Serial Directional Evaluation of Generalized Trochee in Wergaia

Joseph Lin (Hsinchu County American School)
Kuo-Chiao Lin (Kang Chiao International School)

Wergaia Stress Wergaia exemplifies a generalized trochee language where heavy syllables generally do not bear stress, except when in final position in an odd-parity word to preserve a regular rhythmic alternation (1).

(1) Wergaia stress (Hyde 2007)

a. Words with an even number of syllables:

ˈgaba 'to chase' (ˈLL) ˈbaɟig 'stone tomahawk' (ˈLH) ˈwiɽimˌbuliŋ 'spider' (ˈLH)(ˌLH)
ˈwinagˌɟera 'to leave one another' (ˈLH)(ˌLL)

b. Odd-parity words with a final light syllable:

ˈdaguŋga 'to punch someone' (ˈLH)L ˈdelguna 'to cure' (ˈHL)L

c. Odd-parity words with a final heavy syllable:

ˈbunaˌɖug 'broad-leaved mallee' (ˈLL)(ˌH) ˈgeɟauˌwil 'he let me in' (ˈLH)(ˌH)

Serial Directional Evaluation w/o FTBIN/ALIGN Following previous studies (Lin & Wang 2024; Ho & Lin to appear; Lin to appear), we propose that with TROCHEE (2) and IAMB (3), a serial directional evaluation (4) (Lamont 2022) without relying on FTBIN/ALIGN is viable. At each of the first two steps in (5a-c), the generalized trochee pattern is enforced because IAMB⇒ is ranked lower. Without resorting to FTBIN (Prince & Smolensky 1993/2004) and the ALIGN family (McCarthy & Prince 1993), the analysis is more parsimonious than a serial evaluation of the same phenomenon that employs the traditional constraints (Pruitt 2010).[1]

(2) TROCHEE (cf. Lamont 2022): Assign one violation for a monomoraic syllable that is i) a foot-initial non-head, i.e., *(LˈH), *(LˈL), *(L), or ii) a foot-final head, i.e., *(LˈL), *(ˈL), *(HˈL).

(3) IAMB (cf. Lamont 2022): Assign one violation for a monomoraic syllable that is i) a foot-final non-head, i.e., *(ˈHL), *(ˈLL), *(L), or ii) a foot-initial head, i.e., *(ˈLL), *(ˈL), *(ˈLH).

(4) Directional evaluation of PARSE(σ) (Lamont 2022), for example:

a. Violation vectors and harmonic ordering by PARSE(σ)⇒:

1111 > 1110 > 1101> 1100 > 1011 > 1001 > 0111 > 0011
σσσσ ≺ σσσ(σ) ≺ σσ(σ)σ ≺ σσ(σσ) ≺ σ(σ)σσ ≺ σ(σσ)σ ≺ (σ)σσσ ≺ (σσ)σσ

b. Violation vectors and harmonic ordering by PARSE(σ)⇐:

1111 > 0111 > 1011 > 0011 > 1101 > 1001 > 1110 > 1100
σσσσ ≺ (σ)σσσ ≺ σ(σ)σσ ≺ (σσ)σσ ≺ σσ(σ)σ ≺ σ(σσ)σ ≺ σσσ(σ) ≺ σσ(σσ)

(5) Generalized trochee in Wergaia: TROCHEE⇒ ≫ PARSE(σ)⇒ ≫ IAMB⇒, *CLASH⇒, PARSE(σ)⇐

a. /LLH/ → [(ˈLL)(ˈH)] cf. (1c)

/LLH/	TROCHEE⇒	PARSE(σ)⇒	IAMB⇒	*CLASH⇒	PARSE(σ)⇐
☞ a. (ˈLL)H		001	110		001
b. (LˈL)H	W 110	001	L		001
c. L(ˈLH)		W 100	L 010		L 100
d. (ˈLL)H		W 001	110		W 001
☞ e. (ˈLL)(ˌH)			110		

[1] In the analysis below, the directionalities of the constraints do not affect the outcome and are assumed to be rightward by default, except for PARSE(σ), whose directionalities determine where feet surface, rightward or leftward.

