycholinguistics, focussing on the most general language abilities of *normal*, *adult* and *monolingual* individuals. The final chapter pushes the discussion into the field of adult language



## *Preface*

pathology, but only very briefly, and in order to evaluate a further potential source of evidence.

In concluding this Preface, I should like to acknowledge my debt to the research communities for the intellectual excitement that has come from the tenacity and ingenuity through which valuable sightings (sometimes perplexing and conflicting) have eventually been made of so many apparently intractable and inaccessible aspects of language processing in humans. I should also point out to the reader that I have not tried to produce a survey of all, or even most, of the recently published studies on psycholinguistics, since I did not know how to make such a diet digestible. Instead, I have tried to identify a fairly balanced range of issues and approaches, most of them with research roots going back about a decade, and have tried to discuss their implications. This book will do well if it helps students to go to the primary sources of current research with a reasonable sense of perspective; if it also serves to help them to identify areas where further research is needed, then it will do better still; it will do best if it stimulates some students sufficiently that they eventually become contributors to the research field themselves.

## ACKNOWLEDGEMENTS

Many people have helped me with this book in many ways, at various stages of its preparation. I should like to thank them all. The first group of people I am indebted to are those students who have attended my psycholinguistics courses over the years at the University of Reading: they may recognise more or less of the material that is covered here, depending on the number of years intervening. I have also received much helpful advice from colleagues who gave unstintingly of their time at moments that were more to my convenience than theirs: in alphabetical order, they are: Professor R.E. Asher, Colin Biggs, Andy Butcher, Margaret Davidson, Susan Edwards, Janet Fletcher, Paul Fletcher, Patrick Griffiths, Mark Hanson, Professor Bill Hardcastle, Arthur Hughes, Professor Ray Kent, Professor P.H. Matthews, Professor Lesley Milroy, Professor F.R. Palmer, Professor Philip Smith, and Lin Wang. Outside this order, and most particularly, I thank John Trim, my series editor, who has provided a constant flow of judicious advice and patient encouragement, throughout a very long period. The book doubtless has many faults still, and those I must acknowledge as my own.

Penny Carter of CUP also deserves a special mention, for her seemingly endless patience and encouragement. Hazel Bell, Barbara Barnes and Jill Tozer of the Department of Linguistic Science generously and efficiently took on much of the typing and retyping of the book, at various stages of its development. Last, in the chronological sequence, comes Jenny Potts, for her blend of expert sub-editing skills and great patience in the face of daunting problems.

A textbook in an interdisciplinary field such as this must rely a good deal on previously published ideas. As far as the text is concerned, I have tried to make due acknowledgements, while attempting to preserve the flow of the text in the interests of the reader who wants the ideas, rather than a bibliographical survey. I should like to learn of, and apologise for, any omissions in this regard. For the figures and tables, I am grateful to the following sources for permission to use previously published material: Academic Press: figures 2.4,

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## ABBREVIATIONS

A	<i>adverbial</i>
AdvP	<i>adverb phrase</i>
AER	<i>average evoked response</i>
AI	<i>artificial intelligence</i>
APG	<i>abstract performative grammar</i>
Art	<i>article</i>
ASL	<i>American Sign Language</i>
ATN	<i>augmented transition network</i>
Aux	<i>auxiliary</i>
BSL	<i>British Sign Language</i>
C	<i>complement</i>
CAT	<i>computerised axial tomography</i>
CN	<i>cranial nerve</i>
cons	<i>consonantal</i>
CVA	<i>cerebral vascular accident</i>
decl	<i>declarative</i>
dem	<i>demonstrative</i>
det	<i>determiner</i>
EEG	<i>electroencephalography</i>
ELI	<i>English language interpreter</i>
EMG	<i>electromyographic</i>
ERP	<i>event-related potential</i>
ESB	<i>electrical stimulation of the brain</i>
FCU	<i>functionally complete unit</i>
FP	<i>fluent phase</i>
GPC	<i>grapho-phonic correspondence</i>
GPSG	<i>Generalised Phrase Structure Grammar</i>
GPT	<i>grapho-phonic transposition</i>
HP	<i>hesitant phase</i>
LG	<i>linguist's grammar</i>

*List of abbreviations*

MG	<i>mental grammar</i>
MV	<i>main verb</i>
N(P)	<i>noun (phrase)</i>
Nprop	<i>proper noun</i>
O	<i>object</i>
obstr	<i>obstruent</i>
PP	<i>parsing procedures</i>
Pr	<i>preposition</i>
Pron	<i>pronoun</i>
rCBF	<i>regional cerebral bloodflow</i>
REA	<i>right-ear advantage</i>
RN	<i>radionucleide</i>
RT	<i>reaction time</i>
RTA	<i>road-traffic accident</i>
RTN	<i>recursive transition network</i>
S	<i>subject</i>
SIS	<i>sensory information storage</i>
STM	<i>short-term memory</i>
TM	<i>transcortical motor (aphasia)</i>
TG	<i>transformational grammar</i>
TS	<i>transcortical sensory (aphasia)</i>
V	<i>verb</i>
VOT	<i>voice-onset time</i>
VSSP	<i>visuo-spatial scratch-pad</i>
WAB	<i>Western Aphasia Battery</i>

*Note on transcription:* the transcription used for phonetic representation is that of Gimson (1970).

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