

# LINGUISTICS IN CHINA

No. 2

Edited by Feng Shi and Hongming Zhang

主编 ○ 石 锋 张洪明

语言学  
文选



世界图书出版公司  
WORLD PUBLISHING CORPORATION

Linguistics in China

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No. 2

## 语言学文选 (第二辑)

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北京·广州·上海·西安

Beijing · Guangzhou · Shanghai · Xi'an

## 图书在版编目(CIP)数据

语言学文选. 第二辑/石锋, 张洪明主编. —北京: 世界图书出版公司北京公司, 2014. 2  
ISBN 978-7-5100-7480-6

I. ①语… II. ①石…②张… III. ①语言学—文集—英文 IV. ①H0-53

中国版本图书馆 CIP 数据核字 (2013) 第 309572 号

## 语言学文选·第二辑

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主 编: 石 锋 张洪明  
责任编辑: 梁沁宁

出版发行: 世界图书出版公司北京公司 <http://www.wpcbj.com.cn>

出 版 人: 张跃明

地 址: 北京市朝内大街 137 号 (邮编 100010, 电话 010-64077922)

销 售: 各地新华书店及外文书店

印 刷: 三河市国英印务有限公司

开 本: 787 × 1092 1/16

印 张: 21

字 数: 505 千

版 次: 2014 年 2 月第 1 版 2014 年 2 月第 1 次印刷

书 号: ISBN 978-7-5100-7480-6

定 价: 68.00 元

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# Linguistics in China

No. 2

世界图书出版公司

(第二卷)

Linguistics in China 2

Editors

Feng Shi and Hongming Zhang

Published in China

by World Publishing Corporation, Beijing

137 Chaonei Street, Dongcheng District, Beijing, China

© World Publishing Corporation 2014

First published 2014

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Chinese library Cataloguing in Publication Data

Data available

No. (2013) 309572

Typeset by Wenhui Weiye Typing Office, Beijing

Printed by Sanhe Guoying Printing Company Limited

ISBN 978-7-5100-7480-6

World Publishing Corporation  
北京·上海·西安  
Beijing · Shanghai · Xi'an

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## Foreword

Jiaxuan Shen

I received good news that World Publishing Corporation is putting forward two linguistics series—*Overseas Linguistics* and *Linguistics in China*. The former plans to introduce important linguistic researches overseas to China by translating them into Chinese, and the latter aims at disseminating Chinese linguistic researches to the rest of the world by converting them into English. The editors, Professors Feng Shi and Hongming Zhang, asked me to compose a foreword for these two series, providing me the freedom of deciding whether to write a foreword for each or one for both. Here I respectfully ask permission to choose the second option. I have two reasons for doing so: firstly, the two endeavors—introducing top researches from abroad to China and from China to the English-reading world—complement each other, both of which are indispensable to the promotion of linguistic studies globally. Secondly, writing only one foreword will spare the trouble of being repetitions.

Academic development always comes as a result of unceasing correlations, communication, and mingling among different academic traditions. Bernhard Karlgren's work serves as an admirable example. Because of his significant achievement in traditional Chinese phonology, any omission of his name from the history of Chinese linguistics, or more specifically, the history of Chinese phonological studies, is unimaginable. Karlgren's achievements, however, benefited greatly from previous research in Chinese philology. In his own words, he described himself as extremely lucky to have had rhyming dictionaries and rhyme tables reflecting the *qieyun* system when studying Middle Chinese, and to have had the *Shijing* (*The Book of Odes*) and *xiesheng*<sup>①</sup> systems available to him when working with Old Chinese. At the time, the knowledge of Chinese researchers<sup>②</sup> had already reached a high level of sophistication in these two fields of study. It was this knowledge upon which Karlgren's theories were built.

Linguistic studies abroad, especially in the western world, have developed fast and changed greatly in the past few decades. New theories, novel methods, and groundbreaking results have been emerging and flourishing. Despite this, we Chinese linguists have lagged behind our close neighbor—Japan—in the translation and introduction of western linguistic works. Besides incorporating the

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① *Xiesheng* refers to the phenomenon that those Chinese characters sharing the same sound radical have similar pronunciations.

② That is, researchers of the Qing Dynasty.

strengths of our traditional studies, we must acquire sufficient knowledge of foreign theories, based on which we will make our own innovations, in order to take our linguistic studies to a higher level. What we need for this course of action is a progressive perspective, a scientific conception, and an open, balanced mindset. On the whole, I believe, our most crucial task for many years to come is bringing in excellent foreign research. But the job of pinpointing quality research calls for our efforts in careful selection, possessing good insight, and cooperating with colleagues at home and abroad. It is my sincere desire that *Overseas Linguistics* will rise to the occasion.

