

## Interactions between syntactic priming and contrastive prosody in Japanese

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Two eye-tracking experiments examined the interaction between structural priming and the contrast-marking prosody for the comprehension of a globally ambiguous branching structure in Japanese. In particular, we tested cases where the contrast between the prime and the critical visual targets was either congruent (Experiment 1) or incongruent (Experiment 2) with the contrast evoked by the prosodic manipulation. A Japanese phrase consisting of an adjective, a nominal modifier with a genitive case-marker, and a head noun such as ‘*akai hoshi-no osara*’ (red star-GEN plate) is globally ambiguous between left branching (LB) interpretation (i.e., plate with red stars) and right branching (RB) interpretation (i.e., red plate with stars) with the former being the preferred reading. Assuming that a prominent pitch range expansion immediately leads to contrastive referential interpretation (Ito & Speer, 2008; Weber et al., 2006), the present experiments tested whether a pitch expansion strengthens the structural priming effect regardless of its location, or it can counteract the effect of structural priming when it shifts the locus of contrast from the contrastive relation driven by the visual context.

In the present experiments, participants first listened to an ambiguous phrase with no pitch expansion while viewing a slide that forced a choice of a single object that was compatible with either the LB or the RB interpretation (e.g., the slide contained either a plate with brown stars or a brown plate with stars). In Experiment 1, the following critical utterance had either a pitch expansion on the initial color-adjective (e.g., *akai* "red") or no expansion. The visual target of the prime and the two candidates for the critical utterance stood in color contrast within each trial. The results revealed that a pitch expansion on the color adjective reliably enhanced the effect of structural priming only when the preamble primed the marked RB-interpretation. The effect showed up after the participants heard the entire ambiguous noun phrases (e.g., following the offset of *osara* ‘plate’), which was approximately 1800ms after the stimuli onset. In Experiment 2, the critical utterances had a pitch expansion on the first noun after the adjective (e.g., *hoshi-no* ‘star-GEN’), evoking a contrast on the pattern of the object, which contradicted the contextually elicited color contrast between the prime and critical visual targets. The interaction between pitch expansion and structural priming appeared again after the participants heard the whole noun phrase. When the RB

interpretation was primed, a pitch expansion on the first noun (e.g., the second word in the NP) temporarily facilitated the effect of priming as compared to no pitch expansion. When the LB interpretation was primed, a pitch expansion counteracted the priming effect, leading to relatively less fixations to the LB-congruent object. These results together suggest that a contrast-marking pitch expansion may facilitate the priming effect when it highlights the contextually elicited contrastive relation, while it may also evoke the alternative interpretation for an ambiguous structure when it signals contrast for a contextually unpredicted relation.

#### References

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