

Licensing and Noniterative Harmony in Lango
Aaron F. Kaplan
University of California, Santa Cruz

In ATR harmony in Lango (Noonan 1992; vowel inventory in (1)), both values of [\pm ATR] can spread progressively (2), subject to complex conditions (Smolensky 2006). [+ATR] can also spread regressively, and when it does, only the root-final vowel is targeted (3). This limitation isn't due to positional faithfulness protecting initial vowels (see (3b)). The difference between Lango and typical harmony systems where the harmonizing feature reaches all vowels in the word is easily captured in rule-based theories that incorporate an iterativity parameter (e.g. Archangeli & Pulleyblank 1994). Iterative and noniterative rules produce typical harmony and Lango, respectively. Standard analyses of harmony in Optimality Theory (OT; Prince & Smolensky 1993) like AGREE (e.g., Lombardi 1999, Baković 2000), ALIGN (McCarthy & Prince 1993), or SPREAD (Padgett 2002, Walker 2000) don't have this luxury. With no iterativity parameter, the whole-word spreading effects of these constraints are not easily suppressed. Lango's spreading resembles harmony, but harmony-driving constraints can't produce it. Rule-based theories seem to have the upper hand.

Lango lets us address the question of what it means to be (non)iterative in phonology. An OT analysis of Lango rooted in Positional Licensing (Zoll 1998a,b, Itô & Mester 1999) is more insightful and provides better empirical coverage than a rule-based account. Roots are "prominent positions which license more contrasts than [non-roots]" (Urbanczyk 2006:194). Features in suffixes are more prominent if they are also carried by a root segment. This is the impetus for a Licensing constraint requiring ATR features to be linked to some root segment. Spreading in either direction satisfies Licensing as long as the suffix's ATR feature is shared by some root segment on the surface. Crucially, spreading minimally from the suffix to the root-final vowel is sufficient to satisfy Licensing. Neither *bɔŋoni* (3a) nor **bɔŋoni* violates Licensing, and lower-ranked Faithfulness constraints favor the former (4). While exploiting a rule-based iterativity parameter makes for a simple account of Lango, it provides no insight into why minimal spreading might be desirable. The Licensing account explains this curious property: Achieving positional prominence, not harmony per se, is responsible for Lango's harmony, and noniterativity is a byproduct of constraint interaction.

Other data also point to the superiority of Licensing over a noniterative rule. Some forms show spreading that is consistent with Licensing but that isn't simple noniterative spreading. The suffix /-o/ does not trigger regressive harmony, as *o-nɛn-o-wa* 'he/she saw us' shows (**o-nɛn-o-wa*). But *o-nɛn-o-wu* 'he/she saw you (pl)' has regressive spreading targeting the root /nɛn/. The source of harmony in this form must therefore be /-wu/. The Licensing analysis accounts for this with no further addition: [+ATR] must spread through the /o/ to the /ɛ/ in order to be linked to a root segment. But the rule-based account is at an impasse. To account for *bɔŋoni*, we need a rule spreading [+ATR] between adjacent syllables noniteratively. But in *o-nɛn-o-wu*, the source /u/ is not syllable-adjacent with the target /ɛ/. Any modification of the original rule to account for *o-nɛn-o-wu* renders the rule incapable of producing *bɔŋoni*. An iterative rule that spreads [+ATR] from /u/ to /o/ and then to /ɛ/ predicts **bɔŋoni*, and allowing harmony between nonadjacent syllables predicts **bɔŋoni*. The only option is to posit a new ad hoc rule to account for *o-nɛn-o-wu*.

On close inspection, we see that noniterativity does not mean performing some operation exactly once. Rather, it's a strategy for complying with output conditions in the least destructive way. The lack of explicit mention of iterativity in OT accounts of Lango and typical harmony highlights a problem with their rule-based competitors. Iterativity is essential to many rule-based theories, yet as the Licensing analysis of Lango shows, noniterativity can be the byproduct of constraints that are not concerned with noniterativity. Likewise, iterative spreading is an epiphenomenon caused by constraints (AGREE, ALIGN, etc.) that promote certain configurations over others without specifying how many times assimilation should happen. If (non)iterativity is truly epiphenomenal, it should not be a part of phonological theory's architecture. The ease with which rules can switch between iterative and noniterative spreading appeared to be an advantage, but ATR harmony in Lango reveals it to be a liability. If Lango is indicative, the dichotomy between itera-

