

Pyrrhic Feet

A number of languages have phonological patterns that require headless (pyrrhic) feet, pairs of moras or syllables without stress (Hayes 1987; Tyhurst 1987; Hung 1993, 1994; Selkirk 1995; Crowhurst 1996; Hyde 2002). Their usefulness as a descriptive device is generally known but they are difficult to reconcile with current conceptions of feet. The clearest evidence for stressless feet comes from Japanese, which has very clear bimoraic feet that lack stress entirely (Poser 1990), and from languages like Seminole/Creek (Halle & Vergnaud 1987) and Cairene Arabic (McCarthy 1979), where stressless feet are needed as counting devices to position main stress. I argue here for disentangling stress from feet so that feet emerge from constraint interaction rather than stipulation (van de Vijver 1998). FTBIN gives us the basic fact of a foot—($\mu\mu$) or ($\sigma\sigma$)—so all that’s needed for iambs and trochees is stress. I replace RHTYPE-T and RHTYPE-I (Prince & Smolensky 1993) with the following:

NOIAMB: No foot has final stress.

NOTROCHEE: No foot has initial stress.

Pyrrhic feet arise under FTBIN and PARSE- σ when NOIAMB and NOTROCHEE are undominated:

Japanese: su _f i	NOIAMB	NOTROCHEE
(su _f i)		
(^l su _f i)		*
(su _f ^l i)	*	
(^l su _f ^l i)	*	*

The factorial typology (Prince & Smolensky 1993) that emerges from NOIAMB and NOTROCHEE produces just three kinds of foot: iamb, trochee, and pyrrhic.

Trochee (x.) NOIAMB, NOLAPSE > NOTROCHEE

Iamb (.x) NOTROCHEE, NOLAPSE > NOIAMB

Pyrrhic (..) NOIAMB, NOTROCHEE > NOLAPSE

The spondee (xx), which occurs in no known language, is harmonically bounded on this analysis by (x.), (.x) and (..) and cannot surface under *any* constraint ranking. It is excluded here without stipulation. This produces the following symmetrical (Kager 1993) system of feet:

	Trochee	Iamb	Pyrrhic	
Moraic	(^l μ μ)	(μ ^l μ)	(μ μ)	(Latin, Eskimo, Japanese)
Syllabic	(^l σ σ)	(σ ^l σ)	(σ σ)	(Saami, Osage, Shanghai)

All of the types above but the last are secure (see Altshuler 2009 for Osage); I argue that Duanmu’s 1997 trochaic analysis of Shanghai Chinese is unmotivated with respect to stress and that it is better treated as a syllabic pyrrhic (σ σ).