NONITERATIVITY IS AN EMERGENT PROPERTY OF GRAMMAR

A dissertation submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

LINGUISTICS

by

Aaron F. Kaplan

June 2008

The Dissertation of Aaron F. Kaplan is approved:

Professor Armin Mester, Chair

Professor Junko Ito

Professor Jaye Padgett

Lisa C. Sloan
Vice Provost and Dean of Graduate Studies
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 A Typology of Pseudo-Noniterativity</td>
<td>44</td>
</tr>
<tr>
<td>1.7 True Noniterativity</td>
<td>46</td>
</tr>
<tr>
<td>1.8 Outline</td>
<td>48</td>
</tr>
<tr>
<td>2 Vowel Harmony in Lango</td>
<td>49</td>
</tr>
<tr>
<td>2.1 Introduction</td>
<td>49</td>
</tr>
<tr>
<td>2.2 Harmony in Lango</td>
<td>53</td>
</tr>
<tr>
<td>2.3 Licensing as an Alternative to Iterativity</td>
<td>72</td>
</tr>
<tr>
<td>2.3.1 The Licensing Analysis</td>
<td>72</td>
</tr>
<tr>
<td>2.3.2 Benefactive Verbs</td>
<td>88</td>
</tr>
<tr>
<td>2.4 Alternatives</td>
<td>92</td>
</tr>
<tr>
<td>2.4.1 Positional Faithfulness with Agree</td>
<td>93</td>
</tr>
<tr>
<td>2.4.2 Optimal Domains Theory and Headed Spans</td>
<td>97</td>
</tr>
<tr>
<td>2.4.3 Banning Disharmony</td>
<td>98</td>
</tr>
<tr>
<td>2.4.4 Summary</td>
<td>101</td>
</tr>
<tr>
<td>2.5 Fast-Speech Licensing: Attraction to Stress</td>
<td>102</td>
</tr>
<tr>
<td>2.6 Akposso</td>
<td>106</td>
</tr>
<tr>
<td>2.7 Conclusion</td>
<td>116</td>
</tr>
<tr>
<td>3 Umlaut in Chamorro</td>
<td>119</td>
</tr>
<tr>
<td>3.1 Introduction</td>
<td>119</td>
</tr>
<tr>
<td>3.2 The Facts and the Problem</td>
<td>121</td>
</tr>
<tr>
<td>3.2.1 Noniterativity in Chamorro</td>
<td>121</td>
</tr>
<tr>
<td>3.2.2 Other Properties of Umlaut</td>
<td>125</td>
</tr>
<tr>
<td>3.2.2.1 Optional Umlaut on Secondary Stress</td>
<td>125</td>
</tr>
</tbody>
</table>
4 Tonal Noniterativity

4.1 Tone Spreading and Shifting

4.2 Peak Delay

4.3 Peak Delay in Chichewa
   4.3.1 Tone Spread as Peak Delay
   4.3.2 Peak Delay and the OCP

4.4 Peak Delay in Kikuyu
   4.4.1 Tone Shift in Kikuyu
   4.4.2 Tone Shift as a Phonetic Phenomenon
      4.4.2.1 Peak Delay and Tone Shift
      4.4.2.2 Tone Shift and Downstep
   4.4.3 Tone Shift as a Phonological Phenomenon
   4.4.4 Other Tonal Alignment Patterns in PDT

4.5 Optimal Domains Theory
   4.5.1 Chichewa in ODT
   4.5.2 Kikuyu in ODT

4.6 Comparison of PDT and ODT

4.7 Other Analyses of Noniterativity in Tone
   4.7.1 Local
   4.7.2 Lag

4.8 Other Tonal Phenomena

4.9 Conclusion

5 Postlexical Noniterativity

5.1 Introduction
5.2 Nez Perce Vowel Harmony 278
  5.2.1 Lexical Harmony 278
  5.2.2 Postlexical Harmony 284

5.3 Other Postlexical Harmony Phenomena 294
  5.3.1 Iterative Postlexical Harmony in Somali 294
  5.3.2 Vata: Markedness Suppression 296
    5.3.2.1 Harmony in Vata 296
    5.3.2.2 Iterative Optionality and Markedness Suppression 299
  5.3.3 Phonetic Effects in Akan 305