We are eager to know the world. And we must make ourselves known to the world as well. By beginning to study linguistics far back in history, we have created our own academic conventions. Characteristics of genesis, typology, and geography among languages spoken in China and her neighboring regions differ from those found in Indo-European languages. Most (though not all) western linguists have either very limited or superficial understanding of these characteristics. They know even less about the perspectives, methods, and achievements of Chinese scholars. Lately, I've been reading about western linguistic typologists' discussions on whether or not the lexical classification into nouns, verbs, and adjectives is universal across languages, and if any difference of classification methods should such universality exist. It appears that those comments made by western linguists on Chinese typology are typically fleeting, over-generalized, or mistaken in the context of their own frameworks of lexical classification. As far as I know, the western linguistic typologists are yearning for an objective description of the Chinese language and the viewpoints and perspectives taken by Chinese scholars, which are currently inaccessible to them due to the lack of common working language. The publication of *Linguistics in China* is groundbreaking in this sense. The series is monumental because it introduces in English some contemporary researches of Chinese linguists. All roads are difficult to travel before they are evened out. But we know that little by little we shall travel far. The first step always deserves encouragement. In the meantime, the editors of these series should keep an eye on responses from foreign peers and use these responses of the highest quality.

The ultimate goal of linguistic study is to explore the nature of human language. Universal factors of language hide behind peculiarities of specific tongues, while the same unique features are embodiments of the universals. We Chinese linguists should strive to make our own contributions in the course of that exploration. As complements to each other, these two collection series are stepping stones in the journey toward our goal.

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It is translated by Junjie He and revised by Chenqing Song.

# Lexical Phonology and a Study of Reduplications in Mandarin Chinese

Jingming Zhang, Hui Yu

Translated by Hui Yu

Proofread by Lu Zhang

## PHONOLOGY AND PROSODY

**Abstract:** Lexical phonology (LP) is a branch of the re-examination of grammar proposed in the 1980s. It offers an insightful perspective on the interaction of phonology and morphology that essentially differs from other parts of E theories. LP provides a better account for certain linguistic phenomena and can effectively handle phonological opacity. This paper provides a brief introduction to this theory and presents a case study of reduplications in Mandarin Chinese in this framework. The article is organized as follows. Section 2 discusses the background for this article. Section 3 introduces the history, the theoretical framework, in contrast to the classic proposals, and some important notions of lexical phonology. Section 4 discusses some phonological phenomena concerning Chinese reduplications in this framework. Section 5 concludes the paper.

**Key words:** lexical phonology, reduplications, tone, tone sandhi, lexical tone

### 1. Introduction

Lexical phonology (LP) is a branch of the re-examination of grammar proposed in the 1980s. It offers an insightful perspective on the interaction of phonology and morphology that essentially differs from other parts of E theories. LP provides a better account for certain linguistic phenomena and can effectively handle phonological opacity. This paper provides a brief introduction to this theory and presents a case study of reduplications in Mandarin Chinese in this framework. The article is organized as follows. Section 2 discusses the background for this article. Section 3 introduces the history, the theoretical framework, in contrast to the classic proposals, and some important notions of lexical phonology. Section 4 discusses some phonological phenomena concerning Chinese reduplications in this framework. Section 5 concludes the paper.

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# Lexical Phonology and a Study of Reduplications in Mandarin Chinese

Hongming Zhang, Hui Yu

Translated by Hui Yu

Proofread by Jie Zhang\*

**Abstract:** Lexical phonology distinguishes properties of phonological rules based on the morphology levels on which the rules apply. This allows certain linguistic phenomena, such as phonological opacity, to be accounted for more easily. This article introduces the history, the general framework, revisions to the classic proposals, as well as the important theoretical notions in lexical phonology. A case study on reduplications in Mandarin Chinese is also presented in this framework. Reduplications of nouns and verbs show different phonological patterns in Mandarin Chinese, neither classical SPE nor OT can provide a satisfactory explanation for the difference. Lexical phonology accounts for the different properties of the two reduplications and their different assignments of stress by positing different levels of morphology, which then influence the application of cyclic and postcyclic rules. Similar reduplications, therefore, may exhibit dissimilar phonological patterns.

