Movement of a Shifty Operator

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Formal Approach to Japanese Linguistics

Contrastives and their Implicatures

As noted by Kuno (1973), Japanese Contrastive-marking involves:

- a morphological marking *wa*; and
- a prosodic peak in the intonation (indicated by capitals)

(1) a. Among Mary and Peter, who came to the party?
b. MARY-**wa** kita.
Mary-**Con** came.
'(At least) Mary came.'
(Implicature: Peter didn't come, or I don't know about Peter.)'

Relativized Implicatures

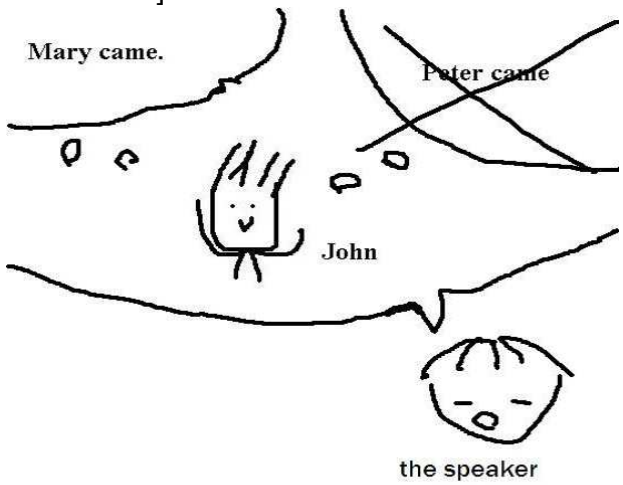
The implicature induced by Contrastive *wa*:

- can be relativized to an attitude-holder other than the speaker
- if *wa* is embedded under an attitude predicate:

(2) MARY-**wa** kita-to John-ga **shinjite**-iru
Mary-**Con** come-Comp John-Nom **believe**-Prog
'John believes that [$_{Con}$ Mary] came.'

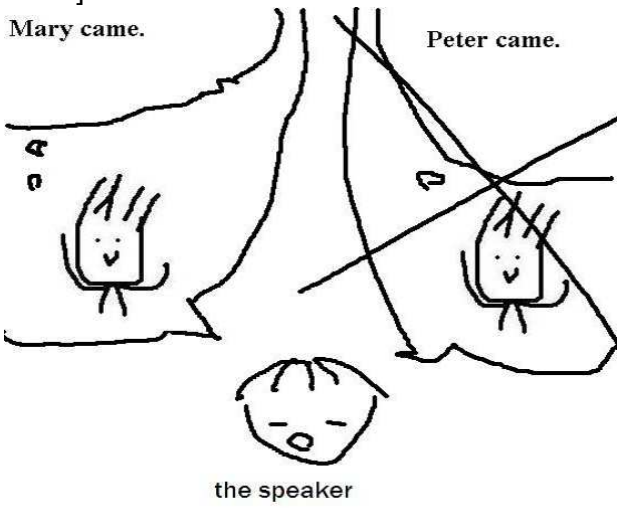
Local Implicature

Local: The speaker asserts
[John believes Mary came and he considers the possibility that Peter didn't come]



Global Implicature

Global: The speaker asserts [John believes Mary came] and the speaker considers the possibility that [John doesn't believe Peter came].



Goal

This paper argues that:

- The Japanese Contrastive-marking introduces an operator.
  1. The operator takes shiftable indexicals in the sense of Schlenker (2003);
     - ⋆ it indicates some attitude-holder's limited knowledge.
  2. The computation of the operator involves a syntactic movement;
     - ⋆ The position of the operator determines the context in which the shiftable indexicals are interpreted.

Structured Meaning Approach

(3) MARY-wa kita.
Mary-Con came

- Modeling after Structure Meaning Approach [von Stechow 1990 among others],
- Prosodic marking on *Mary* creates a partition into B (background) and F (focus)

(3) $\underbrace{\text{MARY}}_{F}$-wa $\underbrace{\text{came}}_{B}$

Wa-implicatures

(3) $\underbrace{\text{MARY}}_{F}$-wa $\underbrace{\text{came}}_{B}$

(4) CON(w)(sp)(B)(F)
   a. asserts: B(F)(w)
   b. presupposes:
   There's a scalar alternative B(F') stronger than B(F)

(5) a. B(F)=**came**(m)
   b. Stronger Scalar Alternative: B(F')=**came**($m \oplus p$)

Uncertainty/Contrastive meaning

(3) $\underbrace{\text{MARY}}_{F}$-wa $\underbrace{\text{came}}_{B}$

(4) CON(B)(F)

a. asserts: B(F)

b. presupposes:
There's a scalar alternative B(F') stronger than B(F)

c. implicates: In some of the speaker's epistemic worlds, B(F') is false.(=$\diamond\neg$B(F'))

(6) a. Stronger Scalar Alternative: B(F')=**came**$(m \oplus p)$

b. Induced implicatures: $\diamond\neg$**came**$(m \oplus p)$

c. $\approx$I don't know about Peter.

