

Dissociating prosodic and segmental cues of narrow focus in Nepali

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Cross-linguistically, narrow focus is known to have both segmental and suprasegmental phonetic cues (e.g., Ladd 1980, Avesani et al. 2007, Féry and Kügler 2008, Mücke and Grice 2014, DiCanio et al. 2018). Two ongoing questions in this area are how these cues are related and which prosodic units serve as domains of their realization. I investigate these issues in Nepali, an Indo-Aryan language with relatively understudied prosodic phonology, looking particularly at whether phonetic cues of narrow focus take as their domain a single prominent syllable or some larger unit. It is demonstrated that the suprasegmental cues tested span the entire word, while the segmental cues are restricted to positions that are otherwise prone to lenition in the absence of narrow focus. More generally, these findings suggest that different types of acoustic cues of focus can pattern independently, and they need not be restricted to the stressed syllable of a word.

Method. The study uses data produced by four native Nepali speakers in an experiment testing 32 real disyllabic words with dental stops /t, t^h, d, d^h/ in either word-initial or intervocalic position. Nepali is said to have weight sensitive word-level stress falling within the first two syllables (or first foot) of the word (Acharya 1990); all words tested here are expected to have stress on the first syllable. Target words were embedded in two types of question-answer dialogues: the target was under narrow focus in the answer of one type, and in a backgrounded position preceding a verb with contrastive focus in the other. Target vowels (all /a/) were measured for F0 (mean z-scored by speaker) and duration (z-scored by speaker and vowel quality). The prevocalic interval duration (PVI) – used instead of VOT in languages with voiced aspirated stops (Schwarz et al. 2019) – was measured for all stops. Since deaspiration of aspirated stops has been observed in Nepali as a type of lenition, /t^h/ and /d^h/ tokens with PVIs within two standard deviations of the mean of their unaspirated counterparts were coded as deaspirated. Consistent aspiration of phonemically aspirated stops and longer PVI for all stops were taken as a manifestation of relative segmental strength; greater F0 and longer vowel durations were taken to reflect suprasegmental prominence.

Results. Regarding *suprasegmental* properties, Fig. 1 shows that narrow focus significantly enhances vowel duration in both syllables (confirmed with Wilcoxon rank sum test; $p < 0.005$). Additionally, in the non-focus condition, the first vowel is significantly longer than the second ($p = 0.005$). This difference disappears under focus, reflecting a relatively greater lengthening effect on the second syllable. Fig. 2 shows that narrow focus significantly raises F0 in both syllables ($p < 0.001$) and that F0 is higher in the second syllable than in the first in both conditions ($p < 0.005$).

The only significant effects of narrow focus on the *segmental* properties appeared with the aspirated stops. Fig. 3 shows that in the non-focus condition, /t^h/ and /d^h/ have significantly shorter PVIs in medial position than in initial position ($p < 0.005$), indicating intervocalic, or possibly foot-medial, lenition. Medial /d^h/ exhibits particularly substantial lenition with a PVI distribution closer to that of /t/ and /d/, and with 37.8% of its tokens deaspirated. As a comparison of Fig. 3 and 4 shows, focus has no effect on initial /t^h/ and /d^h/, but lengthens PVI of both intervocalically, such that there is no longer a difference between PVI durations in word-initial and medial positions. There are also no instances of deaspiration under focus.

Discussion. In sum, the segmental results show an anti-lenition effect of narrow focus, by which the word-medial stops prone to lenition in the absence of focus (/t^h/ and /d^h/) are strengthened. This is concentrated on the unstressed syllable. Suprasegmental effects on the other hand are spread throughout the word, enhancing duration and F0 of both syllables. These findings indicate that segmental and suprasegmental cues of narrow focus are distributed differently from one another in Nepali, and prominent positions within a word are not necessarily privileged for narrow focus. Rather, it is a larger unit, which seems here to be the full word or a foot, that manifests its effects.

