

中国大学生

英语语调切分的优选论研究

杨军◎著



东南大学出版社
SOUTHEAST UNIVERSITY PRESS

**A Probabilistic Optimality-Theoretic Study
of the Chinese EFL Learners' Intonation-Phrasing
of English Read-Speech**

中国大学生 英语语调切分 的优选论研究

杨 军 著

本书的出版受教育部人文社会科学重点研究基地北京外国语大学中国外语教育研究中心资助,也得到南京邮电大学引进人才科研基金和南京邮电大学外国语学院资助。



东南大学出版社
· 南京 ·

图书在版编目(CIP)数据

中国大学生英语语调切分的优选论研究/杨军著. —南京:东南大学出版社, 2009. 11

ISBN 978-7-5641-1901-0

I. 中… II. 杨… III. 英语—语调—研究 IV. H311

中国版本图书馆 CIP 数据核字(2009)第 186752 号

中国大学生英语语调切分的优选论研究

- 出版发行 东南大学出版社
出版人 江 汉
社 址 南京市四牌楼 2 号
邮 编 210096
网 址 <http://press.seu.edu.cn>
电子邮件 press@seu.edu.cn
经 销 全国各地新华书店
印 刷 南京雄州印刷有限公司
开 本 850 mm × 1168 mm 1/32
印 张 8.25
字 数 214 千字
版 次 2009 年 11 月第 1 版
印 次 2009 年 11 月第 1 次印刷
书 号 ISBN 978-7-5641-1901-0
印 数 1—1200 册
定 价 25.00 元
-

* 东大版图书若有印装质量问题,请直接与读者服务部联系,电话:025-83792328。

* 未经本社授权,本书及光盘内容不得以任何方式转载、演绎,违者必究。



Acknowledgements

Upon completing this dissertation, I am very grateful to a lot of people who have given me invaluable help during the three years of doctoral study in English Department, Nanjing University.

I am most indebted to Prof. Ting Yenren, my supervisor, whose constant overview and insightful comments of my study gave me direction and pace. He spent time and patience from a very busy schedule reading painstakingly all the drafts and talking with me. Without his expertise and professional mode, the dissertation would be impossible.

I am also very grateful to other professors and doctors in my Ph. D. program. The few words from Prof. Wen Qiufang were the forces that drove me forward. Prof. Wang Haixiao helped me not only with logical reasoning but also with kindness and encouragements. Prof. Chen Xinren was critical on class but more like a friend after class. Prof. Wang Lifei introduced me to Lisrel. Dr. Don Snow offered me native insights about English intonation. Dr. Zhang Ren spent hours helping me with the syntactic analysis of the experiment sentences. Dr. Wang Wenyu was sharp but kind, while Dr. Zhou Dandan was kind but sharp. Their comments and suggestions have brought distinctive improvements to my dissertation.

Special thanks also go to Prof. Bruce Hayes who offered me technical help with the OTSoft, Prof. Carlos Gussenhoven who offered me warm invitations to University of Nijmegen for collaborations in intonation studies, Prof. Mary Beckman and Dr. McGory who helped me with the prosodic labeling of the reading samples. Thanks go to Dr. Chen Hua who introduced me to valuable resources and people in the

circle of phonetics. Thanks go to Ms. Helen Beer who shared with me both expertise and native senses of English intonation. I cannot forget Ms. Li Feifei who spared no efforts to find the papers I needed while she was also working very hard on her Ph. D. dissertation in the United States.

I am also grateful to my classmates Li Changsheng, Hu Xuewen, Wang Haizhen, Wang Ling, Mo Junhua and Gao Chao. In the hard days we shared our worries, bitterness, disappointments and the courage to go on. I am grateful to Xu Fang who have taken a lot of care of my thesis defense.

I want to say thanks to Prof. Li Xiaoxiang, the supervisor of my master degree. He encouraged me in the very beginning to take the challenge and hardship of doing Ph. D. research.

I should also credit my subjects for their cooperation in data collection. I should thank Ms. Cao Yuzhen for providing conveniences in contacting the native speakers.

Abstract



This study investigated the intonation-phrasing (i.e., the division of speech into intonation phrases) of English read-speech by 56 tertiary level Chinese EFL learners. The students' readings were recorded and prosodically labeled according to the ToBI prosodic labeling guide (Beckman & Elam 1997). Data from 8 native English speakers were also utilized for comparison. Two steps were taken in conducting the present study. The first step involved the examination of the descriptive features of L2 intonation-phrasing in order to arrive at a general picture of L2 intonation-phrasing and prepare for the next-step phonological analysis. The phonological analysis to explore the interlanguage phonology of intonation-phrasing in the second step was conducted within the framework of Probabilistic Optimality Theory (POT) (Prince & Smolensky 1993; McCarthy & Prince 1993; Boersma and Hayes 2001), of which the core is a set of constraints ranked at varied probabilities. Findings of the study include the following:

First, the Chinese EFL learners produced significantly more types of intonation-phrasings, and demonstrated a greater variation with regard to the extent to which they made the same type of intonation-phrasings on each sentence than the native English speakers. All intonation-phrasings were common in non-native-speaker (NNS) production while none appeared in native-speaker (NS) labeled data. The NNSs produced significantly more disfluencies than the NSs. Linguistic conditions of the experiment sentences, especially sentence length and syntactic complexity, had significant effects on L2 intonation-phrasing. There were evidences suggesting that L2 intonation-phrasing was also susceptible to the influence of L1 and on-

line production management.