Interim Summary 1

- Contrastive-marking involves two components:
  1. Focus-marking
  2. *wa*-marking
- Contrastive-marking indicates the speaker's limited knowledge
  - A contrastive-marked sentence presupposes that there exist some stronger scalar alternative to the assertion
  - It implicates that it is possible that the stronger alternative is false.
- See Hara (2005a) and Hara (2006, ch2) for detailed discussions.

What's next?

- So far, implicatures induced by Contrastive-marking are always associated to the speaker.
- Next questions:
  - Are implicatures always interpreted as the speaker's non-maximal knowledge?
  - How does Contrastive-marking interact with syntactic structures?

Ambiguity

(2) MARY-**wa** kita-to John-ga **shinjite**-iru
Mary-**Con** come-Comp John-Nom **believe**-Prog
'John believes that [$_{Con}$ Mary] came.'

(2) is ambiguous depending on:

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

The agent of *wa*-implicatures

(7) CON(*w*)(*sp*)(B)(F)

a. asserts: B(F)(*w*)
b. presupposes: There's a scalar alternative B(F') stronger than B(F)
c. implicates: In some of the speaker's epistemic worlds, B(F') is false.(=◇¬B(F'))

- I modify that the denotation of CON so that it contains shiftable indexicals in Schlenker's (2003) sense.

Indexicals and Monsters

Kaplan (1989)

Fixity Thesis:
The semantic value of an indexical is fixed solely by the context of the actual speech act, and cannot be affected by any logical operators. (restatement by Schlenker, 2003)

Situation to be reported:

(8) a. John$_i$ says that he$_i$ is a hero./
b. *John$_i$ says that I$_i$ am a hero.

Amharic

(9) Situation to be reported: John says: 'I am a hero.'

a. English: John$_i$ says that he$_i$ is a hero./
∗John$_i$ says that I$_i$ am a hero.
b. Amharic (lit.): John$_i$ says that I$_i$ am a hero.

(10) ǰon ǰegna nə-ññ yɨl -all
John hero be.PRT -1sO 3M.say -AUX.3M
'John says that he is a hero.'
(lit. John says that I am a hero.) (Schlenker, 2003)

- In Amharic, the first person indexical shifts in attitude reports to the agent of the reported attitude.

Schlenker (2003): Reported Speech Act

(11) SAY$_{<John,now,actually>}$ c_i be-a-hero (agent(c_i), time(c_i), world(c_i))

(Schlenker, 2003)

Schlenker (2003):

"[E]very attitude verb is a Kaplanian monster."

Relativizing Implicatures

(12) CON($w(c)$)($agent(c)$)(B)(F)

a. asserts: B(F)($w(c)$)

b. presupposes: There's a scalar alternative B(F') stronger than B(F)

c. implicates: In some epistemic worlds accessible to $agent(c)$, B(F') is false.

Going back to the ambiguity

(2) Mary-**wa** kita-to John-ga shinjite-iru
Mary-Con come-Comp John-nom believe-Prog
'John believes at least Mary came.' (ambiguous)

a. Local Implicature: John doesn't know whether Peter came

b. Global Implicature: The speaker doesn't know [whether John knows that Peter came]

Placement of CON: Local

(13) Local: $c_@$ [$_{CP}$ [$_{IP}$ c_i [$_{CP}$ **CON** [$_{XP}$ Mary-wa] came Comp] John-ga believe]]

(14) Local

a. $B_l = \lambda y.$**came**(y)

b. $agent(c_i) = j$
CON$(w(c_i))(j)$(**came**(m))
implicates: In some of the epistemic worlds compatible with John's belief, it is not the case that Peter came.

c.

