Prosodic Structure in Chokri

Tulika Gogoi, Sekholu Tetseo, and Amalesh Gope
Department of Linguistics & Language Technology, Tezpur University
amaleshtezu@gmail.com

This paper explores the organization of prosodic units in Chokri, a five-toned Tibeto-Burman language spoken in Nagaland, India. By investigating the prosody of this tonally rich language, the study addresses a notable gap in the research on tonal languages spoken in India. It is widely accepted that speech in languages consists of prosodically marked units organized hierarchically (Selkirk 1980, 1984, 1996; Nespor and Vogel 1986; Pierrehumbert and Beckman 1988; Hayes 1989; Inkelas 1990). Identifying such speech units is central to both Intonational Phonology and Prosodic Phonology. Theories of prosodic hierarchy define these units indirectly, referencing syntactic structures and their role as domains for segmental phonological processes like sandhi (Selkirk 1984, 1986; Nespor & Vogel 1986; Hayes 1989). In contrast, intonational phonology identifies prosodic units based on their phonetic realization through suprasegmental features such as intonational events, pitch reset, final lengthening, and pauses (Beckman & Pierrehumbert 1986; Jun 1993; Beckman 1996). While a universal prosodic structure was once posited—comprising utterance, Phonological Phrase, Prosodic Word (PrWd), Foot, and Syllable—recent research reveals variation, with some languages displaying additional intermediate levels or fewer domains (Bennett and Elfner, 2019).

A controlled production experiment was conducted to identify different levels of prosodic domains and the criteria for marking their identity in Chokri. Five native speakers produced scripted utterances of varying lengths and syntactic structures. Results suggest that above the syllable level, Chokri exhibits three levels of prosodic constituents: PrWd, intermediate phrase (ip), and Intonational Phrase (IP), organized hierarchically, as shown in Figure 1.

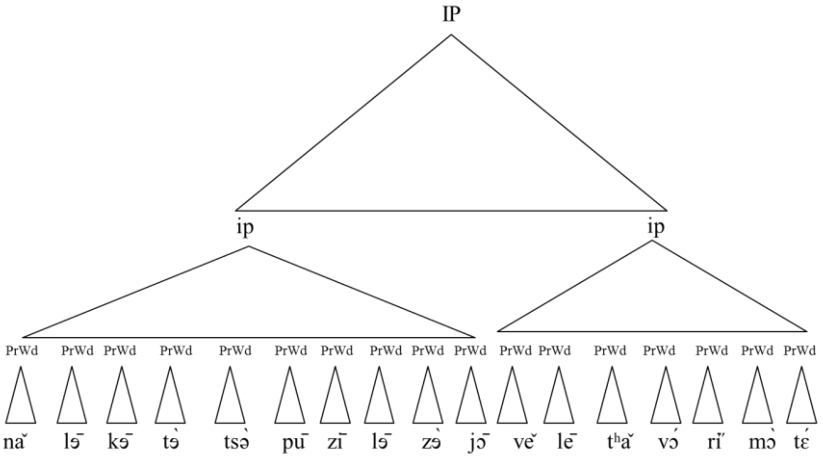

Figure 1: Hierarchical Prosodic Structure in Chokri

The level of PrWd in Chokri encompasses both roots and affixes. Contrastive tones are concentrated on the final syllables of disyllabic roots, while tonal specifications of affixes are maintained in surface realization, marking both as individual prosodic units. At higher levels, Chokri lacks phrasal tones, instead employing non-pitch features such as final lengthening (for IPs) and optional pauses without lengthening (for ips) to mark constituent boundaries. These findings offer critical insights into the realization of post-lexical prosody in a language with a high functional load on lexical tones.

Our analysis reveals a restricted use of intonational features for distinguishing prosodic units in Chokri. The absence of phrasal tones (both pitch accents and boundary tones) and pitch reset suggests that Chokri relies primarily on non-pitch prosodic features such as duration and pause to signal prosodic units. The dominance of underlying lexical tones over intonational properties is likely due to the complex and rich tonal system of the language. However, the IP serves as the domain of downtrends, indicating an interaction between lexical tones and intonational pitch effects for marking domain boundaries. Similar phenomena have been observed in Mambila, a Bantoid language with four contrastive lexical tones, where boundary tones are absent (Connel, 2017). Such findings imply that languages with rich tonal inventories prioritize lexical tones, avoiding their superimposition with intonational features.

The prosodic strategies of final lengthening and pause encode distinctions between speech units in Chokri. Another significant finding is the lack of correspondence between grammatical words and PrWd in the language, as tones are lexically specified not only for roots but also for prefixes and suffixes. Cross-linguistically, Prosodic Stems (PStem) are reported in languages where prefixes exhibit prosodic independence from the PStem (Downing and Kadenge, 2020). In Chokri, however, both suffixes and prefixes function as non-cohering affixes, forming individual PrWd domains. This highlights the stability and high functional load of lexical tones in Chokri, explaining the limited use of intonational pitch categories.

By documenting and analyzing the prosodic structure of Chokri, this study contributes to the broader typological understanding of prosodic systems. It underscores the need for nuanced perspectives on the interaction of tone and intonation in tonal languages, challenging assumptions of universal prosodic features. The findings not only enrich the empirical database of prosodic diversity but also inform theoretical models of prosody. Furthermore, this research has implications for language preservation and speech technology, particularly in developing prosody-based models for speech synthesis and recognition in low-resource languages.

Keywords: Prosodic Structure, tone, intonation, Prosodic Hierarchy, Lexical Tones, Non-Pitch Prosodic Features, Phonological Processes, Prosodic Constituents, Low-Resource Languages

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