Second, L2 and L1 constraint ranking were primarily different with regard to two types of constraints. One type was phonological length constraints: Balance and BinMaP. The former represents the requirement of syllable-timing in intonation-phrasing as is usually the case in Chinese. The latter represents the requirement of stress-timing as is the case in English. The other type was alignment constraints at XP level: AlignXP, Left and AlignXP, Right. The former favors more intonational breaks in speech than the latter. The overall constraint ranking of L2 intonation-phrasing featured BinMaP >> AlignXP, Left >> Balance >> AlignXP, Right, while that of L1 featured BinMaP >> AlignXP, Right >> AlignXP, Left >> Balance (“ >> ” stands for “ ranks higher than ”). Compared to their peer constraints, AlignXP, Left and Balance were respected to a greater extent in L2 constraint ranking than in L1. L2 constraint ranking varied systematically with linguistic conditions of the experiment sentences. Across the different linguistic conditions, the ranking probabilities of Balance dominating BinMaP, which represents L1 influence in L2 intonation-phrasing, tended to change in the opposite directions to that of AlignXP, Left dominating AlignXP, Right, which represents the efforts devoted to on-line production management. In other words, L1 influence and on-line production management bore upon interlanguage phonology of intonation-phrasing in a probabilistic and interactive way in competing for the limited cognitive resources available to the interlanguage phonology, suggesting a threshold of on-line production management for L1 influence to emerge.

Third, the average coverability (i. e. , the percentage of intonation-phrasings predicted by the economical constraint set of intonation-phrasing) of the economical constraint set of intonation-phrasing was 81% for L2 data and 100% for L1 data. In examining the

residual or extraneous L2 data, some provisional constraints were postulated. They were redundant to the economical set of constraints. These redundant constraints turned out to be necessary in explaining the residual or extraneous data of L2 intonation-phrasing. By postulating these redundant constraints in addition to an economical set the average coverability increased to 86%. All these suggested that there was redundancy in interlanguage phonology of intonation-phrasing.

The POT methodology adopted in this study demonstrated obvious advantages over the descriptive analysis in analyzing the complexity of L2 speech data, especially in accounting for the effects of on-line production management and its interactions with L1 influence. More importantly, the present study contributed to intonation-phrasing studies in arriving at a steady set of OT constraints of intonation-phrasing.

本研究以 56 名中国大学生为对象,考察了他们英语朗读的语调切分(intonation-phrasing),即以语调短语为单位的语流切分。旨在了解二语语调切分的描述性特征和探索语调切分的中介语音系。学生朗读在录音后进行了基于 ToBI 标准(Beckman 和 Elam 1997)的韵律标注。为便于比较,也分析了 8 名英语母语者的语调切分。本研究的思路可以概括为两大步骤:一、通过对二语语调切分的描述性分析(主要涉及语调切分的类别和频数),了解二语语调切分的概貌,并以实证方法确立朗读材料的语言特征、母语影响和在线产出管理在二语语调切分中的作用;二、在此基础上,以概率性优选论(Prince 和 Smolensky 1993; McCarthy 和 Prince 1993; Boersma 和 Hayes 2001)为理论框架分析语调切分的中介语音系(主要涉及制约条件的排列顺序和排列概率),找出二语语调切分的概率性制约条件层级排列。

步骤一对二语语调切分的分析结果如下:与英语母语者相比,中国学生在各个句子上产出的语调切分种类更多,语调切分的趋同性起伏较大。不当切分在二语语调切分中很常见,而在正常母语语调切分中则未见一例。二语学习者比母语者产出更多非流利。朗读材料的语言特征,尤其是句长和句法复杂性对二语语调切分有显著影响。证据表明,二语语调切分也受母语和在线产出管理的影响。

步骤二对中介语音系的概率性优选论分析结果如下:一、二语和一语语调切分的制约条件排列的差别主要体现在两类制约条件的排列上,一类是音系长度制约条件:Balance 和 BinMaP。前者反映的是汉语语调切分追求音节数均衡的倾向。后者反映的是英语语调切分追求重音数均衡的倾向。另一类是 XP 层面的语调短语边界的左对齐条件 AlignXP, Left 和右对齐条件 AlignXP, Right。相

