

# Formal Grammar of Evidentiality and Implicatures: a Case Study of Japanese Contrastive *wa*

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## Introduction

Japanese contrastive marker *wa*:

can appear within a *because*-clause (1)

cannot appear within temporal clauses like *toki* ‘when’ (2) and an *if*-clause

- (1) Kinou Mary-**wa** uchi-ni kita **node** kodomo-ga yorokon-da.  
yesterday Mary-CTop house-dat came because, children-Nom happy-Past  
‘Because Mary<sub>CTop</sub> came to our house yesterday, the children became happy.’
- (2) \*Kinou Mary-**wa** uchi-ni kita **toki**, kodomo-ga yorokon-da.  
yesterday Mary-CTop house-dat came when, children-Nom happy-Past  
‘When Mary<sub>CTop</sub> came to our house yesterday, the children became happy’

The same asymmetry is also found in [Sawada and Larson \(In press\)](#).

— slide #2

## Goal

The goals of this paper are:

1. To give an account for this contrast using two ‘pragmatic’ concepts:

Implicature

Evidentiality

2. To give evidence for syntax-pragmatics interfaces

These concepts (Implicatures & Evidentiality) are previously treated as purely pragmatic.

Some recent studies show that there are syntactic representations for Implicatures ([Chierchia, 2001](#)) and Evidentiality ([Cinque, 1999](#); [Speas, 2004](#); [Tenny, 2002](#))

3. To show there is a syntactic and pragmatic connection between implicatures and evidentiality

— slide #3

# Japanese Contrastive Topic (Hara 2004, to appear)

## Contrastive and Implicature

Japanese Contrastive Topics always induce implicatures (Hara, 2004)

- (3) Nannin-ka-wa kita  
“[Some people]<sub>CTop</sub> came,”

Implicature: It is possible that it is false that everyone came.  
≈Possibly, not everyone came.

— slide #5

## Worlds doxastically accessible to the speaker

Worlds doxastically accessible to the speaker  
(Possible worlds that are compatible with the speaker's belief)

W<sub>1</sub>

W<sub>2</sub>

W<sub>3</sub>

W<sub>4</sub>

W<sub>5</sub>

⋮



— slide #6

## Worlds doxastically accessible to the speaker

The speaker said: “[Some people]<sub>CTop</sub> came.”

$$w_1 - \llbracket \text{Some people came} \rrbracket = 1$$

$$w_2 - \llbracket \text{Some people came} \rrbracket = 1$$

$$w_3 - \llbracket \text{Some people came} \rrbracket = 1$$

$$w_4 - \llbracket \text{Some people came} \rrbracket = 1$$

$$w_5 - \llbracket \text{Some people came} \rrbracket = 1$$

⋮



— slide #7

## Worlds doxastically accessible to the speaker

Presupposition: There must be a stronger alternative in each world:

$$w_1 - \llbracket \text{Some people came} \rrbracket = 1 \dots \llbracket \text{Everyone came} \rrbracket$$

$$w_2 - \llbracket \text{Some people came} \rrbracket = 1 \dots \llbracket \text{Everyone came} \rrbracket$$

$$w_3 - \llbracket \text{Some people came} \rrbracket = 1 \dots \llbracket \text{Everyone came} \rrbracket$$

$$w_4 - \llbracket \text{Some people came} \rrbracket = 1 \dots \llbracket \text{Everyone came} \rrbracket$$

$$w_5 - \llbracket \text{Some people came} \rrbracket = 1 \dots \llbracket \text{Everyone came} \rrbracket$$

⋮



— slide #8

## Worlds doxastically accessible to the speaker

Implicature: There exist **some** worlds in which the stronger alternative is false

←The alternative **could** be false

←Possibly, not everyone came.

