

# Prosody of Positive/Negative Conjunctions in Japanese

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Prosody 08 Cornell

## Goals

- To discuss how semantics of conjunctions affects prosody across clauses/sentences.
- The result shows that positive/negative semantic relation affects prosody across clauses/sentences in Japanese differently from English.
- In Japanese, two clauses/sentences in positive semantic relation are more detached from each other than those in negative semantic relation.

## Negative conjunctions block phonological rules in English (Nespor and Vogel (1986) *Prosodic Phonology*)

- Phonological rules across sentences may apply when there exists a positive semantic relation (*and, therefore, because*) between two sentences. (U-Restructuring)
- (1)a. [U It's late] [U I'm leaving] → [U It's la[r] I'm leaving]
- Phonological rules across sentences cannot apply when there exists a negative semantic relation (*but, or*) between two sentences. (No U-Restructuring)
- (1)b. [U It's late] [U I'm not leaving though] → \*[U It's la[r] I'm not leaving though]

Eng. juncture: positive conjunction < negative conjunction

## Juncture: positive conjunction < negative conjunction Universal?

- Is this the case in Japanese? **No.**
- The result of our experiments shows that in Japanese, positive semantic relation does not help to join two prosodic domains any more than negative semantic relation.
- Two prosodic domains are more detached in the examples of positive semantic relation than in those of negative semantic relation.

Jap. juncture: positive conjunction > negative conjunction

## Experiments

- Sixteen Japanese speakers were asked to read the printed sentences.
- Each of eight examples 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 C2/S2 (and pitch difference between the first and the second mora in C2/S2 in unaccented case).
- [C1/S1 ...  $\mu_n$ ] [C2/S2  $\mu_1$   $\mu_2$  ...] Pause between  $\mu_n$  and  $\mu_1$   
p(itch)1 pause p2 p3 Pitch reset:  $\mu_1 - \mu_n$  (Major Phrase)  
Initial lowering:  $\mu_2 - \mu_1$  (Minor Ph)

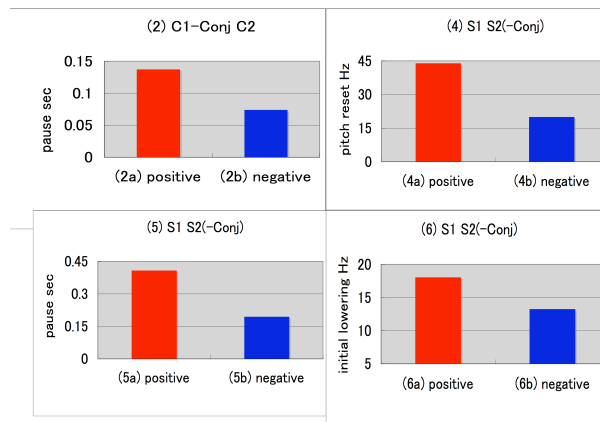
- (2)a. C1-**because** C2 (**Accented**)      b. C1-**though** C2 (**Accented**)  
Atsukatta-node nama-o nonda.      Samukatta-noni nama-o nonda.  
hot-was-because draft-Acc drank      cold-was-though draft-Acc drank  
'As it was hot, I drank draft beer.' 'Though it was cold, I drank draft beer.'
- (3)a. C1-**because** C2 (Unacc)      b. C1-**though** C2 (Unacc)  
Yasukatta-node momo-o tabeta.      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. S1-**because** S2 (**Accented**)      b. S1-**though** S2 (**Accented**)  
.. yoku yatta-yo. Misu-shinakatta-ne.      .. yatta-yo. Misu-shita-kedo-ne.  
well done-Prt miss-did-not-Prt      done-Prt miss-did-though-Prt  
'S/he did well. She made no mistake.' 'S/he did well. She made mistakes, though.'
- (5)a. S1-**because** S2 (Unacc)      b. S1-**though** S2 (Unacc)  
Osoku-natta-ne. Nemuku-natta-yo.      ..natta-ne. Nemuku-nai-kedo.  
late-became-Prt sleepy-got-Prt      -became-Prt sleepy-not-though  
'It's late. I got sleepy.' 'It's late. I'm not sleepy, though.'

