



Indirect Reciprocity in Japanese

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Basic Data in English and Japanese

(1) shows the strict interpretation of reciprocity (Heim, Lasnik and May, 1991).

(1) Robin and Chris like each other.

- For each member x in the group given by the subject DP, in this case {Robin, Chris}, x likes every other member of the group: Robin likes Chris and Chris likes Robin
- For a set of entities A and a relation R , every pair $\langle x, y \rangle$ in $A \times A$ where $x \neq y$ in R .
- Japanese (2) is similar to (1): *otagai* works like *each other*.

(2) Robin to Jamie-wa otagai-o seme-ta.
Robin and Jamie-TOP each.other-ACC blame-PAST

- Many occurrences of *otagai* do not require a relational predicate. (3) is an example. It simply means that Hanako should be careful, and Jiro should be careful. There is no true interaction between them. *Otagai* ‘each other’ is like a universal quantifier in this case.
- How do we account for this type of data in Japanese (Imani and Peters, 1996)?

(3) Hanako says to Jiro: Otagai(-ga) ki-o tuku beki-da.
each.other(-NOM) be.careful should.PRES
‘Each of us should be careful.’

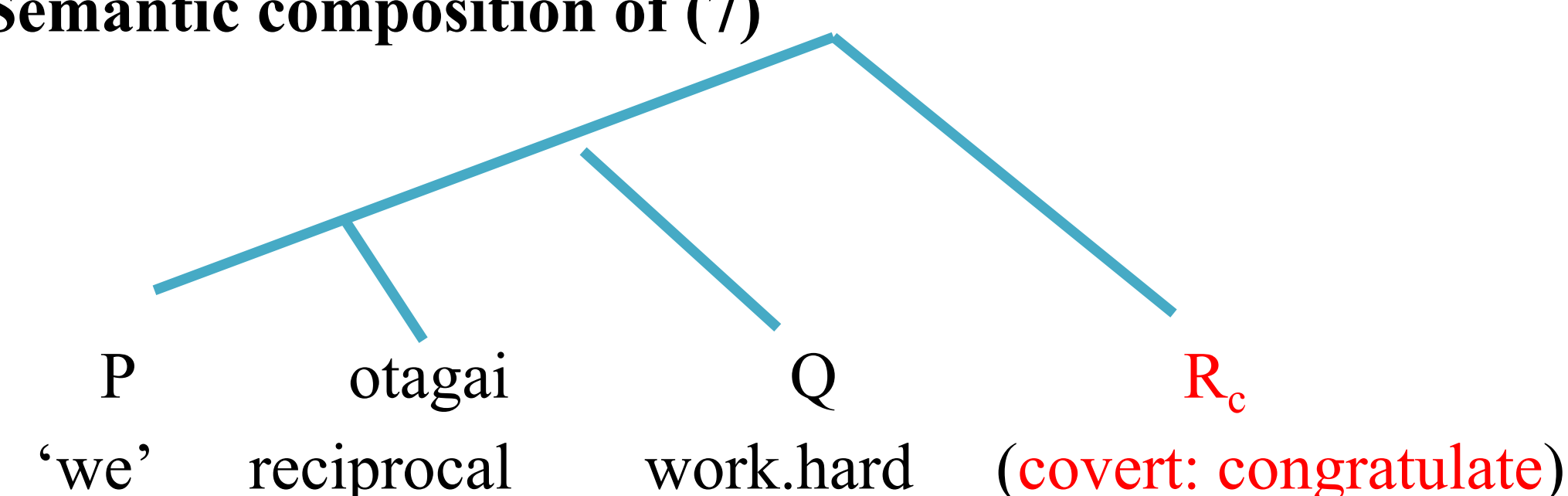
Weaker readings of *each other*

- There are English examples that exhibit a “weaker sense” of reciprocity (Dalrymple, Kanazawa, Kim, Mchombo, and Peters, 1998).