5.4 Irish Palatalization 309

5.5 Conclusion 319

6 Conclusion 321

References 328
Abstract

Noniterativity is an Emergent Property of Grammar

by

Aaron F. Kaplan

Many rule-based theories of phonology include an iterativity parameter so that rules can either be stipulated to apply as many times as possible or restricted to a single application. Optimality Theory cannot replicate this simple device: Constraints that produce iterativity (Agree, Align, Spread, Parse...) do not produce noniterativity with a simple parameter switch. Furthermore, OT’s architecture prevents the generation of true noniterativity: In order to determine whether or not a feature has spread just once, for example, the markedness constraint that imposes noniterativity must know the input configuration. But markedness constraints are not allowed to access the input. OT, then, is more restrictive than rule-based phonology on this point and predicts that truly noniterative phenomena—processes defined in part by a noniterativity requirement—should not exist.

This dissertation evaluates whether OT is too restrictive in this prediction by examining five seemingly noniterative phenomena in detail: vowel harmony in Lango, umlaut in Chamorro, tone spread in Chichewa, tone shift in Kikuyu, and postlexical spreading in various languages. The noniterative nature of these phenomena is argued to be a byproduct of a confluence of factors that are not concerned with noniterativity specifically. For example, in Lango and Chamorro,
spreading from affixes to the root is noniterative not because a parameter stipulates this kind of spreading, but because a constraint motivates spreading to the root. Once the root (which is adjacent to the affix) is reached, further spreading is unmotivated. Other factors that can lead to noniterativity are identified. The conclusion is that no noniterative phenomenon requires an analysis that explicitly calls for noniterativity, and thus rule-based phonology is wrong to adopt an iterativity parameter. The implication of this result is that phonological grammars are, as OT asserts, concerned with representations and not the processes that give rise to these representations. The absence of true noniterativity lends support for OT in an area that at first glance presents a strong challenge to the theory.
Many people have contributed to this dissertation in various ways. I wish to thank Armin Mester first, for being a patient advisor and for being quite generous with his time and input. Thanks also to the other members of my committee, Jaye Padgett and Junko Ito, whose feedback has greatly improved all parts of this dissertation. All three members of my committee have been ceaselessly supportive throughout my graduate career, as has the rest of the faculty in UCSC’s linguistics department. I could not ask for better mentors in learning how to be a professional linguist.

I am also grateful to all the graduate students with whom I’ve shared time at Santa Cruz. The comradery in this department has made graduate school a very pleasant experience, and I regret that I must eventually leave Santa Cruz. The high level of scholarship produced by other students and the faculty has always pushed me to do better work myself, and I only hope to have lived up to the standard they set. I especially wish to thank Anya Lunden and David Teeple, with whom I’ve had countless productive discussions, phonological and otherwise. I have benefited greatly from their questions and suggestions.

I wish to thank a number of other people who have been generous with their time even when they were not personally invested in my work: Larry Hyman, Randy Hendrick, Lev Blumenfeld, Chip Gerfen, Joe Pater, Jennifer Smith, and Michael Marlo. Larry Hyman and Michael Marlo especially deserve credit for steering me through the difficult territory of tonology—their guidance greatly
improved Chapter 4 of this dissertation. (Of course, remaining errors in that chapter are my own.)

My high school, the North Carolina School of Science and Mathematics, and its teachers—especially John Woodmansee—deserve recognition for setting me on the path that has led to this dissertation. Those two years left an indelible mark on my intellectual and personal life.

My family deserves thanks, too, for letting me move all the way from North Carolina to California. My parents made that move much easier than it could have been, and my sister, Anna, makes sure I return to North Carolina as often as possible.

And finally, thank you to Abby, for everything.