

Register Dissimilation in Luoyang

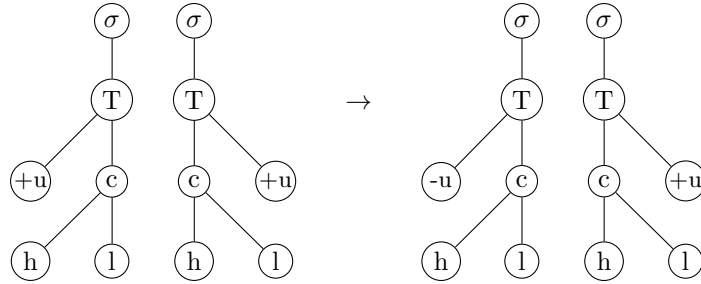
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Bao (1990), citing He (1984), provides evidence of register dissimilation from Luoyang, a Mandarin dialect. When a high-registered falling tone precedes another high-registered tone, it surfaces with low register. For example, two adjacent high-falling tones /53.53/ surface as a low-falling and high-falling tone [31.53]:

iaŋ	ma	‘raise horses’	lo	mi	‘old rice’
53	53	base form	53	53	base form
31	53	sandhi form	31	53	sandhi form

The phonetic forms [53] and [31] correspond to the tonal geometric configurations (+u;hl) and (-u;hl) respectively. Representation of the above examples in Bao’s formalism is thus:



Bao (1990) categorizes dissimilation as a feature-changing operation (non-elementary in Sagey’s terms (cite)), a composite of deletion and insertion. We represent the process as in input-to-output mapping; the transduction is defined over one copy set.

$$\begin{aligned}
 P_{\sigma}^{\tau}(x) &\stackrel{\text{def}}{=} P_{\sigma}(x) & P_T^{\tau}(x) &\stackrel{\text{def}}{=} P_T(x) & P_c^{\tau}(x) &\stackrel{\text{def}}{=} P_c(x) \\
 P_{+u}^{\tau}(x) &\stackrel{\text{def}}{=} P_{+u}(x) \wedge \text{final}(x) & P_{-u}^{\tau}(x) &\stackrel{\text{def}}{=} P_{+u}(x) \wedge \neg \text{final}(x) & & \\
 P_h^{\tau}(x) &\stackrel{\text{def}}{=} P_h(x) & P_l^{\tau}(x) &\stackrel{\text{def}}{=} P_l(x) & & \\
 \alpha^{\tau}(x) \approx y &\stackrel{\text{def}}{=} \alpha(x) \approx y & \delta^{\tau}(x) \approx y &\stackrel{\text{def}}{=} \delta(x) \approx y & \text{succ}^{\tau}(x) \approx y &\stackrel{\text{def}}{=} \text{succ}(x) \approx y
 \end{aligned} \tag{1}$$

The transduction is straight-forward; in our terms, feature changing is redefining unary functions over register features. All other relations (including association, dominance, and linear order) are preserved from the input signature.

References

- Bao, Z. (1990). *On the nature of tone*. PhD thesis, Massachusetts Institute of Technology.
- He, W. (1984). Luoyang fangyan jilue [Notes on the Luoyang dialect]. *Fangyan*, 1984(4):278–299.