$w_1$  -[[Some people came]] = 1 ... [[Everyone came]] = 1

$w_2$  -[[Some people came]] = 1 ... [[Everyone came]] = 0

$w_3$  -[[Some people came]] = 1 ... [[Everyone came]] = 0

$w_4$  -[[Some people came]] = 1 ... [[Everyone came]] = 1

$w_5$  -[[Some people came]] = 1 ... [[Everyone came]] = 0

⋮



— slide #9

## Implicature and Attitude

**Key Point** The induced implicatures are always attributed to some **attitude-holder**.

- (4) CONTRASTIVE( $w$ )( $x$ )(B)(T) ( $x$  is an **attitude-holder**, B is a background and T is a topical element)
- asserts: B(T)( $w$ )
  - presupposes:  $\forall w' \in \min_w[w' \in \text{Dox}_x(w)] : \exists T'[T' \in \text{ALT}_C(T) \ \& \ B(T')(w') \text{ entails } B(T)(w') \ \& \ B(T)(w') \text{ doesn't entail } B(T')(w')]$
  - implicates:  $\exists w' \in \min_w[w' \in \text{Dox}_x(w)] : \forall T'[T' \in \text{ALT}_C(T) \ \& \ B(T')(w') \text{ entails } B(T)(w') \ \& \ B(T)(w') \text{ doesn't entail } B(T')(w')][B(T')(w')=0]$

— slide #10

## Implicature and Attitude

If *wa* is embedded within an attitude predicate,  
another attitude-holder is introduced (the subject of the attitude predicate).

As a result, the sentence becomes ambiguous.

- (5) nanninka-**wa** kita-to Mary-ga shinjite-iru  
some-people-CTop come-Comp Mary-nom believe-Prog  
'Mary believes [some people]<sub>CTop</sub> came'

(5) is ambiguous depending on:

1. which attitude-holder (the speaker or Mary) is responsible for the implicatures
2. which propositions are contrasted; i.e. what propositions are in the alternative set.

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## Locus of Implicatures: Local

Local: The speaker asserts

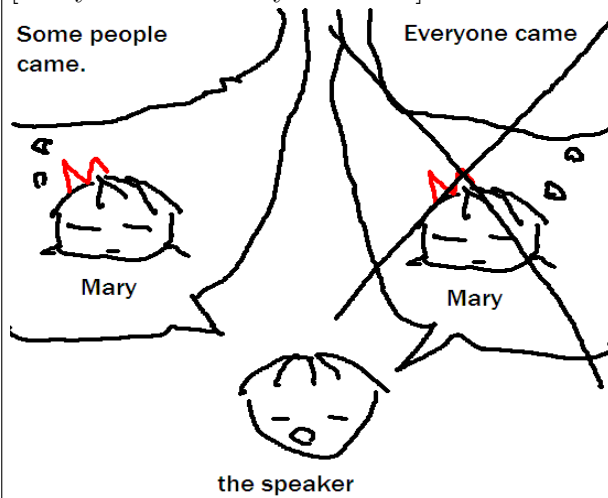
[Mary believes some people came and she doesn't believe everyone came]



— slide #12

## Locus of Implicatures: Global

Global: The speaker asserts [Mary believes some people came] and the speaker doesn't assert [Mary believes everyone came].



— slide #13

## when and attitude

- (2) \*Kinou Mary-wa uchi-ni kita **toki**, kodomo-ga yorokon-da.  
 yesterday Mary-C<sub>Top</sub> house-dat came when, children-Nom happy-Past  
 'When Mary<sub>C<sub>Top</sub></sub> came to our house yesterday, the children became happy'

Interestingly, *wa* under *toki* 'when' becomes acceptable if *wa* is further embedded in an attitude predicate.

- (6) John-ga Mary-wa kita-to **omot-ta toki**, kanojo-ga heya-ni haitte  
 John-Nom Mary-C<sub>Top</sub> come-Comp **think-Past when** 3sg-Nom room-Dat in  
 kita  
 come-Past  
 'When John thought that Mary<sub>C<sub>Top</sub></sub> came, she came into the room.'

— slide #14

## Summary of the facts

The *wa*-induced implicatures are always attributed to some attitude-holder.

