Prosodic vs. morphological prominence in Japanese echo-questions

Stephen Jones, Chi-Lun Pang and Louise Mycock
University of Oxford

This paper presents new data from an elicitation experiment on the prosody of echo-questions in Japanese. Analysis of the data provides evidence that the prosodic feature EPR — EXPANDED PITCH RANGE — proposed for Chinese by Peng *et al*. (2005) is also present in Japanese as a gradient feature, and that prosody and morphosyntax interact in expressing prominence.

Echo-questions are those questions where the speaker is asking for clarification or confirmation an utterance that they have just heard, repeating much of that utterance as part of their question. In the English responses to (1), (2a) and (2b) are both echo-questions marked by distinctive prosody, and with *wh*-in-situ word order in the short form.

(1) A: John chose a toy for Julie at the shop.

(2) a. B: John chose a toy for Julie *where*?
b. B: *Where* did you say John chose a toy for Julie?

This study explores the relationship between prosody and morphosyntax in Japanese, where *wh*-in-situ word order is unmarked. In the following sentence variants, (3) is a declarative sentence, (4) is a question, with optional question particle *ka*, and (5) and (6) are short and long forms respectively of echo-questions.

(3) *norio-ga mise-de mayumi-ni omocha-o erabimashita*
Norio-NOM shop-LOC Mayumi-DAT toy-ACC chose.POL
'Norio chose a toy for Mayumi at the shop'

(4) *norio-ga mise-de mayumi-ni omocha-o erabimashita* (*ka*)
Norio-NOM shop-LOC Mayumi-DAT toy-ACC chose.POL (Q)
'Where did Norio chose a toy for Mayumi?'

(5) *norio-ga doko-de mayumi-ni omocha-o erabimashita-tte*
Norio-NOM where-LOC Mayumi-DAT toy-ACC chose.POL-QUOT
'Norio chose a toy for Mayumi where?'

(6) *norio-ga doko-de mayumi-ni omocha-o eranda to itteimashita ka*
Norio-NOM where-LOC Mayumi-DAT toy-ACC chose that saying.POL Q
'Where did you say Norio chose a toy for Mayumi?'

Method Data were collected from four native speakers of Tokyo Japanese, who were asked to read sentences from a script that gave a discourse context. At least three recordings were taken of each utterance from each speaker on three separate occasions. Utterances were segmented manually, and F_0 maximum, minimum and pitch span (Hz) were calculated for each word. For each speaker a baseline pitch span was calculated as the mean pitch span across the first word of all utterances. From this, a pitch span ratio (PSR) was derived for each word.

Findings Figures 1 and 2 show word-by-word variance in PSR between short (3, 4 – *ka*, 5) and long (3, 4 + *ka*, 6) forms of a sentence respectively, presented as grand averages across all speakers and all recordings. In the declarative sentence (3), pitch peaks are seen at the adjunct *mise-de* 'shop-LOC' and the object *omocha-o* 'toy-ACC'. In the question (4) and echo-question (5,6) variants, a pitch peak with EPR is seen at *doko-de* 'where', which bears question focus. However, there is almost no difference in the PSR between questions and echo-questions. A pitch peak is seen utterance-finally in the questions and echo-questions, with EPR for the echo-question relative to the question. Comparison of the short (5) and long (6) forms of echo-questions (not shown) indicates that EPR is greater for short forms, where there is only minimal morphosyntactic marking. Statistical analysis will be available at the workshop.