(Convergence at 3rd iteration not shown)

b. /LHLH/ → [(ˈLH)(ˌLH)] cf. (1a)
1st step: /LHLH/ → [(ˈLH)LH]
*[(LˈH)LH]: TROCHEE⇒ ≫ IAMB⇒
*[LH(ˈLH)]: PARSE(σ)⇒ ≫ IAMB⇒, PARSE(σ)⇐
2nd step: /(ˈLH)LH/ → [(ˈLH)(ˌLH)]
*[(ˈLH)LH]: PARSE(σ)⇒ ≫ IAMB⇒
Convergence at 3rd step: **[(ˈLH)(ˌLH)]**

c. /HLL/ → [(ˈHL)L] cf. (1b)
1st step: /HLL/ → [(ˈHL)L]
*[(HˈL)L]: TROCHEE⇒ ≫ IAMB⇒
*[H(ˈLL)]: PARSE(σ)⇒ ≫ PARSE(σ)⇐
Convergence at 2nd step: **[(ˈHL)L]**
*[(ˈHL)(ˌL)]: TROCHEE⇒ ≫ PARSE(σ)⇒

Serialism vs. Parallelism Note that when *CLASH (Kager 1994, Prince 1983, Selkirk 1984), which penalizes adjacent pairs of syllables, is lower ranked, directional constraint evaluation cannot prevent a parallel analysis from generating unattested non-local weight sensitivity (cf. Pruitt 2010; Hyde 2007), where initial/medial heavy syllables are parsed into a monosyllabic foot only in odd-parity words to satisfy higher ranked TROCHEE⇒ and PARSE(σ)⇒ (6), cf. (7). A serial evaluation, in contrast, will avoid such lookahead effect of parity count, as foot building is serially maximal due to PARSE(σ)⇒ (8). In this regard, directional evaluation is more restrictive in serialism than in parallelism.

(6) Parallel maximal parsing with initial heavy syllable in odd-parity words

/HLLLL/	TROCHEE⇒	PARSE(σ)⇒	IAMB⇒	*CLASH⇒	PARSE(σ)⇐
☞ a. (ˈH)(ˈLL)(ˈLL)			01111	01000	
b. (ˈHL)(ˈLL)L		W 00001	01110L	L	W 00001
c. (ˈHL)(ˈLL)(ˈL)	W 00001		01111	L	
/LLHLL/	TROCHEE⇒	PARSE(σ)⇒	IAMB⇒	*CLASH⇒	PARSE(σ)⇐
☞ d. (ˈLL)(ˈH)(ˈLL)			11011	00010	
e. (ˈLL)(ˈHL)L		W 00001	L 11010	L	W 00001
f. (ˈLL)(ˈHL)(ˈL)	W 00001		11011	L	

(7) Parallel maximal parsing with initial heavy syllable in even-parity words

/HLLL/	TROCHEE⇒	PARSE(σ)⇒	IAMB⇒	*CLASH⇒	PARSE(σ)⇐
a. (ˈH)(ˈLL)L		W 0001	L 0110	W 0100	W 0001
☞ b. (ˈHL)(ˈLL)			0111		
c. (ˈH)(ˈLL)(ˈL)	W 0001		0111	W 0100	
/LLHL/	TROCHEE⇒	PARSE(σ)⇒	IAMB⇒	*CLASH⇒	PARSE(σ)⇐
☞ d. (ˈLL)(ˈHL)			1101		
e. (ˈLL)(ˈH)L		W 0001	L 1100		W 0001
f. (ˈLL)(ˈH)(ˈL)	W 0001		1101	W 0001	

(8) Serial maximal parsing with initial/medial heavy syllable in odd-parity words

/HLLLL/ *1st step*	TROCHEE⇒	PARSE(σ)⇒	IAMB⇒	*CLASH⇒	PARSE(σ)⇐
a. (ˈH)LLLL		W 01111	L		W 01111
☞ b. (ˈHL)LLL		00111	01000		00111
/(ˈLL)HLL/ *2nd step*	TROCHEE⇒	PARSE(σ)⇒	IAMB⇒	*CLASH⇒	PARSE(σ)⇐
☞ c. (ˈLL)(ˈHL)L		00001	11010		00001
d. (ˈLL)(ˈH)LL		W 00011	L 11000		W 00011

Selected references: **Lamont**, A., 2022. A restrictive, parsimonious theory of footing in directional Harmonic Serialism. **Lin**, K.-C. & S.-F. **Wang**. 2024. Serial directional evaluation of rhythmic reversal in Axininca. **Pruitt**, K, 2010. Serialism and locality in constraint-based metrical parsing.