

Metrical Feet and Dancing Feet

This paper seeks to contextualize the persistent question of the status of ternary feet within phonology more broadly within the psychology of rhythm. Hayes' (1981) suggestion that ternary feet are never basic but only the derivative effect of the interaction of principles which aim to build binary feet with complicating factors has proved remarkably resilient. Although there has been debate about precisely how to model the ternary feet in the stress systems where they do occur, in particular positions and/or intermixed with binary ones, as in Finnish, Estonian, Chugach, Winnebago, Mantjiltjara, or English (1a), hardly any languages -- perhaps only Gilbertese (Blevins 1999) -- have been put forward to join Cayuvava in its long-held position as the only language known to have stress fall regularly at ternary intervals as in (1b). All those languages' stress systems have been analyzed in ways which uphold the fundamentality of binary foot structure (Hayes 1995).

At the same time, however, surface ternary rhythms in language have an undeniably persistent presence and natural feel to them (Burzio 1994), and in other domains of human activity ternary rhythms are taken as basic. In music theory, they have exactly the same primitive status that binary ones do: in Lerdahl and Jackendoff's (1981) model of the rhythmic structure of Western tonal music, for example, a fundamental metrical well-formedness rule allows strong beats to be spaced either one or two beats apart. And in dance, the contrast is even more extreme: basic ternary rhythms are not only ubiquitous cross-culturally, but learned especially early and easily (Silvester 19__).

Here I explore this discrepancy by suggesting that as an abstract form, binary rhythm is indeed basic; but when rhythm is constituted through a differentiation in prominence, the medium through which that prominence is expressed or experienced becomes important. In dance, for example, balance within the body is important; and if a binary rhythm is expressed by strength in a step, one side of the body will be consistently favored. Dances typically correct for this; in the international style ballroom repertory, for example, in the basic figures of all dances to binary musical rhythms, a beat is held (e.g. rhumba) or split (e.g. cha cha) or either (e.g. foxtrot) so that the next strong step will be the job of the other foot. Only the dances to ternary rhythms (e.g. waltz) don't need to add such a complexity: one can step evenly on every beat and the prominent one will naturally shift from side to side, making the basic slow waltz the simplest of all dances. Music might partake of this effect, with rhythmic preferences varying with different instruments, with the human voice having no incentive to prefer ternary rhythms to binary ones, as language itself does not. This kind of explanation of differences in rhythmic preferences among these different activities is consistent with experimental findings that the perception of musical rhythm is "a multisensory experience ... involving interaction of auditory and vestibular information in the human nervous system" (Phillips-Silver and Trainor 2005).

I conclude by showing how poetic feet, from which phonological feet received both their inspiration and their name, encompass all these complexities, in English developing true ternary forms as in (2a) only under the influence of music and dance, yet composing them out of basically binary parts as in (2b) (Prince 1989).

Examples:

(1) Ternary rhythms in language:

- a. English
Pámela àbracadábra
- b. Cayuvava
ikitáparerépeha

(2) Anapestic meter, a true ternary meter in English:

- a. The Assyrian came down like the wolf on the fold,
And his cohorts were gleaming in purple and gold;
And the sheen of their spears was like stars on the sea,
When the blue wave rolls nightly on deep Galilee.

s w s s w s s w s s w s
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 w / w / w / w /
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(Byron, The Destruction of Sennacharib):

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