对于右对齐条件 *AlignXP, Right* 而言, *AlignXP, Left* 倾向于在语句中设置更多语调短语边界。就朗读者在所有实验语句上的整体表现而言, 二语语调切分的制约条件排列的特点为: *BinMaP* >> *AlignXP, Left* >> *Balance* >> *AlignXP, Right*, 一语语调切分的制约条件排列的特点是 *BinMaP* >> *AlignXP, Right* >> *AlignXP, Left* >> *Balance* (“>>”代表“排列层级高于”)。换句话说, 偏向音节时定的音系长度制约条件 *Balance* 和倾向于设置更多句内语调切分的左对齐条件 *AlignXP, Left* 的排列层级在中介语音系中比在一语音系中相对较高, 也就是说相对更为重要。二, 二语制约条件排列依朗读材料的语言特征发生有规律的变化, 这主要体现在 *Balance* 统制 *BinMaP* 和 *AlignXP, Left* 统制 *AlignXP, Right* 的两类概率上。前者反映的是学习者母语的影响, 后者反映的是学习者投入在线产出管理的程度。在不同语言特征的句子, 这两类统制概率发生反向变化。也就是说, 母语影响和在线产出管理在争夺有限的认知资源的过程中, 以一种概率性的相互作用的方式影响中介语音系。进一步说, 二语语调切分中的母语影响可能存在一个在线产出管理的阈值, 当在线产出管理的压力超过一定水平时, 母语影响被抑制。本研究将此命名为“母语影响的在线产出管理阈值假设”。

本研究中经济性制约条件集的覆盖率, 即可预测语调切分的比例, 二语平均为 81%, 一语为 100%。对于有些残余或异常数据的解释必须诉之于一些临时性的制约条件, 这些条件相对于经济性制约条件集的成员而言是冗余条件。通过增加这些冗余条件, 二语平均覆盖率增至 86%。这说明语调切分的中介语音系存在冗余性。

运用概率性优选论分析二语语调切分表现出方法论的先进性, 突出表现在对在线产出管理的作用以及它与学习者母语的相互作用的解释方面。本研究确立了一个统一稳定的语调切分的优选论制约条件集, 是对语调切分研究的另一重要贡献。

Table of Contents

Acknowledgements	I
Abstract	III
Introduction	1
0.1 Aims of the study	2
0.2 Outline of the dissertation	7

Part One: Research Background

Chapter 1 Literature Review	11
1.1 Intonation phrase and intonation-phrasing	11
1.2 Research on intonation-phrasing	15
1.3 Problems with existing intonation-phrasing studies	27
Chapter 2 A Probabilistic Optimality—Theoretic Framework	29
2.1 OT basics	29
2.2 An outline of POT	34
2.3 The learnability issue in OT	38
2.4 The POT interlanguage phonology	43
2.5 Summary	47
Chapter 3 The Economical Constraint Set of Intonation-Phrasing	48
3.1 Sense Unit Condition	48
3.2 Constraints of intonation-phrasing	50
3.3 Summary	64

Part Two: Methodology

Chapter 4	Research Design	67
4.1	Research questions	67
4.2	Research hypotheses	68
4.3	Participants	70
4.4	Instruments	71
4.5	Data collection	74
4.6	Data analysis	74
4.7	Summary	96

Part Three: Results and Discussions

Chapter 5	L2 Intonation-Phrasing: The Distinct Features	99
5.1	Introduction	99
5.2	Types and frequencies of L2 intonation-phrasing	100
5.3	Linguistic conditions and L2 intonation-phrasing	104
5.4	On-line production management and L2 intonation-phrasing	108
5.5	L1 influence and L2 intonation-phrasing	112
5.6	Summary	113
Chapter 6	POT Interlanguage Phonology of Intonation-Phrasing	115
6.1	Introduction	115
6.2	Constraint ranking of L2 intonation-phrasing	116
6.3	Variations of constraint rankings across different linguistic conditions	121
6.4	The influence of L1 and on-line production management in interlanguage phonology	147
6.5	Summary	151

Chapter 7	Redundancy in Interlanguage Phonology of	
	Intonation-Phrasing	153
7.1	Introduction	153
7.2	The coverability of the economical constraint set	153
7.3	Residual data and redundant constraints	155
7.4	Discussion	174
7.5	Summary	178

Part Four: Conclusion

Chapter 8	Concluding Remarks	181
8.1	Major findings	181
8.2	Implications	183
8.3	Limitations	191
8.4	Suggestions for future research	192
8.5	Summary	194

References	197
-------------------------	-----

List of Tables



Chapter 2

Table 2.1	Stochastic ranking values and pairwise domination probabilities	37
Table 2.2	An illustration of POT approach to L1 influence	45

