Optimality Theory and Mandarin Syllable Structure

优选论

与汉语普通话的音节组构

MA Qiuwu
马秋武 著

南開大學 出版社
NANKAI UNIVERSITY PRESS

Optimality Theory and Mandarin Syllable Structure

优选论与汉语普通话的音节组构

马秋武 著

南开大学出版社
天 津

图书在版编目(CIP)数据

优选论与汉语普通话的音节组构=Optimality Theory and Mandarin Syllable Structure / 马秋武著.
天津:南开大学出版社，2003.8
ISBN 7-310-01911-3

Ⅰ.优... Ⅱ.马... Ⅲ.普通话－音节－研究－英文 Ⅳ.H116.3
中国版本图书馆 CIP 数据核字(2003)第 030048 号

出版发行 南开大学出版社
地址:天津市南开区卫津路 94 号 邮编:300071
营销部电话:(022)23508339 23500755
营销部传真:(022)23508542
邮购部电话:(022)23502200
出版人 肖占鹏
承 印 天津蓟县宏图印务有限公司印刷
经 销 全国各地新华书店
版 次 2003 年 8 月第 1 版
印 次 2003 年 8 月第 1 次印刷
开 本 880mm×1230mm 1/32
印 张 9
字 数 257 千字
印 数 1－1000
定 价 14.00 元

Preface

The past few decades have seen a rapid development of phonological theories, generative or non-generative. These theories have emerged pace to pace with various grammatical doctrines as components of different frameworks of theory of language. Generative phonology, in particular, is most active as a wing of generative grammar in general. But this line of phonological research is relatively freer, or more fruitful in that it is not dominated by any single authority. We have seen many a turn of the trend in this field. And when there appeared the Optimality Theory a few years ago, a radical change began in many respects, which has had significant impact on both phonological and grammatical research.

This Ph. D. dissertation written by Mr. *Ma Qiuwu* is a new achievement in the study of Chinese phonology. It has dealt with the syllabic structure of modern Chinese in an elegant way by applying the OT analysis. As far as I know, this is the first treatise in (and possibly outside) China supplying such a treatment of the same issue. It is a valuable specific study in its own right, which can serve as a new starting point for further research. Meanwhile, it can be used as a reference to the study of OT theory and its application for students of linguistic devotion. This work is praise-worthy, too, in that it shows

the author's aspiration and effort to aim high and strive for first-class academic endeavour.

It can be expected that its publication will be welcomed by the academic circle. And we hope that the author will bring out more successful products in his future pursuits.

Zhou Liuxi（周流溪）
Professor of Linguistics
Beijing Normal University
University of South-Central China
June 30, 2001

Acknowledgements

First, I would like to express my sincere gratitude to Professor *Zhou Liuxi*, my Ph. D. supervisor, for his instruction, support and encouragement over the past three years and for his insightful comments and criticisms on the manuscript of my dissertation. Under his supervision and guidance, I have studied different schools of modern linguistics and have worked out a dozen of papers on contemporary phonology. I owe great debt to Professor *Zhou*'s help for my progress in phonology and the completion of the present dissertation.

My sincere thanks are also given to Professor *Wang Jialing*, China's renowned expert in modern phonology and phonetics. He is an inspiring teacher and a very helpful and encouraging advisor. I am very grateful to him not only for evoking my strong interest in phonology but also for encouraging and guiding me to explore current phonological theories. I have benefited immensely from attending his informative and lively phonology classes in Tianjin Normal University and from personal discussions with him. His insightful comments and critical reading of the entire manuscript have led to much improvement in the analysis and presentation of ideas in my dissertation.