If *wa* is embedded within an attitude predicate, the induced implicature could be attributed to the subject of the predicate or to the speaker.

*wa* within *when* is bad

But if *wa* is further embedded in an attitude predicate, *wa* within *when* becomes acceptable

Based on these facts,...

— slide #15

## Movement

**Speculation** There is a movement operation involved in the computation of *wa*-implicatures.

**Proposal** The use of *wa* introduces an implicature operator, which contains an attitude-holder variable.

**Motivation of the movement** The implicature operator needs to saturate its attitude-holder variable.

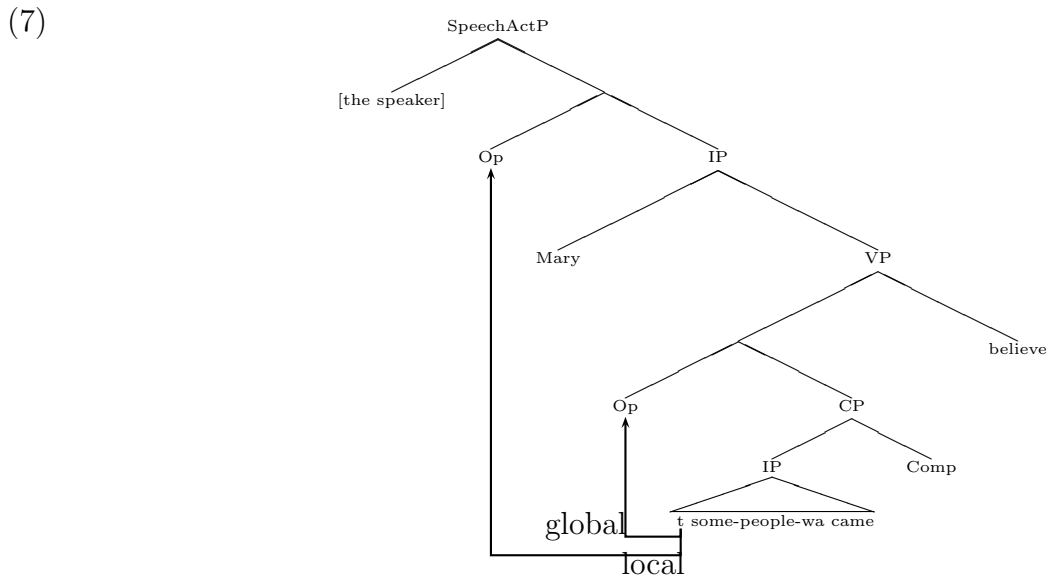
The attitude-holder could be either the speaker or the subject of the attitude predicate.

— slide #16



## Movement of Implicature Operator: Example

- (5) nanninka-wa kita-to Mary-ga shinjite-iru  
 some-people-CTop come-Comp Mary-nom believe-Prog  
 Mary believes [some people]<sub>CTop</sub> came



— slide #17

## Adjunct Island Violation

Then, we could say that (2) is unacceptable since it causes an adjunct-island violation.

- (2) \*Kinou Mary-wa uchi-ni kita toki, kodomo-ga yorokon-da.  
 yesterday Mary-CTop house-dat came when, children-Nom happy-Past  
 ‘When Mary<sub>CTop</sub> came to our house yesterday, the children became happy’

1. The operator cannot find a local attitude predicate
2. It tries to target the global implicature (the speaker’s uncertainty)
3. then it has to cross an adjunct island

?? \* [ [speaker] [XP Op [XP ... [AdjunctP [IP t Mary-wa kita ] toki ]]] ] (2)

\*

— slide #18

## Two questions

This speculation raises two questions.

1. where exactly does this operator move?
2. why does a *because*-clause not constitute as an island?

— slide #19

## Evidentiality (Tenny 2002)

### Evidential Projection

On the assumption that there exist Speech Act Phrases (Rizzi 1997, Rivero 1994) and Evidential Phrases (Cinque, 1999; Speas, 2004),

Tenny (2002) argues for the existence of an evidential argument in syntax.

