

Fanqie (“reverse cut”) is a traditional philological method used to specify the pronunciation of a new character in terms of two known words. Here is a sample of two different *fanqie* languages:

- | | | | | | | |
|--------|---------|---|----------------|--------|---|---------------|
| (1) a. | Man-t’a | | b. | Mey-ka | | |
| | ma 55 | → | man 55-t’a 55 | ma 55 | → | mey 51-ka 55 |
| | taw 51 | → | tan 51-t’aw 51 | taw 51 | → | tey 51-kaw 51 |

Man-t’a differs from Mey-ka in that the former *fanqie* language has /an-t’/, while the latter has /ey-k/. In both cases, the syllable onset is combined with a new rime, and the rime with a new onset. This reduplication process has received much attention since Chao (1931), Yip (1982), Duanmu (1990) and Bao (1990). Adopting Steriade’s (1988) reduplication theory, Bao claims that *fanqie* involves two steps: reduplication and substitution of onset and rime, which could be represented as follows:

- | | | | | | | |
|--------|-----------------|----|---------------|----|--------------|-----|
| (2) a. | source syllable | b. | reduplication | c. | substitution | |
| | ma | | mV | Ca | man | t’a |
| | | | | | | |
| | 55 | | 55 | 55 | 55 | 55 |

However, reduplication usually acts on skeletal units: thus, phonological length is transferred from the base to the reduplicative affix, i.e. *sɔɔrok* → *sɔɔ-sɔɔrok* in Mokilese, and length is encoded, in autosegmental theories, by skeletal units. Now, the examples in (1) involve both syllabic and tonal reduplication. There must be a dissyllabic template anyway; can we speak of a tonal template as well?

Ma-sa, a *fanqie* language based on Taiwanese, shows the following fixed tone pattern [5-2]:

- | | | | | | | | |
|--------|------|---|-----------|----|--------|---|------------|
| (3) a. | ma 3 | → | ma 5-sa 2 | b. | kun 31 | → | kun 5-sun2 |
|--------|------|---|-----------|----|--------|---|------------|

Examples in (3) illustrate that syllables associate to a fixed tonal pattern [5-2]. Assuming that such processes are of the same type as those that involve syllable templates elsewhere, (3a,b) are hardly compatible with the definition of tones as pure melodies: they do imply a specific tonal template [5-2]. Consequently, the only way to unify the processes of *fanqie* language in (1, 3) is to suppose that there is reduplication of a tonal basis, which allows the reduplication of syllables in (1).

We argue that the assumption of the autosegmental nature of tone is undone in analyzing the tonal reduplication processes in *fanqie* languages. In contrast, tones have to be analyzed as skeletal units. Following the assumption of a universal tonal periodic skeleton HLHL postulated by Carvalho (2002), analogous to the syllabic skeleton CVCV proposed by Lowenstamm (1996), we will demonstrate that typology, language acquisition and morphology concur with *fanqie* languages in providing strong evidence in favor of the existence of a tonal skeleton in Asian tonal languages.

Concerning typological issues, suffice it to say that two asymmetries on tonal markedness follow from the tonal skeleton hypothesis. First, in contour tone languages, tones are much the same as syllables. Just as CV is unmarked compared with .VC., the falling tone HL is unmarked by comparison with the rising tone LH, because the latter one supposes two empty positions on its right and left sides. The presence of rising tones implies that of the falling tones, but the opposite is false. Second, level tones are more marked than contour tones since they have not only two empty tonal positions just as the rising tone, but also a *median* empty tone. This assumption is supported by empirical facts, where a language can have only contour tones without level tones, as in Chengtu, Shanghai, Zhenhai, Pingyao and Wuxi. A tonal system with only level tones is not attested in Chinese dialects.