I am greatly indebted to Professor *Wu Tieping*, a very kind and father-like teacher and advisor, for his generous help and instructions in my academic pursuit in Beijing Normal University. Thanks also to Professor *Lin Shuwu* for his constant help and fatherly care, and to Professor *Shen Jiaxuan* and Professor *Lin Maocan* for their invaluable instructions and support. My sincere thanks are also due to Professor *Li Tao*, Professor *Wang Hongjun*, Professor *Zhou Tongchun*, Professor *Ning Chunyan*, Professor *Li Bing*, Professor *Hu Zhuanglin*, Professor *Chen Daxing*, Professor *Bai Renli*, Professor *Zhao Lizhu* for their generous help and good advice, and to Professor *Jonathan Kaye* of SOAS, University of London, and Professor *John McCarthy* of University of Massachusetts for providing me a lot of useful materials.

I would also like to take this opportunity to thank the faculty staff of the Department of Foreign Languages, particularly Mr. *Lin Hong*, Professor *Wang Qiang,* Professor *Wu Zunmin*, Ms. *Lu Peiwen*, Ms. *Pan Jun*, Ms. *Zhang Lixin*; their generous help has made my life and study in Beijing Normal University fruitful, enjoyable and unforgettable. Thanks to Mr. *Li Yonghua*, Ms. *Li Ying* and others of the Department Library of Tianjin Normal University for their generous help, and also to my colleagues *Wen Xu, Zhao Wanpeng, Li Meixia, Wu Jiangsheng,* and others for their help and friendship.

Finally, I would like to express my special thanks to my parents, my wife and my son for their love, understanding and unfailing support; without that I couldn't have accomplished anything in the past three years.

Abstract

This dissertation is concerned with the Optimality Theoretic analysis of Mandarin syllable structure. Optimality Theory, often shortened as OT, was formulated first by Prince and Smolensky(1993) at the beginning of the 1990s; it has been warmly welcomed by the linguists around the world. The central idea of this theory is that universal constraints are ranked and violable; a surface form is considered to be most harmonic or optimal in the sense that it minimally violates or best satisfies a set of hierarchically ranked constraints with respect to the other potential surface forms. OT is typological in the sense that the typological variations among languages are captured by different rankings of the universal violable constraints.

OT is now the most influential phonological (nay, grammatical) theory in the present world and has been applied in the comprehensive analysis of many languages. Is OT applicable in Mandarin Chinese? How to account for different phonological events of Mandarin Chinese from the OT perspective? In what way are the universal constraints ranked for Mandarin syllable structures? The analysis conducted in the present dissertation attempts to give answers to all these questions. The dissertation consists of seven chapters.

Chapter I comments on the topic, motivations and significance of the present dissertation and introduces what will be dealt with in each of the remaining six chapters.

Chapter II provides the theoretical knowledge needed for the analysis of Mandarin syllable structure. In the discussion of the past theoretical proposals, I claim that the syntagmatic identity constraint S-IDENT(F) triggers featural assimilation between any segments within the defined domain and propose that whether a segment is assimilated or not is determined by a set of rankable constraints penalizing the incorporation of any incompatible feature into the targeted segment.

Chapter III reviews the past phonological and phonetic studies relevant to Mandarin syllable structure. In the discussion of the representational models proposed for Mandarin syllable structure, I point out that those representational models, particularly the model proposed by Duanmu (1990), will be confronted with many problems difficult to solve. In this chapter, I also comment on the phonetic studies of Mandarin consonantal and vocalic segments.

Chapter IV provides a detailed discussion on the constraint interaction on Mandarin syllable structure. Within the OT framework, I examine the previous studies on different aspects of Mandarin syllable structure and propose that Mandarin syllable structure must be accounted for by way of different universal constraints. Specifically, Mandarin segments are syllabified with respect to a set of ranked syllable well-formedness constraints while syllable weight is determined by a set of moraic markedness constraints; the surface forms of Mandarin syllable structure reflects resolutions of interaction of all universal constraints including segmental and moraic

markedness constraints and faithfulness constraints. In this chapter, I also discuss the phonological and phonetic events triggered by the universal constraints.

