

Prosody of Positive/Negative Conjunctions in Japanese

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In this paper, we discuss how semantics of conjunctions affects prosody across clauses/sentences. Nespor and Vogel (1986) observe that phonological rules across sentences may apply when there exists a positive semantic relation (*and, therefore, because*) between two sentences. For example, Flapping may apply between sentences in (1a), but not in (1b) which has two sentences in a negative semantic relation (*but, or*). Assuming that phonological rules may apply in the domain of a single *U* (Phonological Utterance), Nespor and Vogel argue that a positive semantic relation is a condition on *U* restructuring joining adjacent *Us* into a single *U*.

The question is whether positive semantic relation universally helps to join two prosodic domains. We conducted experiments to see whether this is the case in Japanese. The result shows that in Japanese, positive semantic relation does not help to join two prosodic domains any more than negative semantic relation. In fact, two prosodic domains are more detached in the examples of positive semantic relation than in those of negative semantic relation.

We conducted experiments as follows. Sixteen Japanese speakers were asked to read the printed sentences. We analyzed eight examples, each of which consists of two clauses/sentences in positive/negative semantic relation, the second clause/sentence starting with an accented/unaccented word. We calculated pause duration and pitch difference between the last mora of the first clause/sentence (C1/S1) and the first mora of the second clause/sentence (C2/S2) (and pitch difference between the first and the second mora in C2/S2 in unaccented cases).

In the examples in (2), two clauses with the first word in C2 accented (high pitch underscored), positive semantic relation (2a) has longer pause between two clauses than negative (2b). In (3), two clauses with the first word in C2 unaccented, we found no statistically significant difference in pause and pitch difference between positive (3a) and negative (3b). In (4), two sentences with the first word in S2 accented, positive (4a) shows greater pitch reset between two sentences than negative (4b). In (5), two sentences with the first word in S2 unaccented, positive (5a) has longer pause between two sentences than negative (5b) (and shows greater Initial Lowering in another example). These differences between positive semantic relation (2a), (4a), and (5a) and negative (2b), (4b), and (5b) are statistically significant with $p < 0.05$.

These findings show that positive/negative semantic relation affects prosody across clauses/sentences in Japanese differently from English. Longer pause duration in (2a) and (5a) shows that two clauses/sentences in positive semantic relation are more detached from each other than those in negative semantic relation. Greater pitch reset in (4a) or greater Initial Lowering in the same type of example as (5a) suggests that two sentences in positive semantic relation are detached by a prosodic boundary between two major phrases or two minor phrases.

We try to argue that this difference between English and Japanese comes from the difference of branching direction. This study reveals an interesting relation between prosody, syntax, and semantics.

- (1) a. [U It's late] [U I'm leaving] → [U It's la[r] I'm leaving]
 b. [U It's late] [U I'm not leaving though] → * [U It's la[r] I'm not leaving though]
- (2) a. *Atsukatta-node nama-o nonda.* b. *Samukatta-noni nama-o nonda.*
 hot-was-because draft-Acc drank cold-was-though draft-Acc drank
 'As it was hot, I drank draft beer.' 'Though it was cold, I drank draft beer.'
- (3) a. *Yasukatta-node momo-o tabeta.* b. *Takakatta-noni momo-o tabeta.*
 cheap-was-because peach ate expensive-was-though peach ate
 'As it was cheap, I ate a peach.' 'Though it was expensive, I ate a peach.'
- (4) a. ... *yoku yatta-yo. Misu-shinakatta-ne.* b. ... *yoku yatta-yo. Misu-shita-kedo-ne.*
 well done-Prt miss-did-not-Prt well done-Prt miss-did-though-Prt
 'He did well. He made no mistake.' 'He did well. He made mistakes, though.'
- (5) a. *Osoku-natta-ne. Nemuku-natta-yo.* b. *Osoku-natta-ne. Nemuku-nai-kedo.*
 late-became-Prt sleepy-got-Prt late-became-Prt sleepy-not-though
 'It's late. I got sleepy.' 'It's late. I'm not sleepy, though.'

Reference: Nespov, Marina and Irene Vogel. 1986. *Prosodic phonology*. Dordrecht: Foris.