

Prosodic Modulation of Pragmatic Marker Processing: Cross-Linguistic Evidence from Japanese, English, and Czech

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Background: Pragmatic markers—such as Japanese sentence-final particles (*ne*, *yo*), English discourse markers (*well*, *you know*), and Czech modal particles (*no*, *tak*)—signal discourse-pragmatic relations during online comprehension [1–3]. While their distributional properties are well studied, how prosodic information modulates their real-time interpretation remains unclear. Recent evidence suggests prosodic cues are integrated early and incrementally during word recognition [4] and sentence processing [5], yet their role in resolving the functional ambiguity of pragmatic markers has not been investigated cross-linguistically.

Aims: We examine how prosodic contour shapes real-time pragmatic marker interpretation across three typologically distinct languages. We predict: (i) prosodic cues are integrated during early processing stages, prior to sentential context effects; (ii) the magnitude of prosodic modulation varies cross-linguistically, reflecting language-specific distributions of pragmatic information across lexical and suprasegmental channels; (iii) multimodal cues (prosody + co-speech gesture) produce facilitation beyond prosody alone [6].

Method: We employ a visual-world eye-tracking paradigm with native speakers of Japanese ($n = 48$), English ($n = 48$), and Czech ($n = 48$). Stimuli consist of naturalistic dialogues containing target pragmatic markers with contrastive prosodic realizations—e.g., Japanese *ne* with rising (H%) vs. falling (L%) boundary tone (see examples on p. 2), English *well* with high vs. low pitch accent, and Czech *no* with emphatic vs. neutral prominence. Each variant is paired with a discourse context that is congruent or incongruent with the pragmatic function typically associated with that contour. A subset of trials includes video stimuli with co-speech head nods to assess multimodal integration. Dependent measures include fixation proportions to pragmatically congruent vs. incongruent discourse continuations, time-locked to marker onset. Data are analyzed using growth curve analysis with Bayesian mixed-effects models.

Expected results: We expect early prosody-driven divergence in fixation patterns (200–400 ms post-onset) across all three languages, with the largest effect for Japanese, where sentence-final particles show categorical prosody–pragmatics mappings [2, 7]. English discourse markers should show intermediate effects, while Czech—where pragmatic function is jointly determined by particle position and prosodic emphasis—should exhibit later, more gradient modulation.

Significance: These findings would provide the first systematic cross-linguistic evidence that word-level recognition of pragmatic markers cannot be reduced to lexical identity, demonstrating that prosodic encoding strategies mediate the acoustic-to-pragmatic mapping in language-specific ways, with implications for models of spoken word processing and multimodal comprehension.

(1) Japanese prosody–pragmatics mapping:

- (a) Kore oishii **ne** ↑ (H%)
this delicious SFP

‘This is delicious, isn’t it?’ [confirmation-seeking]

- (b) Kore oishii **ne** ↓ (L%)
this delicious SFP

‘This is delicious, right.’ [shared-knowledge assertion]

- (2) English prosodic modulation of *well*:
 - (a) **WELL** (H* pitch accent) + pause → dispreference / hedging
 - (b) *well* (deaccented) + continuation → topic management
- (3) Czech particle–position interaction:
 - (a) **No**, to je pravda. [Turn-initial, emphatic] → strong agreement
 - (b) To je, *no*, pravda. [Medial, reduced] → hedged concession

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