

## **Acoustic phonetic properties of p-words, g-words and phrases in Sora verbal forms**

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The objective of this study is to analyze polysyllabic verb forms in Sora, a Munda language spoken primarily in southern Odisha of India by over 400,000 people. Sora has been featured prominently in discussions about linguistic convergence in South Asia, in particular, how alleged shifts in prosodic structure triggered a cascading typological shift covering all aspects of language structure from phonetics to syntax (Donegan and Stampe 1983, 2004, Donegan 1993). Specifically, it has been claimed that a shift from iambic to trochaic ‘rhythmic’ structure caused Sora to go from isolating to agglutinative/polysynthetic, to having head-final phrase and clause structure and so on. Only recently have such claims been examined critically. One major finding is that Sora does not seem to have any evidence for trochaic word prosody or prominence as has been claimed in any way: In fact, in disyllabic words, the language shows an exclusively iambic pattern of second vowel prominence (Horo and Sarmah 2015, Horo 2017, Horo, Sarmah and Anderson 2020). This is indicated by the acoustic cues such as intensity, duration and pitch/fundamental frequency all converging on the second syllable with respect to the first and by the fact that vowels are more centralized in first syllables and realized more distinctly and peripherally in the vowel space in second syllables. Thus, all disyllables show this patterning in Sora, regardless of whether they are nominal or verbal, uninflected roots, compound forms (nominal or verbal), derived verb stems or inflected verbs consisting of a monosyllabic verb stem and a monosyllabic affix. In case of polysyllabic nominal forms in Sora, having eight syllables, that are derived, compound and inflected alike, the data reveal a clear skewing towards second position prominence cued by the three acoustic features mentioned above (Horo and Anderson 2021). This suggests that there is a homology between phonological or prosodic words (p-words) and grammatical words (g-words) in Sora nominal forms with fixed second position prominence.

In verbal domains, the distinction between p-words and g-words in morphologically complex languages is well known (Hildebrandt 2015, Bickel and Zuñiga 2017, Aikhenvald and Dixon 2020). Generally, P-words are determined by such factors as segmental phonotactics, prosodic features (prominence however acoustically cued, harmony, etc.) and/or the application of various phonological processes within a defined domain. G-words, on the other hand, are determined by morphological and syntactic processes (Aikhenvald and Dixon 2020: 285). Thus, there can be many-to-one and one-to-many as well as many-to-many and one-to-one correlations or alignments in the determination of p-words or g-words in any given language.

In this study, we analyze polysyllabic verb forms, in Sora, to determine whether they pattern with disyllables and with polysyllabic nominal forms or whether they show anomalies particular to the verbal system. We present data on polysyllabic verbal g-words from Sora from three to eleven syllables and offer evidence for both where the locus of prominence is in such forms and demonstrate whether there is a complete overlap (or not) between g-words and p-words in Sora verbal forms. Also, we compare these with syntactic phrases and short sentences in Sora to further justify the relevance of the notions word, phrase, etc. prosodically in this Munda language of India, that is hitherto un-explored. The study is based on speech data of native Sora speakers of both genders elicited in isolation, in inherently quasi-focal frames, in contrastively focused frames and in out-of-focus frames to control the data for various utterance-level variations and information structure considerations as well.

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