

THEORETICAL IMPLICATIONS OF OCP EFFECTS ON FEATURES
IN OPTIMALITY THEORY

by

Haruka Fukazawa

Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland at College Park in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
1999

Advisory Committee:

Professor Linda Lombardi, Chair/Advisor
Professor Laura Benua
Professor Luigi Burzio
Professor Mary Ellen Scullen
Professor Paul Smolensky

TABLE OF CONTENTS

Chapter 1: OCP in Optimality Theory	1
1.1 Optimality Theory (Prince and Smolensky 1993)	1
1.2 Objectives	2
1.3 Summary and Overview	9
Chapter 2: Typology of OCP on Features in OT	13
2.1 OCP in Previous Research	13
2.1.1 OCP in Autosegmental Phonology	13
2.1.1.1 Leben (1973) and Goldsmith (1976)	13
2.1.1.2 McCarthy (1986), Myers (1987) and Odden (1986, 1988)	14
2.1.1.3 Summary	15
2.1.2 OCP in OT	15
2.1.2.1 OCP as Self-conjunction of Markedness Constraints (Itô and Mester 1996, Alderete 1997)	16
2.1.2.2 Summary	22
2.2 Typology of OCP on Features	22
2.2.1 Four Types of Languages	22
2.2.1.1 Type 1: OCP Violation	28
2.2.1.2 Type 2: Feature Fusion	28
2.2.1.3 Type 3: Feature Deletion and Insertion	30
2.2.1.4 Type 4: Featural and Segmental Deletion	34
2.3 The Difference of the Constraint Ranking Representing Each Type in Typology	35
2.3.1 The Constraints for OCP on Features	35
2.3.2 The Faithfulness Constraints for Features	37
2.3.2.1 Correspondence Theory (McCarthy and Prince 1995)	37
2.3.2.2 Featural Faithfulness in Optimality Theory	40
2.3.3 Constraints Interaction to Predict the Typology	50
2.3.3.1 Type 1 Language: OCP Violation	52
2.3.3.2 Type 2 Language: Feature Fusion	55
2.3.3.3 Type 3 Language: Feature Deletion and Insertion	58
2.3.3.4 Type 4 Language: Featural and Segmental Deletion	60
2.4 Summary	63
Chapter 3: Actual Analyses: Implementation of the Tools	65

3.1 Type 2: Morpheme Structure Constraints (MSC) in Ponapean	65
3.1.1 Ponapean Labials	66
3.1.2 An Analysis within the OT Framework	68
3.1.2.1 OCP[lab] >> UNIFORMITY [lab]	68
3.1.2.2 MAX [lab] >> UNIFORMITY [lab]	70
3.1.2.3 MAX-IO	72
3.1.2.4 DEP-[F]	73
3.1.2.5 Impossible Sequence: *[p ^w ap]	75
3.1.2.6 Summary	78
3.2 Type 3: Coronal Dissimilation and The Emergence of The Unmarked (TETU) in Dakota Reduplicated Verbs	81
3.2.1 Coronal Dissimilation in Dakota Reduplicated Verbs	82
3.2.2 An Analysis within the OT Framework	83
3.2.2.1 Faithfulness Constraints for Base and Reduplicants: Correspondence Theory	83
3.2.2.2 OCP[cor] >> MAX[cor]-BR	83
3.2.2.3 HAVEPLACE >> DEP[dor]-BR	84
3.2.2.4 UNIFORMITY[cor] >> MAX[cor]-BR, and MAX-BR >> DEP[dor]-BR	85
3.2.2.5 *Phar] _σ >> *Dor, *Lab >> *Cor >> *Phar	87
3.2.2.6 DEP[lab]-BR >> DEP[dor]-BR	90
3.2.3 Lexical Compounds	92
3.2.4 Coda Deletion Derived from TETU	96
3.2.5 Summary	102
3.3 Type 4: Deletion and Spirantization in Basque Consonant Clusters	103
3.3.1 Previous Analyses in Autosegmental Phonology	104
3.3.2 Analyses within the OT Framework	108
3.3.3 Deletion in the Sequence of [stop][stop]	109
3.3.3.1 OCP[stop] >> MAX-IO, MAX[stop]	109
3.3.3.2 OCP[stop], HAVEMANNER >> MAX-IO, MAX[stop]	110
3.3.3.3 MAXONS[stop]	111
3.3.3.4 DEP[cont] >> MAX-IO	114
3.3.3.5 UNIFORMITY[stop] >> MAX-IO, MAX[stop]	115
3.3.3.6 DEP-IO >> MAX-IO	116
3.3.3.7 Summary	117
3.3.4 Spirantization in the Sequence[stop, cont][stop]	119
3.3.5 Deletion in the Sequence [stop][stop, cont]: MAXONS[stop] >> MAX-IO	120
3.3.6 Impossibility of Deletion of a Segment in the Sequence of an Affricate and a Stop	122
3.3.7 Impossibility of Spirantization of a Stop in the Sequence of an Affricate and a Stop	123