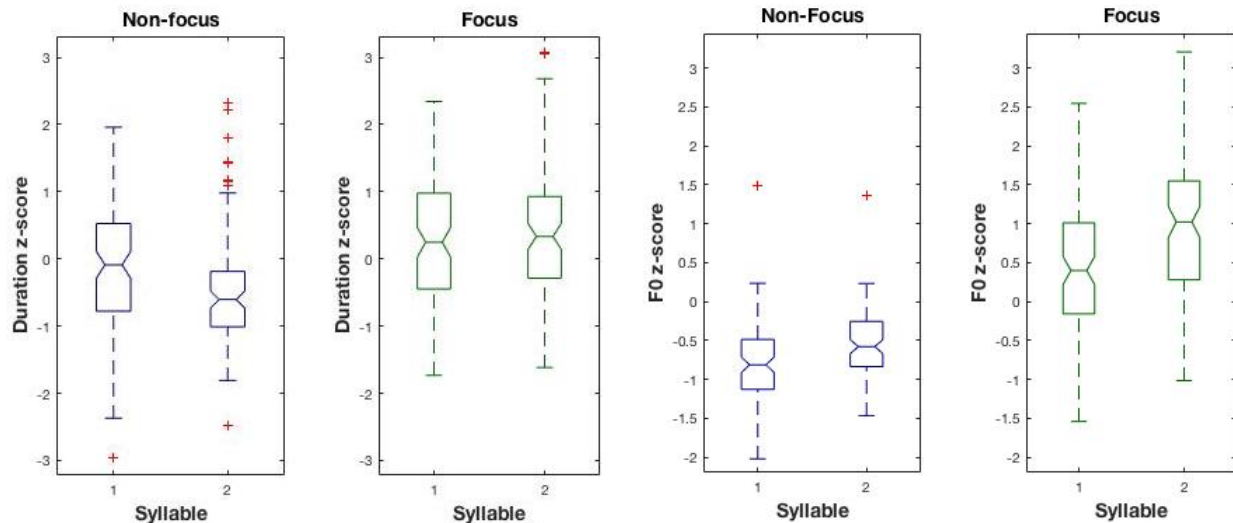


Fig 1. Vowel duration in first and second syllable. Fig 2. Mean F0 in first and second syllable.

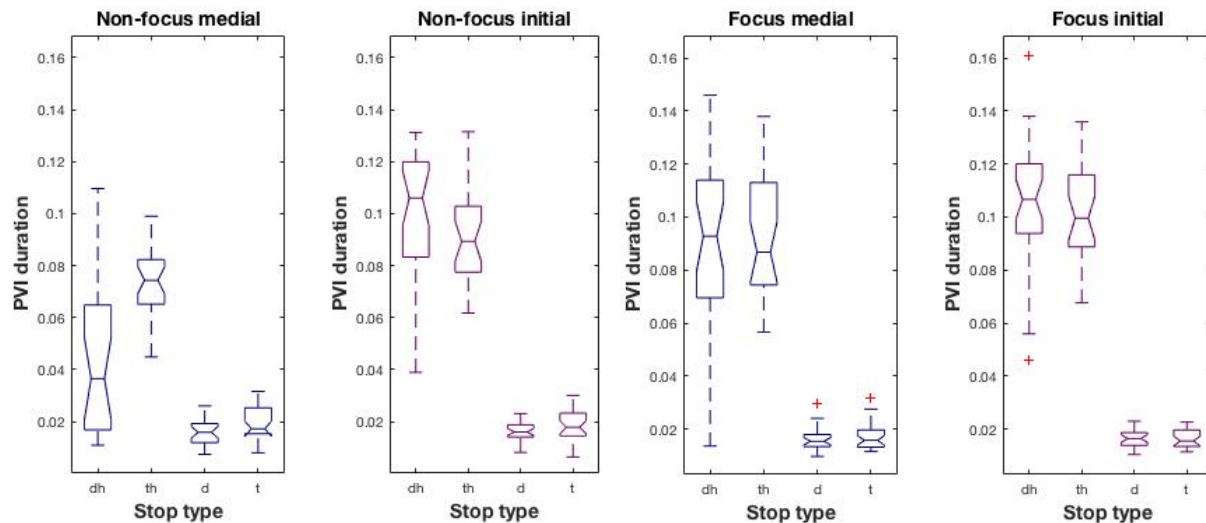


Fig 3. Prevocalic interval of non-focus stops.

Fig 4. Prevocalic interval of focused stops.

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