Figure 1: 'Short' morphosyntax: no question particle *ka*

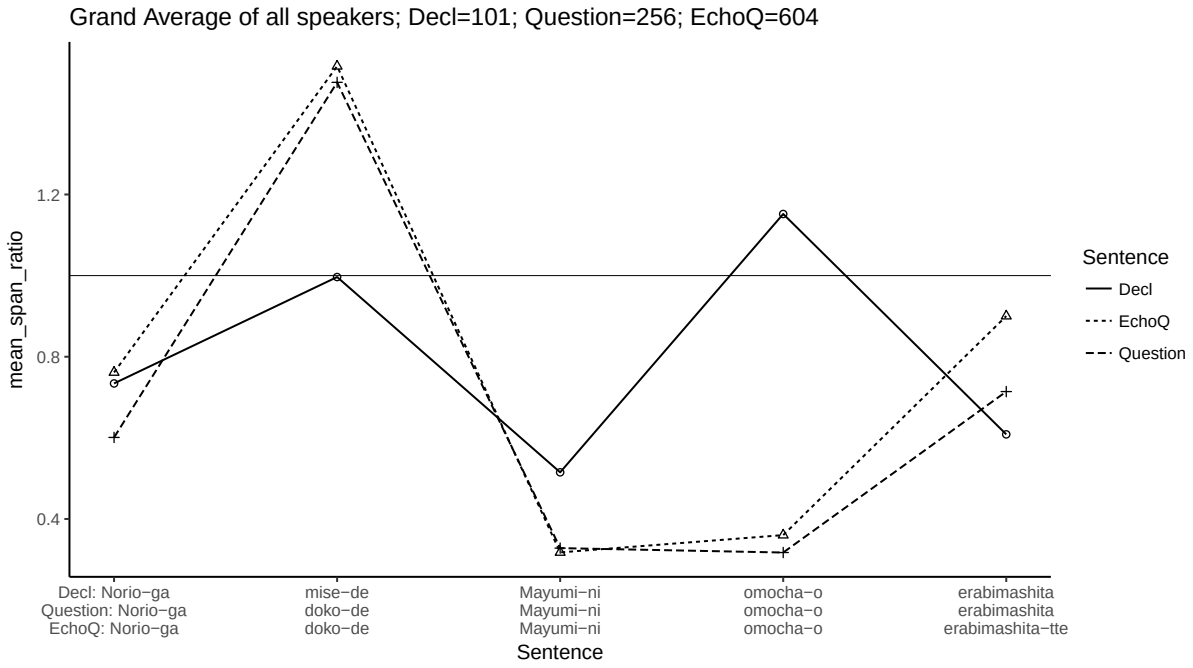
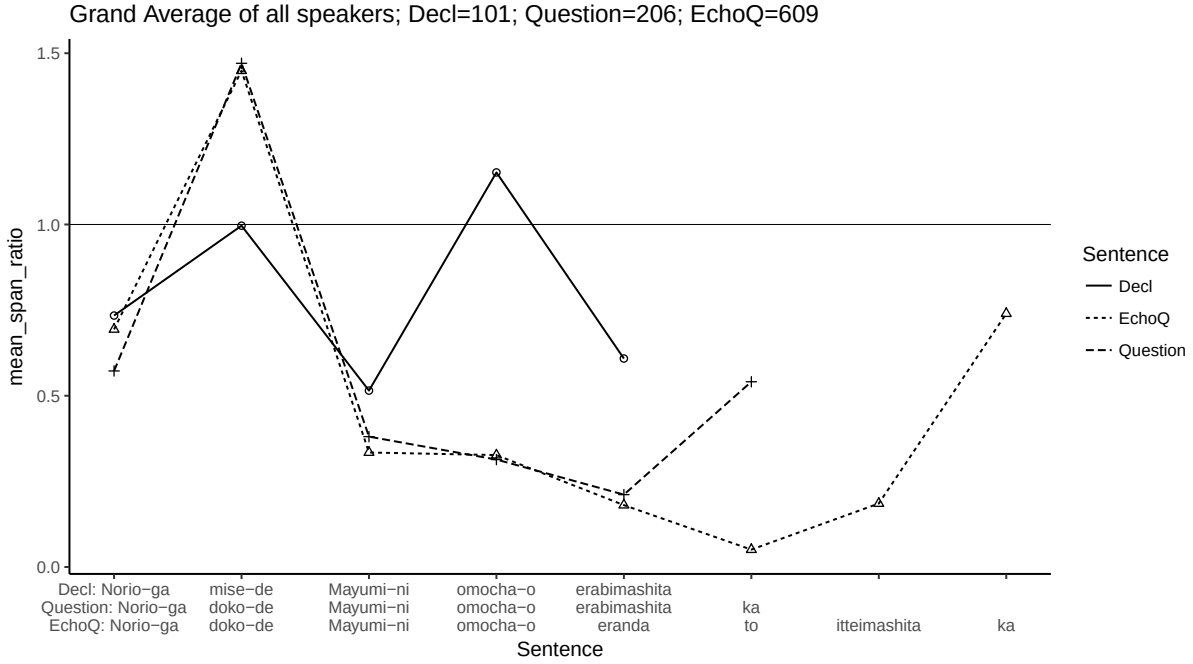


Figure 2: 'Long' morphosyntax: question particle *ka* present



Conclusion The data show that considering pitch peaks alone cannot account for systematic variations in prosody: the feature EPR is required to describe magnitude variations in PSR. The data also suggest that, where the work of marking prominence is shared between morphosyntax and prosody (6), EPR has a lower value than where the principal marker is prosodic (5).

Reference Peng, S.-H., *et al.* 2005. Towards a Pan-Mandarin system for prosodic transcription. In Jun, S.-A., ed., *Prosodic typology: the phonology of intonation and phrasing*. Oxford University Press