Placement of CON: Global

(15) Global: $c_@$ [$_{CP}$ **CON** [$_{IP}$ c_i [$_{CP}$ [$_{XP}$ Mary-wa] came Comp] John-ga believe]]

(16) Global

a. $B_g = \lambda y.$**think**(j)(**came**(y))

b. $agent(c_@) = sp$
CON$(w(c_@))(sp)$(**think**(j)(**came**(m)))
implicates: In some of the epistemic worlds compatible with the speaker's belief, it is not the case that John believes that Peter came.

c.

Association between two components

Two Components for Contrastive-marking

- Background and Focus structure
- CON operator

Association

CON Operator sitting at a clause-initial position (either embedded or matrix) determines the agent of *wa*-implicature and the size of background B.

Association blocked in certain constructions

Relative Clause

(17) *Itsumo [CHOMSKY-**wa** kai-ta hon]-ga
always Chomsky-Con write-Past book-Nom
shuppan-sa-re-ru.
publish-do-Pass-Present
'The book which at least Chomsky wrote is always published.'

Adjunct Clause

(18) *Itsumo [uchi-ni JOHN-wa kita toki], inu-ga hoe-ru.
always house-Dat John-Con come when, tea-Acc offer-Present
'When at least John comes to our house, the dog always barks.'

Proposal: Movement of CON

Proposal

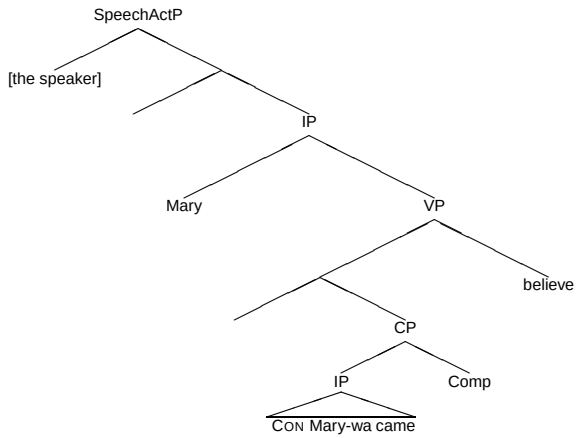
There is an island-sensitive movement operation involved in the computation of *wa*-implicatures.

- The use of *wa* introduces CON operator
- CON contains a shiftable indexical that needs to be locally bound.
- CON moves to a position where an utterance context is introduced (the actual speech act or attitude verbs)

The ambiguity again

(19) John believes Mary-wa came.

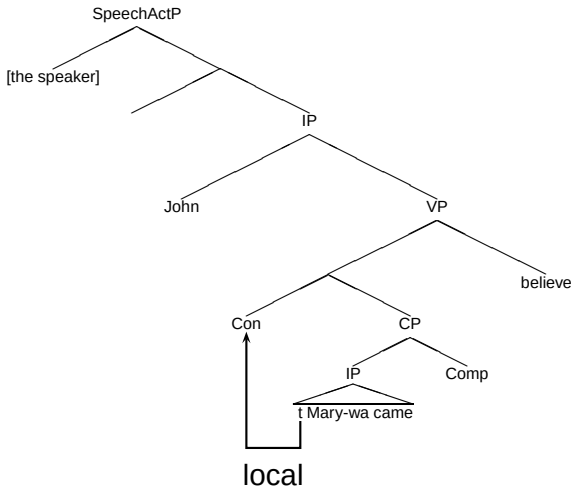
(20)



Local: John's implicatures

(19) John believes Mary-wa came.

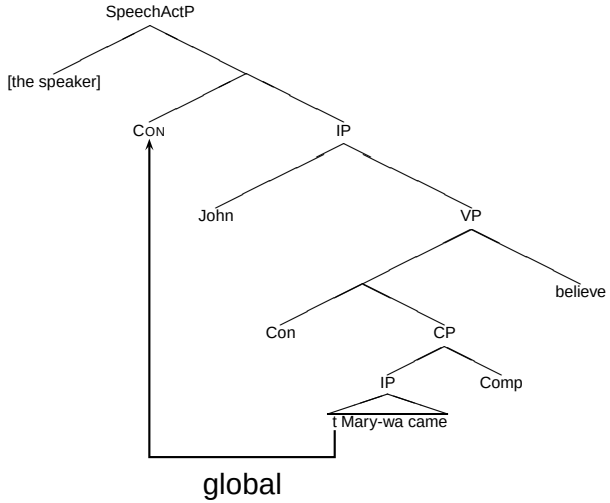
(21)



Global: the speaker's implicatures

(19) John believes Mary-wa came.