**Key words:** lexical phonology, reduplication, third tone sandhi, neutral tone

## 1 Introduction

Lexical phonology (LP) is a theory of the organization of grammar proposed in the 1980's. It offers an insightful proposal to the interaction of phonology and morphology that crucially differs from other post SPE theories. LP provides a better account for certain linguistic phenomena and can effectively handle phonological opacity. This paper provides a brief introduction to this theory and presents a case study of reduplications in Mandarin Chinese in this framework. The article is organized as follows. Section 2 discusses the background for this article. Section 3 introduces the history, the theoretical framework, revisions to the classic proposals, and some important notions of lexical phonology. Section 4 discusses some phonological phenomena concerning Chinese reduplications in this framework. Section 5 concludes the paper.

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## 2 Background

In phonology, we try to explore the nature of phonological representations, analyze and investigate the internal structure and properties of linguistic systems, and offer formal explanations to various kinds of phonological phenomena in the hopes of revealing the phonological aspect of Universal Grammar that underlies the phonological universals of human language. In the search for phonological universals over the last few decades, various phonological theories that differed in methodological approach and modes of computation developed. Classical SPE (Chomsky & Halle 1968) is a rule-based theory that focuses on derivation from underlying form to surface realization, rules and derivations play important roles in phonological analysis. Standard Lexical Phonology (Kiparsky 1982; Mohanan 1986) is a research program that looks deeper into the relationship between phonology and morphology while keeping rules and derivations as the basic tenets of phonology. In the late 1980's and early 1990's, a new constraint-based approach came into the field of phonology (Shieber 1986; Pollard & Sag 1994). In Paradis's "On Constraints and Repair Strategies" (1988) and Goldsmith's "Harmonic Phonology" (1993), both rules and constraints are used to handle phonological problems. In Optimality theory (OT; Prince & Smolensky 1993), rules are entirely dispensed with in favor of a hierarchy of constraints, serial derivation holds no place in this theory. This constraint-based theory successfully handles a number of problems where serial derivation runs into difficulties, but also comes with its own set of problems. Some issues of contention include: Are derivation and cyclicity part of the nature of human language? Does the grammar contain ordered rules or only surface constraints (Iggy Roca 1997)? Is the grammatical module of the human brain rule-based or constraint-based? We will not dwell on these issues here as they are often issues of philosophical belief and hard to either verify or falsify. However, as to the highly popular Optimality Theory—the most influential approach in contemporary linguistics, its abandonment of serial derivation in favor of parallel evaluation of constraints causes obvious problems with opaque surface forms, and this problematic area limits the success of OT as a theory. There are four types of extrinsic ordering in generative phonology, and counterbleeding and counterfeeding are the main causes for opacity. Take counterfeeding as an example: in two ordered rules, when the application of the second rule provides the trigger for the first rule to apply, the two rules are said to be in a counterfeeding order. On the surface, the trigger of the first rule is met, yet it does not apply, resulting in an opaque form. In generative phonology, rules can be extrinsically ordered, but OT is surface-oriented and cannot refer to information on the intermediate levels. Constraints are ranked, not ordered, as they apply simultaneously, thus it presents a great challenge to its analytic process. OT tries to solve the problem by optimizing its phonological representations or constraints, including Sympathy theory, OO Correspondence, comparative markedness and so on. These approaches can solve the opacity problem to some extent, but each has its own problems and can only solve certain types of opacity. Circularity and ambiguity between formalism and functionalism are fatal problems to OT and cause it to fall into its own logic fallacy. Theoretical patching such as Derivational OT handles these problems, but abandons the parallelism that was the life and spirit of classical OT.

LP can successfully handle phonological opacity. It is a theory of rules and derivations and its crucial claim is that the way in which the derivation is organized is crucial to phonological analysis (Rubach 2008). Derivations are indispensable, as there are indispensable intermediate levels from the input to the output, and the domain of some rules is not on the original input but the outcome of the application of previous rules. LP distinguishes different domains of rule application: lexical phonology and postlexical phonology. Postlexical phonology may make the effects of lexical phonology opaque, whereas the inverse, lexical phonology making the postlexical phonology opaque, does not occur. That is, we should not interpret the two phonologies as co-phonologies that apply simultaneously, but as sequentially ordered phonologies (Booij 1997). In the following discussion, the history, the general framework, revisions to the classic proposals, and some of the important notions in lexical phonology are introduced, followed by a case study on reduplications in Mandarin Chinese.