The evidential argument refers to an individual who is “responsible for evaluating the truth of a proposition”

— slide #21

## Example: Korean evidential particle

a sentence with an *e* ending indicates that the speaker of the sentence has direct evidence for the statement

while a sentence with a *tay* ending indicates that the truth value of the statement is based on the reported evidence

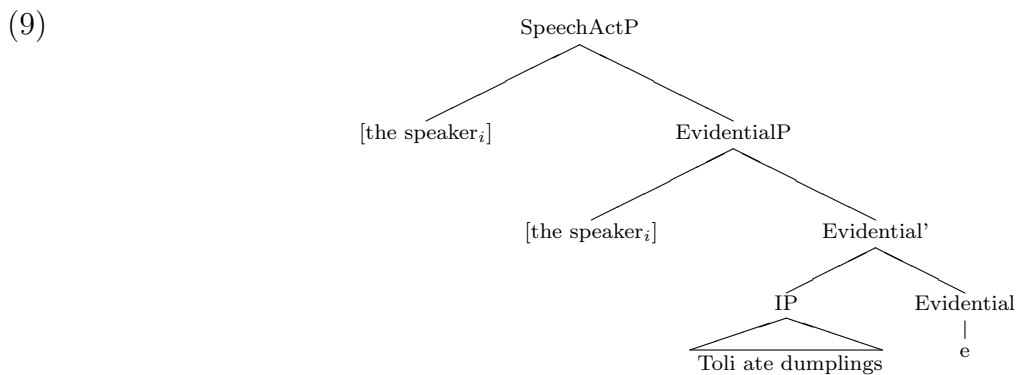
- (8) a. Toli-ka mantwu-lul mek-ess-e  
Toli-Nom dumpling-Acc eat-Past-Declarative  
'Toli ate dumplings.'
- b. Toli-ka mantwu-lul mek-ess-tay  
Toli-Nom dumpling-Acc eat-Past-Declarative  
'(I heard that) Toli ate dumplings.'

(Papafragou *et al.*, 2004)

— slide #22

## Example: Korean evidential particle

- (8-a) Toli-ka mantwu-lul mek-ess-e  
Toli-Nom dumpling-Acc eat-Past-Declarative  
'Toli ate dumplings.'

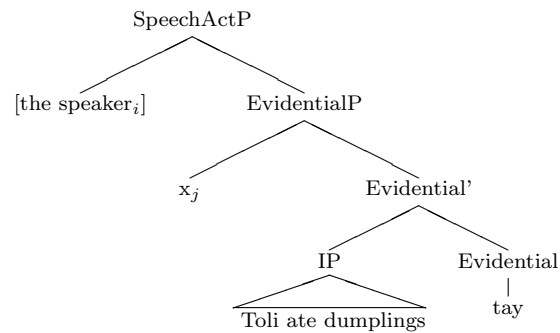


— slide #23

## Example: Korean evidential particle

- (8-b) Toli-ka mantwu-lul mek-ess-tay  
Toli-Nom dumpling-Acc eat-Past-Declarative  
'(I heard that) Toli ate dumplings.'

(10)



— slide #24

## *because*

Tenny proposes that:

*node* 'because' is a head of an Evidential projection

*node* introduces two arguments: a proposition and an evidential argument

- (11) node [ p x ]  
Prop Evid

Tenny provides different interpretation of direct experience predicates within a *because*-clause and a *when*-clause (see Tenny 2002 for details).

— slide #25

## Key Points

The pragmatic concept of Evidentiality is mapped in syntax as Evidential Projection.

Evidential Projection contains an evidential argument, which refers to an individual who is responsible for the truth value of the proposition.

Japanese *node* ‘because’ is a head of Evidential Projection.

— slide #26

## Back to Contrastives

### Implicatures and Evidentiality

Implicatures induced by Contrastive Topic *wa* also gives evidence for the existence of evidential arguments and projections.