(22)



Explained as Island effect

(17) *Itsumo [CHOMSKY-wa kai-ta hon]-ga
always Chomsky-Con write-Past book-Nom
shuppan-sa-re-ru.
publish-do-Pass-Present
'The book which at least Chomsky wrote is always published.'

(23) [$_{\text{SpeechActP}}$ [speaker] [[$_{\text{IP}}$ . . . [$_{\underline{\text{NP}}}$ [$_{\text{IP}}$ CON Chomsky-wa wrote] book] . . .]]] (17)

(24) *[$_{\text{SpeechActP}}$ [speaker] [CON [$_{\text{IP}}$ . . . [$_{\underline{\text{NP}}}$ [$_{\text{IP}}$ t Chomsky-wa wrote] book] . . .]]] (18)

*

Further motivation for movement

- *Wa*-marking is possible if it is realized at the whole island.

(25) Itsumo [CHOMSKY-ga kai-ta hon]-**wa**
always [Chomsky-Nom write-Past book]-**Con**
shuppan-sa-re-ru.
publish-do-Pass-Present
'At least the book which Chomsky wrote is always published.'

LF-piedpiping in Nishigauchi (1990)

(26) kimi-wa [**dare**-ga kai-ta hon]-o yomi-masi-ta ka?
you-TOP **who**-NOM wrote book-ACC read.POL-PAST Q
'You read books that who wrote?' (Nishigauchi, 1990, p.40)

(27) [$_{CP}$ [who-Nom wrote book] -Acc$_i$ [$_{IP}$ [$_{VP}$ t$_i$ read]] Q]

Piedpiping-like Structure

- NO island violation because
- CON is generated outside the island and the movement of CON is local.

(28) c$_{@}$ CON [$_{IP}$ always [$_{XP}$ t [$_{NP}$ Chomsky-ga wrote book] -wa]
is-published]

- The same domain as the one which can be pied-piped for wh-questions discussed in Nishigauchi (1990).
- The same pattern with adjunct islands (Hara, 2006, ch4).

Interim Summary 2

- The implicature triggered by *wa* can be relativized to different agents in an embedded context.
- The definition of CON is reformulated so that it contains shiftable indexicals à la Schlenker (2003).
- The agent of *wa*-implicature is the agent of the speech act local to the position of CON
- the computation of CON involves a syntactic movement which determines
  - the size of the proposition it takes, and
  - the context by which the indexicals are bound.
- This movement is blocked if *wa* is embedded within relative clauses and adjunct clauses due to the island violation.
- See Hara (2005b) and Hara (2006, ch3)

What's next?

- Why is the local computation of *wa*-implicatures not possible?

(29) [$_{CP}$ [$_{IP}$ [$_{NP}$ **CON**$_j$ [$_{CP}$ (which$_i$) [$_{XP}$ t$_j$ Chomsky-**wa**] t$_i$ wrote] book]$_{...}$]] (17)

???

Relative Clauses

- Following Quine (1960), Heim and Kratzer (1998) treat relative clauses as predicates.
- The relative clause involves movement of a relative operator, which leaves a variable.
- The relative operator then lambda-abstracts over the embedded IP:

(30) $[\![\textbf{which}_1\ \textbf{Chomsky wrote}\ \boldsymbol{t}_1\ ]\!]^{g^{1/x}}$
$= \lambda x.$ Chomsky wrote $g^{1\to x}(1)$
$= \lambda x.$ Chomsky wrote x

- relative clauses are predicates, i.e., type $< e, t >$

The argument of CON

- CON indicates a limitation of the attitude-holder's knowledge,
- i.e., the attitude-holder knows:
  - B(F) is true but
  - considers the possibility of a stronger alternative B(F) being false.
- Hence, the argument of CON (i.e., B(F)) needs to be type t,
- since it is not possible to know truth-value of a property.

Semantic Types

(17) *Itsumo CHOMSKY-wa kai-ta hon-ga
always Chomsky-Con write-Past book-Nom
shuppan-sa-re-ru.
publish-do-Pass-Present
'The book which at least Chomsky wrote is always published.'