Chapter V makes an analysis of Mandarin syllable phonotactics from the OT perspective. I comment on Chung's (1995) account within the OT framework and reject one of the constraints he proposed, claiming that the conflict of a set of self-conjoined markedness constraints with the assimilation-oriented family constraint S-IDENT(F) can produce the optimal surface forms for Mandarin Chinese. I also demonstrate how to account for the Mandarin CG Co-occurrence restriction from the OT perspective and propose that the local conjunction of constraints must be employed in the OT analysis.

Chapter VI concentrates on Mandarin retroflex suffixation. I argue against the featural treatment of Mandarin retroflexion that Wang(1993) proposed, claiming that Wang's featural treatment cannot predict the typological variations of retroflex suffixation across Chinese languages. I point out that it is empirically evident and theoretically significant to treat the Mandarin retroflex suffix as a monosyllabic morpheme in the phonological analysis. Within the OT framework, I propose that the three types of retroflex suffixation in Chinese languages reported by Lu (1995) can be easily dealt with by different rankings of four universal constraints. In the discussion of Mandarin retroflex suffixation, I propose that the retroflexion is triggered by the assimilation-oriented OO-correspondence constraint S-IDENT(r) and claim that the non-surface-apparent opacity, which occurs in the retroflex suffixation, can be dealt with only with reference to the Sympathy Theory proposed by McCarthy (1998). I

point out that the sympathy selector for Mandarin is ★MAX-IO, the sympathetic faithfulness constraint is IDENT-❀O(r) and the sympathetic candidate, take the 鼓儿([ku^{r}] drum) for example, is ❀[ku^{r}ə^{r}].

Chapter VII is the conclusion of the whole dissertation. In this chapter, I sum up what has been achieved in the discussions made in the previous chapters and what respects are awaiting to be done in the future studies.

Key words: *Mandarin, syllable structure, Optimality Theory, constraints, ranking*

Table of Contents

Chapter I

Introduction

1.1 The Research Topic

This dissertation is concerned with the Optimality Theoretic analysis of different aspects of Mandarin syllable structure. It has been commonly recognized that syllable is an important unit of phonological structures and nearly all the post-SPE phonological theories depend heavily on the establishment of syllable in their phonological analysis (Ma 2001). Up to now, all these post-SPE theories have been employed in an attempt to account for Chinese syllable structure. For instance, Duanmu (1990) studies Chinese syllable structures within the non-linear generative phonology and claims that all Chinese languages have just one uniform underlying syllabic structure with one slot for the onset and two for the rime. Within the feature geometrical framework, Wang (1993) examines the segmental phonology in Beijing Mandarin. The syllable structure for Mandarin Chinese she proposes is similar to Duanmu's (1990) in that she posits two root nodes for the rime and one root node for the onset. But, as far as I know, the syllable structure of Mandarin Chinese has not been systematically discussed in the Optimality Theoretic literature to date, though the non-linear studies on Mandarin

phonology are abundant.

The present dissertation attempts to make a systematic study of different aspects of Mandarin phonology related with the syllable structure from the OT perspective. Optimality Theory, created by Prince and Smolensky (1993), is radically different from earlier generative models in various respects. OT is surface-based and teleological (or output-oriented), rather than derivational. It assumes that universal constraints are violable and languages solely (or principally) differ in their ranking of constraints. This means that the differences between languages can be observed from the rankings of universal constraints. It is obvious that OT "unites description of individual languages with explanation of language typology" (McCarthy 2002:1).

Now, it is necessary and imperative to work out the hierarchical ranking, at least partial ranking, of constraints for Mandarin phonology. The significance of such a work can be summed up as the following two points at least: (1) from the ranking of universal constraints that will be obtained from the present study, we can have a better understanding of some phonological events connecting with Mandarin syllable structure; (2) with the hierarchical ranking of constraints for Mandarin phonology, we can compare Mandarin with other languages and see in what respects Mandarin is different from them.

The language in discussion is Mandarin Chinese, or commonly called Putonghua (the Standard modern Chinese). Since the Standard Chinese is an officially recognized language and its sound system is based on the Beijing Mandarin, here we draw no distinction between Mandarin (Chinese) and Beijing Mandarin. Most often, the term