

Post-focal compression in Hindi – Pitch register as a phonological category?

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The prosody of Hindi differs from intonation languages like English or German in that it presumably only uses boundary tones. Every prosodic word is associated with a rising pitch contour except the last one, and the rises within an intonation phrase are downstepped to each other (e.g. Moore 1964; Harnsberger & Judge 1996; Patil et al. 2008). If a particular constituent is focused there seems to be no prosodic difference in pitch and duration of the focused constituent (Harnsberger & Judge 1996; Patil et al. 2008). However, the pitch register of the post-focal constituent is compressed, i.e. post-focal compression (PFC) (cf. Xu 2011); nevertheless, the rising contours are still realized (Patil et al. 2008). Given that there is no prosodic distinction of the focused constituent, the question for the present study is whether PFC is a prosodic cue that is functionally used by listeners to perceive the focus.

To explore whether a contrast can be perceived or not we use contrastive ellipsis structures. This structure contains a subject, an indirect object, a direct object, a verb and a following conjunction that leads to the contrasted object, either indirect or direct object contrast. The structure is ambiguous up to the conjunction. The predictions based on the findings in Patil et al. (2008) are that in speech production post-focal compression should occur after the focused object, which was only true for the indirect object contrast. For perception, the prediction is that the presence or absence of post-focal compression should play a crucial role in focus identification.

To test the functional load of the feature ‘post-focal compression’ a sentence completion experiment was carried out. The data from six different speakers were taken from the production study. Two of these speakers did not produce PFC, the other four speakers produced PFC to different degrees (between 10 and 30 Hz on average). In a forced-choice completion experiment 18 native Hindi speakers were asked to decide which of the two possible objects contrasts (direct or indirect object) would correctly complete the sentence. The results clearly show that if PFC was absent listeners were unable to choose the intended sentence completion. If PFC was present correct sentence completion judgments increased significantly. Thus, the prosodic contour of a sentence in Hindi guides sentence disambiguation, and thus PFC is a cue for focus perception in Hindi. Based on the functional load of the pitch register in Hindi, we would argue that besides the basic phonological ingredients of intonation, pitch accents and boundary tones, pitch register would be a further relevant intonational category to consider.

References

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