Maasai vowel harmony and Harmonic Serialism
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ATR vowel harmony in Maasai has posed many analytical problems for phonologists. The purpose of this paper is to consider whether harmony in Maasai can be accounted for with Harmonic Serialism (HS) as is proposed by McCarthy (2008). Harmonic Serialism limits GEN to making only one change per step. The winner from each step progresses until the input and output reach equilibrium (Prince and Smolensky 1993/2004; McCarthy 2009).

One aspect of Maasai ATR harmony that is difficult to account for is that the harmony is both bidirectional and Right to Left:

(1) /I+ton +ie/   [itonie]   (Levergood 4)   R→L from suffix to root and prefix
(2) /kI+norr+ʊ /   [kinorru] (Baković 190)   L→R/R→L root to suffix & prefix
(3) /lɛ+m+e+I+rɔ/ [lemeIrɔ] (Levergood 9)   **Only** R→L; from /e-/ prefix to left prefix

McCarthy 2008 suggests that harmony constraints are not directional. Instead the apparent directionality is a result of the highly ranked faithfulness constraints Initial[F] and Final[F]. If Final[F] is ranked above the harmony constraint, SHARE, then harmony cannot be rightward.

Final [ATR]: the leftmost segment linked to ATR in the output does not follow the (correspondent of) the leftmost segment linked to it in the input.
SHARE[ATR]: Each pair of adjacent vowels must be linked to the same [ATR] autosegment.

Because directional harmony as seen in (3) is achieved by ranking Final[ATR] above SHARE[ATR], the harmony in (1) and (2) which is Left to Right cannot be accounted for because it violates the highly ranked Final[ATR].

(4)

/lɛ+m+e+I+rɔ/	Final[ATR]	SHARE[ATR]
☞a. lemeIrɔ		**
b. lɛmeirɔ	*!	**
c. lɛmeIrɔ		***!

(5a)

/kI+norr+ʊ/	Final[ATR]	SHARE[ATR]
☞ a. kinorrʊ		*
b. kInorru	*!	
c. kInorrʊ		**!

(5b)

kinorrʊ	Final[ATR]	SHARE[ATR]
☞ a kinorrʊ		*
b.kinorru	*!	

In step 1 (5a) we see that the ATR feature of the root spreads to the prefix. However, in the next step attested candidate (5b)b. is eliminated by the high ranked faithfulness constraint. Without directional harmony constraints Maasai vowel harmony cannot be accounted for in HS.

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