

## **Which Came First, the Register or the Tone? Tonogenesis and the East Asian Voicing Shift**

Languages from five major language families (Austroasiatic, Austronesian, Hmong-Mieng, Kra-Dai & Sino-Tibetan) participate in the Greater Mainland Southeast Asia linguistic convergence area (GMSEA), covering Myanmar, Thailand, Laos, Cambodia, Vietnam, the Malay peninsula, northeast India and southern China (Enfield & Comrie 2015). The vast majority of these languages employ lexical contrasts of *tone* or *register*, which are typically thought of as the contrastive implementation of pitch and voice quality, respectively; but this oversimplifies the phenomena. Tone and register overlap in both synchronic phonetic expression and in diachronic development to such an extent that various recent proposals have questioned the necessity of the tone-register typological bifurcation (Brunelle & Kirby 2016, Dockum 2019, Dockum & Gehrmann 2021, Ta 2021, Gehrmann 2022).

One such proposal is the concept of the East Asian Voicing Shift (EAVS), a massively cross-linguistic transphonologization of onset voicing contrasts as tones or registers that spread across GMSEA over the past millennium (Dockum 2019, Dockum & Gehrmann 2021). EAVS is integral to the received models of both tonogenesis and registrogenesis (Haudricourt 1954, Huffman 1976), but the question remains: why should EAVS produce clearly suprasegmental contrasts cued by pitch and voice quality (i.e. tones) in some languages and debatably suprasegmental contrasts cued by vowel quality and voice quality (i.e. registers) in others? We present two hypotheses here to address this question.

The *Input Typology Hypothesis* builds on the conventional explanations (Haudricourt 1965, Matisoff 1973) and predicts two outcomes when a language undergoes EAVS, depending on their suprasegmental typology: (1) If the language is non-tonal, it will become registral, but (2) if it has already developed tones under conditioning from historical coda laryngeal contrasts, it will undergo tone splits (cf. the ‘Great Tone Split’; Brown 1975). Thus, it is the relative historical ordering of EAVS with respect to tonogenetic events that determines the output.

The *Register First Hypothesis* is a new proposal, developed in response to the absence of unambiguous examples of languages innovating coda-conditioned tone contrasts without also undergoing EAVS (Gehrmann 2022). In this hypothesis, EAVS comes first, in the form of a phonetic shift in historical onset voicing contrasts from a VOT phasing realization to a register realization, cued by any combination of differential VOT, pitch, voice quality and/or vowel quality (Kirby & Brunelle 2017). Thereafter, two outcomes are predicted for languages that have undergone EAVS, depending on the relative prominence of these cues: (1) tone tends to develop in languages in which pitch has greater prominence (e.g. Vietnamese, Sinitic, Hmong-Mien, Kra-Dai), but (2) register tends to develop in languages where vowel quality cues are more prominent (e.g. various Austroasiatic languages, including Khmer). The Register First Hypothesis follows Thurgood (2007) in casting register as the primary driver of tonogenetic innovation in GMSEA, albeit with a different interpretation of the phonetic underpinnings of the process, decentering the role of voice quality.

We weigh the merits of these two hypotheses, and the possibility that they are not mutually exclusive, by drawing on examples from modern GMSEA languages. The nature and chronology of EAVS and associated sound changes carries significant implications for the investigation and interpretation of suprasegmental diachrony in this region—specifically, modelling tone diversification within families, the regional spread of tonogenesis, reconstruction of past suprasegmental systems, and the interpretation of linguistic evidence from historical written sources.

## References

- Brown, J. Marvin. 1975. The great tone split: Did it work in two opposite ways? In J. G. Harris & J. R. Chamberlain (Eds.), *Studies in Tai Linguistics in Honor of William J. Gedney*, 33-48. Bangkok: Central Institute of English Language.
- Brunelle, Marc & James Kirby. 2016. Tone and phonation in Southeast Asian languages. *Language & Linguistics Compass* 10:4. 157-207.
- Dockum, Rikker & Ryan Gehrman. 2021. The East Asian Voicing Shift and its Role in the Origins of Tone and Register. Poster presented at the *95th Annual Meeting of the Linguistic Society of America*, online conference.
- Dockum, Rikker. 2019. *The Tonal Comparative Method: Tai Tone in Diachronic Perspective*. New Haven, CT: PhD dissertation. Yale University dissertation.
- Enfield, N. J. & Bernard Comrie. 2015. Mainland Southeast Asian languages: State of the art and new directions. In N. J. Enfield & Bernard Comrie (eds.), *Languages of Mainland Southeast Asia: The State of the Art*, 1–26. Boston & Berlin: Mouton de Gruyter.
- Gehrman, Ryan. 2022. *Desegmentalization: Towards a Common Framework for the Modeling of Tonogenesis and Registrogenesis in Mainland Southeast Asia with Case Studies from Austroasiatic*. Edinburgh: University of Edinburgh PhD thesis. In progress.
- Haudricourt, André-Georges. 1954. De l'origine des tons en Viêtnamien. [On the origin of tones in Vietnamese]. *Journal Asiatique* 242. 69-82.
- Haudricourt, André-Georges. 1965. Les mutations consonantiques des occlusives initiales en môn-khmer. [Consonant mutations in Mon-Khmer initial stops]. *Bulletin de la Société de Linguistique de Paris* 60.1. 160–172.
- Huffman, Franklin. 1976. The register problem in fifteen Mon-Khmer languages. In Philip N. Jenner, Laurence C. Thompson & Stanley Starosta (eds.), *Austroasiatic Studies*, 575-590. Honolulu: The University Press of Hawaii.
- Kirby, James, & Marc Brunelle. 2017. Southeast Asian Tone in Areal Perspective. In R. Hickey (Ed.), *The Cambridge Handbook of Areal Linguistics*, 703-731. Cambridge University Press.
- Matisoff, James. 1973. Tonogenesis in Southeast Asia. In L.M. Hyman (ed.), *Consonant Types and Tone*, 71-96. (Southern California Occasional Papers in Linguistics 1). Los Angeles: University of Southern California.
- Tạ, Thành Tấn. 2021. The role of pitch in registrogenesis and tonogenesis of Vietic languages: New evidence from Rục and Arem. Paper presented at the *30<sup>th</sup> Meeting of the Southeast Asian Linguistics Society (SEALS XXX)*, online conference.  
<https://sites.google.com/site/sealsjournal/seals-and-jseals-history/seals-online-2021/seals-2021-program> (Accessed Sept. 1, 2021)
- Thurgood, Graham. 2007. Tonogenesis revisited: Revising the model and the analysis. In Jimmy G. Harris, Somsonge Burusphat & James E. Harris (eds.), *Studies in Tai and Southeast Asian Linguistics*. 263-291. Bangkok: Ek Phim Thai Co.