### 3 Lexical phonology

Lexical phonology investigates the interaction of phonology and morphology in generative grammar. In classic generative linguistics, there is no provision for morphology, and the structure of words is analyzed in the same way as syntactic structure, both of which are handled by the same grammar (Chomsky 1965; Chomsky & Halle 1968). This effectively means that phonology can only apply after all syntactic operations, which include morphology. Therefore, the organization of the grammar in the standard theory made neither the distinction between morphology and syntax nor the distinction between phonological processes that were conditioned by morphology and those that were independent of it (Folarin 1987). However, Chomsky (1970) found that word structure and sentence structure were not governed by the same set of principles and should belong to different modules of the grammar. Later studies on English affixes (Siegel 1974), cycles (Petesky 1979), and others (Allen 1978; Aronoff 1976; Selkirk 1983) further clarified the roles of the lexicon and morphology in linguistic theory. The research on derivation and the role of morphology in phonology was summed up into a theory called Lexical Phonology by Kiparsky, and its basic notions were put forth in "From Cyclic to Lexical Phonology" in 1982. Around the same time, his student Mohanan finished his Ph. D. dissertation entitled "Lexical Phonology". Although there are slight differences between Kiparsky's and Mohanan's versions of LP, the basic idea is the same, i. e., phonological rules can be used in two different parts of the grammar: rules whose applications are sensitive to the morphological or lexical context of the phonological strings are called lexical rules, and those that apply in phrases and sentences are termed postlexical rules. The two kinds of rules have different domains of application and distinct properties, which motivate the lexical vs. postlexical strata to begin with. Modifications and extensions to the theory appeared soon after (Archangeli 1984; Kiparsky 1985, 2000; Mohanan & Mohanan 1984; Mohanan 1985; Pulleyblank 1986; Booij & Rubach 1987; Paradis 1992; Rubach 1993, 2008, etc. ).

### 3.1 General framework

Lexical Phonology recognizes two types of rule application: lexical rule application and postlexical rule application. There are systematic differences between the two: lexical rules interact with morphological rules, while postlexical rules do not. The specific parameters along which the two types of rule application may differ are a matter of dispute, but the following ones are widely recognized in classical lexical phonology (Pulleyblank 1983; Kiparsky 1982; Mohanna 1982, 1986; Rubach 2008):

The application of lexical rules (1) is limited to the word level, (2) refers to word-internal structures, (3) can be cyclic, (4) must conform to the Strict Cycle Condition if the rule is cyclic, (5) is structure preserving, (6) is limited to derived environments, and (7) has exceptions.

The application of postlexical rules, on the other hand, (1) is on the phrase level, (2) is not limited to words nor can it refer to word-internal structures, (3) is not cyclic, (4) does not conform to Strict Cyclicity, (5) does not have exceptions and can occur in all grammatical categories, (6) has no lexical or morphological conditioning, and (7) occurs after the application of lexical rules.

Since Lexical Phonology distinguishes the lexical and postlexical strata, many phonological phenomena that are sensitive to morphology on different levels can be explained properly. However, Kenstowicz & Rubach (1987) noticed that in Slovak, there is no rule that conforms to all conditions of lexical rules. Booij and Rubach's study (1987) further found that some lexical rules do not interact with morphological rules and are not subject to the Strict Cycle Condition. Therefore, they proposed that not all lexical rules are cyclic and divided lexical rules further into cyclic rules and postcyclic rules. If a rule applies in derived environments and possesses features of cyclic application, it is a cyclic rule. Cyclic rules interact with morphological rules directly. If a rule applies in non-derived environments and refers to information in the lexicon, it is a postcyclic rule. Postcyclic rules are placed in the lexicon and their domain of application cannot be larger than a word. Therefore, rules are of three types: cyclic, postcyclic, and postlexical. Each type of rule has its own features and properties, and only postlexical rules can be used in a larger domain and apply across a word boundary.

Does the postlexical level need further divisions? Hyman (1985) discussed two tone spreading rules in Dagbani and drew an interesting conclusion. The two seemingly similar rules are both postlexical rules. However, one is structure preserving, the other is not. It seems that postlexical rules can also be divided into two types, which Kaisse (1985) termed Postlexical 1 (P1) and Postlexical 2 (P2). The application of P1 rules requires relatively rich information from the grammatical context, is cyclic instead of across-the-board, may be restricted to the juncture between words and hence show strict cyclicity effects, and may have lexical exceptions. P2, on the other hand, refers to the standard postlexical rules in the classic model of Lexical Phonology. The division between P1 and P2 is still controversial and whether the division is a language universal needs further testing. The following is the