3.3.8 Summary of the Sequence of an Affricate and a Stop	124
3.3.9 Summary of the OCP Effects on [stop]	126
Chapter 4: OCP on Features, Local Conjunction and Sympathy Theory: An Analysis of Yucatec Maya Consonant Clusters	130
4.1 Introduction	130
4.2 Yucatec Maya Consonant Clusters	132
4.3 The Previous Analyses in Autosegmental Phonology: What Triggers the OCP Effects	133
4.4 An Analysis within the OT Framework	138
4.4.1 An Analysis with Single Constraints Does Not Work	138
4.4.2 An Analysis with Local Conjunction	142
4.4.2.1 Local Conjunction (Smolensky 1993, 1995, 1997)	142
4.4.2.2 OCP[Place]&OCP[stop]	143
4.5 How to Satisfy the Conjunction: The Ranking in Yucatec Maya	146
4.5.1 OCP[Place]&OCP[stop] >> MAX[Place], OCP[stop] >> OCP[Place], MAX[stop]	146
4.5.2 MAX-IO, HAVEMANNER >> DEP[cont]	151
4.5.3 UNIFORMITY[stop] and DEP-IO	155
4.5.4 MAXONS[stop]	156
4.6 Sympathy Theoretic Account of the Yucatec Alternation: /t/ → [h]	159
4.6.1 Issue	159
4.6.2 Sympathy Theory (McCarthy 1997b, 1998)	161
4.6.3 Rule-based and Bare OT (without Sympathy Theory) Account of the Stop Alternation	169
4.6.4 Sympathy Theory Account of the Alternation	174
4.6.4.1 Selecting the Sympathy Candidate: DEP[cont]⊛	175
4.6.4.2 OCP[Place]&OCP[stop] >> MAX[Place]⊛O >> MAX[Place]IO: Account for the Winning Candidate	178
4.6.5 Other Phenomena	179
4.6.5.1 The Affricate Alternation with Sympathy Theory	180
4.6.5.2 A Sequence of a Glottal Stop and a Non-homorganic Stop	180
4.6.5.3 Impossibility of [x] or [f]	184
4.6.6 Summary of the Section	187
4.7 Local Conjunction (Smolensky 1993, 1995, 1997)	189
4.7.1 Introduction	189

4.7.2 RTR Rightward Harmony in the Southern Palestinian Dialect of Arabic (McCarthy 1996b)	193
4.7.2.1 An Analysis of the Data with Ranking of Each Single Constraint	194
4.7.2.2 Introduction of Local Conjunction	197
4.7.2.3 Discussion	199
4.7.3 Front Vowel Raising in the Northern Mantuan Italian Dialect (Miglio 1995)	200
4.7.3.1 An Analysis with Ranking of Each Single Constraint	201
4.7.3.2 Introduction of Local Conjunction	204
4.7.3.3 Discussion	206
4.7.4 Vowel Raising in NzEbi (Kirchner 1996)	206
4.7.4.1 An Analysis with Ranking of Each Single Constraint	208
4.7.4.2 Introduction of Local Conjunction	210
4.7.4.3 Discussion	212
4.7.5 Local Conjunction from the Two Different Families	213
4.7.6 Summary and Conclusion of the Section	215
4.8 Summary and Conclusion of the Chapter	218
Chapter 5: OCP on Feature and Multiple Input-Output Faithfulness Relations in Japanese	221
5.1 Introduction	221
5.2 Rendaku (Sequential Voicing) and Lyman's Law	222
5.2.1 Rendaku (Sequential Voicing)	222
5.2.2 Lyman's Law	225
5.2.3 Stratum-specificity of Rendaku and Lyman's Law	229
5.3 Multiple Input-Output Faithfulness Relation	231
5.3.1 Introduction	231
5.3.2 Multiple Faithfulness Relations in Correspondence Theory	233
5.4 Five Phonological Patterns in Japanese	239
5.4.1 Five Sub-lexica	239
5.4.2 Stratum-specific Phonological Phenomena	240
5.5 Five Input-Output Faithfulness Relations in Japanese	243
5.5.1 Post Nasal Voicing	245
5.5.2 Impossibility of Voiced Geminate	247
5.5.3 Prohibition of [p]	249
5.6 An Analysis of Rendaku and Lyman's Law with Multiple Input-Output Faithfulness Relation	252

5.7 Comparison of the Multiple Input-Output Model with the System of Re-ranking of Faithfulness Constraints	257
5.7.1 Re-ranking of Faithfulness Constraints (Itô and Mester 1995b)	257
5.7.2 Invariant Ranking Hypothesis (IRH) in OT	261
5.7.3 Why Faithfulness Is Different from Markedness	262
5.7.4 Interpretation of Faithfulness and Ranking of Markedness	262
5.7.5 Counter Evidence for "Hierarchy of Foreignness" Constraint	265
5.7.6 Multiple Input-Output Faithfulness Constraints and the Core-Periphery Structure (Fukazawa, Kitahara, and Ota 1998, to appear)	266
5.7.7 Empirical Evidence for Superiority of the Model of Multiple Input-Output Faithfulness Constraints (Fukazawa, Kitahara, and Ota 1998, to appear)	269
5.8 Conclusion of the Chapter	274
Chapter 6: Conclusion and Implication	276
Bibliography	286

LIST OF TABLES

1.	Example Languages in Type 3	31
2.	Correspondence Constraints for Segments	39
3.	Correspondence Constraints for Features	47
4.	Proposed Featural Faithfulness Constraints	49
5	The Features in Obstruents	182
6.	General Chart of Research Proposing Local Conjunctions	216
7.	Research Proposing Self Conjunctions	216
8.	Summary of the Satisfaction of the Markedness Constraints in Each Stratum	242