*Wa* contains a variable which corresponds to the attitude-holder of the induced implicature.

I assimilate this attitude-holder of *wa* to the evidential argument in Tenny’s framework.

— slide #28

## Implicatures and Evidentiality

When a speaker utters:

- (3) Nannin-ka-wa kita  
“[Some people]<sub>CTop</sub> came,”

the individual who knows the truth value of the asserted proposition ‘some people came’ (the evidential argument)

=the individual who is not sure about the truth value of the stronger alternative, namely the individual who implicates ‘probably not everyone came’ (the attitude-holder of the implicature)

=the speaker

— slide #29

## Implicatures and Evidentiality

Both an evidential argument and an attitude-holder are holders of a point of view towards a proposition.

The implicature operator needs to find an entity for its attitude-holder.

Therefore, the attitude-holder variable of *wa* should be saturated by the evidential argument.

This saturation is implemented in syntax: the implicature operator adjoins to the Evidential Projection.

Answer to the first question.

— slide #30

## Asymmetry

This analysis accounts for the asymmetry between (1) and (2).

- (1) Kinou Mary-**wa** uchi-ni kita **node** kodomo-ga yorokon-da.  
yesterday Mary-CTop house-dat came because, children-Nom happy-Past  
'Because Mary<sub>CTop</sub> came to our house yesterday, the children became happy.'
- (2) \*Kinou Mary-**wa** uchi-ni kita **toki**, kodomo-ga yorokon-da.  
yesterday Mary-CTop house-dat came when, children-Nom happy-Past  
'When Mary<sub>C</sub>Top came to our house yesterday, the children became happy'

— slide #31

## *because*

In (1), the operator finds the local Evidential projection which is headed by *node* 'because'

- (12) 
$$\begin{array}{l} [\text{SpeechActP } [\text{speaker}] [\text{EvidP } \dots \\ [\text{EvidP } \text{Op } [\text{EvidP } [\text{evid-arg}] [\text{Evid}' [\text{IP } t \text{ Mary-wa kita } ] \text{ node} \\ ]]]]] \end{array} \quad (1)$$

— slide #32

## *when*

In (2), *toki* ‘when’ does not introduce an Evidential projection.

The operator cannot find a local landing site within an adjunct.

Thus having *wa* within *toki* causes an island violation

- (13) \*<sub>[SpeechActP [speaker] [EvidP Op [EvidP ... [AdjunctP [IP t Mary-wa kita ] toki ]]]]</sub> (2)
- \*

— slide #33

## Answer to Question 2

*Wa* in ‘because’-clause does not cause an island violation since ‘because’-clause itself is the Evidential Projection that can host the implicature operator.

— slide #34



## Summary and Concluding Remarks

By examining the distribution of *wa*, we can see the connection between implicature and evidentiality

both pragmatically and syntactically.

- Pragmatics: Both concepts involve a holder of a point of view towards a proposition
- Syntax: Implicature Operator adjoins to Evidential Projection

The analysis accounts for the asymmetry between *because* and *when*

This analysis crucially requires a framework of syntax-pragmatics interfaces,  
“Some pragmatic features are represented in syntax.”

Without the notion of interfaces, i.e. if the interaction between pragmatics and syntax were minimal as traditionally viewed, it would be very difficult to give a unified account for the distribution of *wa*.

— slide #35

## References

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— slide #36

## Attitude Predicate as Speech Act Projection

*wa* under *toki* ‘when’ becomes acceptable if *wa* is further embedded in an attitude predicate.

- (6) John-ga Mary-**wa** kita-to **omot**-ta **toki**, kanojo-ga heya-ni haitte  
John-Nom Mary-**CTop** come-Comp **think**-Past **when** 3sg-Nom room-Dat in  
kita .  
come-Past  
‘When John thought that Mary<sub>CTop</sub> came, she came into the room.’

**Assumption** an attitude predicate such as ‘think’ subcategorizes for an Evidential Projection just like a speech act.

The operator can adjoin to the local Evidential Projection without crossing the island.