(29) [$_{CP}$ [$_{IP}$ [$_{NP}$ **CON**$_j$ [$_{CP}$ (which$_i$) [$_{XP}$ t$_j$ Chomsky-**wa**] t$_i$ wrote] book]$_{...}$]] (17)

- The embedded CP ' (which) Chomsky wrote' is a property/predicate (type $< e, t >$), not a proposition (type t);
- Type Mismatch!
- (17) is not compatible with Contrastive-marking.

Attitude predicates again

- Having an attitude predicate within a relative clause seems to improve the grammaticality of *wa*-marking under the relative clause.

(31) ?Kinou [$_{NP}$ [e$_i$ NIHONGO-**wa** dekiru to] e$_i$ omot-teiru
yesterday [[e$_i$ Japanese-**Con** capable Comp e$_i$ think-Prog
hito] -ni at-ta.
person] -Dat meet-Past
'I met the person who thinks he/she can speak at least Japanese.'

Shiftable indexicals again

(32) ?Kinou [[pro_i NIHONGO-**wa** dekiru to] t_i omot-teiru
yesterday *pro* Japanese-**Con** capable Comp *t* think-Prog
hito]-ni at-ta.
person-Dat meet-Past
'I met [the person]$_i$ who thinks he/she$_i$ can speak at least Japanese.'

- I propose to treat the empty pronoun *pro* as a shiftable indexical:
  - *agent*(c), 'I' of the reported speech

pro and *zibun* as shiftable indexicals

- Indeed, the overt use of the shiftable indexical *zibun* (see Oshima, 2004) further improves the grammaticality.

(33) Kinou [[zibun$_i$-ga NIHONGO-**wa** dekiru to] t_i omot-teiru
yesterday self-Nom Japanese-**Con** capable Comp think-Prog
hito]-ni at-ta.
person-Dat meet-Past
'I met [the person]$_i$ who thinks himself/herself$_i$ can speak at least Japanese.'

No variable

- The examples with *pro* and *zibun* have a parallel structure to:

(34) [[MARY-**wa** ki-ta to] omot-teiru *t* hito]-ga iru.
Mary-**Con** come-Past Comp think-Prog *t* person-Nom exist
'There is a person who thinks that at least Mary came.'

- If CON is computed under *omot* 'think',
- the domain of the computation of *wa*-implicature, 'Mary came', '*pro*/zibun came'
- They do not involve a variable, i.e., type *t*
- The problem of the type mismatch disappears.

Interim Summary 4

- Local computation of *wa*-implicatures is not possible due to type mismatch
  - CON seeks for a closed proposition *t*
  - A relative clause is an open predicate $< e, t >$
- Attitude predicates can provide a host for CON.

Concluding Remarks

1. My definition of CON is reformulated so that it contains shiftable indexicals.
2. The computation of CON involves syntactic movement which determines:
   1. the size of the proposition it takes;
   2. the context which binds the indexicals.
3. The notion of shifting context is important:
   - The context of the local speech act determines the agent of the implicature.
   - Attitude predicates allow the embedding of *wa*-marking within islands.

References

Hara, Y. (2005a). Contrastives and gricean principles. In P. Dekker and M. Franke (Eds.), *Fifteenth Amsterdam Colloquium*. Universiteit van Amsterdam.

Hara, Y. (2005b). Implicatures and evidentiality of *because* complements at syntax-semantics-pragmatics interfaces. See Hara (2005b), pp. 118–125.

Hara, Y. (2006, February). *Grammar of Knowledge Representation: Japanese Discourse Items at Interfaces*. Ph. D. thesis, University of Delaware, Newark, DE.

Heim, I. and A. Kratzer (1998). *Semantics in Generative Grammar*. Blackwell.

Kaplan, D. (1989). Demonstratives: an essay on the semantics, logic, metaphysics, and epistemology of demonstratives and other indexicals. In J. Almog, J. Perry, and H. Wettstein (Eds.), *Themes from Kaplan*, pp. 481–563. Oxford: Oxford University Press.

Kuno, S. (1973). *The Structure of the Japanese Language*. Cambridge, Mass: MIT Press.

Nishigauchi, T. (1990). *Quantification in the theory of grammar*. Dordrecht: Kluwer.

Oshima, D. (2004). Logophoricity, empathy and *De Se* interpretation. Stanford University.

Quine, W. (1960). *Word and Object*. Cambridge, MA: MIT Press.

Schlenker, P. (2003). A plea for monsters. *Linguistics and Philosophy 26*(1), 29–120.