## Pause and pitch reset: positive > negative

- Positive relation (2a) has longer **pause** between two clauses than negative (2b). (pos > neg)
- We found no statistically significant difference in pause and pitch difference between positive (3a) and negative (3b).
- Positive (4a) shows greater **pitch reset** between two Ss than negative (4b). (pos > neg)
- Positive (5a) has longer **pause** between two sentences than negative (5b) (and shows greater **Initial Lowering** in another example (6). (pos > neg)

These differences between positive semantic relation (2a), (4a), (5a), and (6a) and negative (2b), (4b), (5b) and (6b) are statistically significant with  $p < 0.05$ .

- (6)a. S1-**because** S2 (Unacc)      b. S1-**though** S2 (Unacc)  
... juuniji-dayo. Nemuku-natta-yo.      ... juuniji-dayo Nemuku-nai-kedo.  
twelve-became-Prt sleepy-got-Prt      twelve-became-Prt sleepy-not-though  
'It's midnight. I got sleepy.' 'It's midnight. I'm not sleepy, though.'

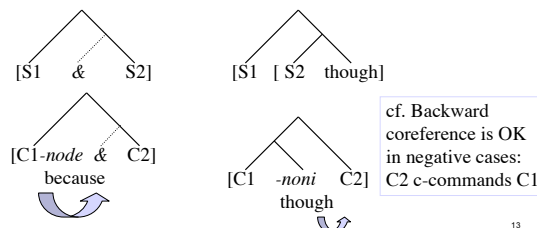


## Discussion

- 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 in Japanese, two clauses/sentences in positive semantic relation are more detached from each other than those in negative semantic relation: [C/S1-pos C/S2] vs. [C/S1-neg C/S2]
- Greater pitch reset in (4a) or greater Initial Lowering in (6a), 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: (Maj/MinP C/S1-pos) (Maj/MinP C/S2) vs. (Maj/MinP C/S1-neg C/S2)

## Asymmetry in juncture

- Right-branching structure: long juncture (phrase-like)
  - Left-branching structure: short juncture (word-like)
- (Rendaku, Tokizaki and Kuwana 2007, Tokizaki 2008a, b)



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## Further Questions

Why Japanese is different from English?

What aspects of grammar determine the juncture between two clauses/sentences in a language?

We try to argue that this difference between English and Japanese comes from the difference of branching direction.

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## Number of Syntactic Brackets

From Brackets to Silent Demibeats (Tokizaki 2008a, b; cf. Selkirk 1984)

$\left\{ \begin{array}{l} [ \\ ] \end{array} \right\} \rightarrow \underline{x}$

- (1) a. [[It's late] [I'm leaving]] ->  $\underline{xx}$  It's la[r]  $\underline{xx}$  I'm ..  
 b. [[[It's late] [[I'm not leaving] though] -> \*.. la[r]  $\underline{xxx}$  I'm ..  
 The numbers of silent demibeats between S1 and S2 are larger in negative case than in positive case in English: pos < neg  
 (2) a. [Atsukatta-node [nama-o nonda]] -> ..-node  $\underline{x}$  nama-o ..  
 b. [Samukatta-noni [nama-o nonda]] -> ..-noni  $\underline{x}$  nama-o ..  
 The numbers of silent demibeats between C1 and C2 are the same in positive and negative case in Japanese: pos = neg

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## Phonological and syntactic evidence

- Right/left-branching asymmetry: Rendaku  
 [nise [tanuki shiru]] -> nise tanuki jiru (\*danuki)  
 [[nise tanuki] shiru] -> nise danuki jiru
- Positive/negative: Backward coreference  
 She is poor and Alice is unhappy.  
 She is poor but Alice is happy.

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## Conclusion

- In Japanese, positive conjunctions make longer juncture between two clauses/sentences than negative conjunctions.
- Negative conjunctions do not universally make long juncture between two clauses/sentences.
- In English, *though* makes another syntactic boundary between sentences, which blocks Flapping etc.
- In Japanese, conjunctive particles do not make another boundary.
- Positive conjunctions make right-branching structure with long juncture while negative conjunctions make left-branching structure with short juncture.

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