Chapter 4

Table 4.1	The average frequency of off-line pause-marking	75
Table 4.2	The percentage of excluded cases on each sentence	83
Table 4.3	The factorial typology of S2	91
Table 4.4	The constraint ranking of S2	92
Table 4.5	The ranking probabilities of the focused constraints of S2	92

Chapter 5

Table 5.1	The statistics of Type Count	101
Table 5.2	The statistics of Lead Type	102
Table 5.3	The statistics of Lead Type Weight	102
Table 5.4	The statistics of Average IPh Frequency	103
Table 5.5	The statistics of Ill Type Count and Ill Type Weight	104
Table 5.6	The Spearman correlations of Sentence Length with related variables	105
Table 5.7	The Spearman correlations of Syntactic Complexity with related variables	106
Table 5.8	The Spearman correlations of Syllable Density with related variables	107
Table 5.9	The NNS PPMR and Lead Type Weight	108
Table 5.10	The statistics of DF Count	111

Table 5. 11	The Spearman correlations of Syllable Density with DF Count	112
-------------	---	-----

Chapter 6

Table 6. 1	The overall constraint ranking	117
Table 6. 2	The ranking probabilities of the focused constraints on overall rankings	119
Table 6. 3	The constraint rankings on short sentences (S1, S2, S3, S8)	122
Table 6. 4	The ranking probabilities of the focused constraints on short sentences	122
Table 6. 5	The constraint rankings on long sentences (S4, S5, S6, S7, S9, S10)	125
Table 6. 6	The ranking probabilities of the focused constraints on long sentences	127
Table 6. 7	The constraint rankings on long sentences excluding S9 and S10 (S4, S5, S6, S7)	129
Table 6. 8	The ranking probabilities of the focused constraints on long sentences excluding S9 and S10	129
Table 6. 9	The ranking probabilities of the focused constraints on short vs. long sentences	131
Table 6. 10	The constraint rankings on multi-IP sentences (S1, S2, S6, S7)	134
Table 6. 11	The ranking probabilities of the focused constraints on multi-IP sentences	134
Table 6. 12	The constraint rankings on single-IP sentences (S3, S4, S5, S8, S9, S10)	135
Table 6. 13	The ranking probabilities of the focused constraints on single-IP sentences	135
Table 6. 14	The constraint rankings on single-IP sentences excluding S9 and S10 (S3, S4, S5, S8)	137

Table 6.15	The ranking probabilities of the focused constraints on single-IP sentences excluding S9 and S10	137
Table 6.16	The ranking probabilities of the focused constraints on multi-IP vs. single-IP sentences	139
Table 6.17	The constraint rankings on short multi-IP sentences (S1, S2)	141
Table 6.18	The constraint rankings on long multi-IP sentences (S6, S7)	142
Table 6.19	The constraint rankings on long single-IP sentences (S4, S5, S9, S10)	143
Table 6.20	The constraint rankings on long single-IP sentences excluding S9 and S10	143
Table 6.21	The constraint rankings on short single-IP sentences (S3, S8)	144
Table 6.22	The ranking probabilities of the focused constraints across mixed linguistic conditions	145

Chapter 7

Table 7.1	The NNS coverability of the economical constraint set	154
Table 7.2	The factorial typology of S5	157
Table 7.3	The NS and NNS intonation-phrasings of S5	157
Table 7.4	The NNS off-line marking of subject and utterance-end PP	160
Table 7.5	The factorial typology of S9	167
Table 7.6	The NS and NNS intonation-phrasings of S9	167
Table 7.7	The NS and NNS intonation-phrasings of S7	170
Table 7.8	The NS and NNS intonation-phrasings of S10	173

List of Tableaux

Chapter 2

Tableau 2.1	An illustration of OT operations (1)	31
Tableau 2.2	An illustration of OT operations (2)	32
Tableau 2.3	The situation of “being harmonically bound” (Prince & Smolensky 1993)	33
Tableau 2.4	The situation of “being blocked in evaluation”	33
Tableau 2.5	An illustration of non-ranking	34
Tableau 2.6	An illustration of “the emergence of the unmarked”	42

Chapter 3

Tableau 3.1	Selkirk’s (2000) analysis of English VP-internal intonation-phrasing	52
Tableau 3.2	The default order of AXR and AXL (Selkirk’s example reanalyzed)	54
Tableau 3.3	POT re-analysis of Selkirk’s (2000) example	61
Tableau 3.4	OT analysis of Chen’s (2000) example following Selkirk (2000)	62
Tableau 3.5	OT analysis of Chen’s (2000) example adding Balance	62
Tableau 3.6	POT analysis of Chen’s (2000) example (1)	63
Tableau 3.7	POT analysis of Chen’s (2000) example (2)	63

Chapter 4

Tableau 4.1	of S2	89
-------------	-------------	----