(4) a. As the preposterous horde crowded around, waiting for the likes of Evans and Mike Greenwell, five Boston pitchers sat alongside each other. (The New York Times)
b. Mrs. Smith's third-grade students gave each other measles.

- (4a) only requires that the five Boston pitchers in question are sitting close together on a bench. (4b) also has a weaker reading. In fact, in this case, at least one of the students must have gotten measles from an external source, but that is okay.
- The precise definition of what is minimally required of each other is not easy to determine.
- However, even these weaker readings involve a relational predicate such as *sit alongside* and *give measles to*.

Indirect Reciprocity: Semantic composition of (7)



The reciprocal morpheme *otagai* in Japanese

The Japanese morpheme *otagai* ‘each other’ can occur in a sentence that has a property-denoting predicate (of type $\langle e, t \rangle$), rather than a relation, as shown in (3). This type of “exceptional uses” has been mentioned in the literature (Imani and Peters (1996), Hoji (2006), Nakao (2003) among others), but no formal analysis has been provided. (5) is a similar example.

(5) Hanako says to Jiro: Watsi-tati otagai ganbat -ta ne!
I-PLURAL each.other work.hard-PAST INTERJECTION
‘Each of us did their best. (We congratulate each other.)’

Background story: Hanako and Jiro were high school classmates but had no communication for more than 40 years after graduation. They were reunited at a reunion party and talked to each other. They found that they had successful life despite many challenges.

- (5) does not yield a group reading: Hanako and Jiro worked independently of each other. They did not even have any communication with each other.
- (5) does not mean that each does one’s best for the other: no reciprocity.
- (5) just means that each of them did their best: Hanako did her best, and Jiro did his best: *otagai* ‘each other’ appears to behave like a universal quantifier (with no reciprocal meaning).

Indirect Reciprocity in Japanese

The occurrences of *otagai* ‘each other’ in (3) and (5) exhibit indirect reciprocity.

(6) $\llbracket \text{otagai ‘each other (indirect)’} \rrbracket =$
 $\lambda P . \lambda Q . \lambda R . \forall x [P(x) \rightarrow [Q(x) \ \& \ \forall y [P(y) \ \& \ y \neq x \rightarrow R(x)(y)]]]$

- The context provides a relation (R) that relates the two individuals in a reciprocal fashion.
- Regarding the overt predicate, *otagai* behaves like a universal quantifier.
- (5) is rendered as in (7) **assuming that the relation = congratulate**

(7) $\lambda P . \lambda Q . \lambda R . \forall x [P(x) \rightarrow [Q(x) \wedge \forall y [P(y) \ \& \ y \neq x \rightarrow R(x)(y)]]]$
($\lambda z . z = H \vee z = J$) (work.hard) (**congratulate**) =
 $\forall x [[x = H \vee x = J] \rightarrow \text{work.hard}(x) \wedge \forall y [[P(y) \wedge y \neq x] \rightarrow \text{congratuate}(x)(y)]]]$

- (7) says that Hanako worked hard, Jiro worked hard, and they are related to each other via a relation supplied by the context.
- I contend that this relation is that of congratulating as shown in (7).
- The relation in question must be personal and mutual.

(8) # Jiroo: Boku-tati otagai ookiku nat-ta naa.
I-PLURAL each.other big become- PAST INTERJECTION

Scenario: The speaker is a teenager and has just watched a movie featuring a boy growing up to become a teenager.

- (8) sounds odd because there is no personal or mutual relationship between the teenager and the character in the movie.

Indirect Passives

The indirect passive in Japanese introduces a “sufferer” as a new subject.

- Indirect passives introduce a relation covertly so that a new individual can be semantically incorporated. If so, indirect passive is similar to indirect reciprocity.

(9) $\llbracket \text{-(r)are ‘indirect passive’} \rrbracket =$
 $\lambda P . \lambda x . \lambda y . \exists e [P(x)(e) \ \& \ R_c(x)(y) \ \& \ \text{ suffers-from}(e)(y)]]$

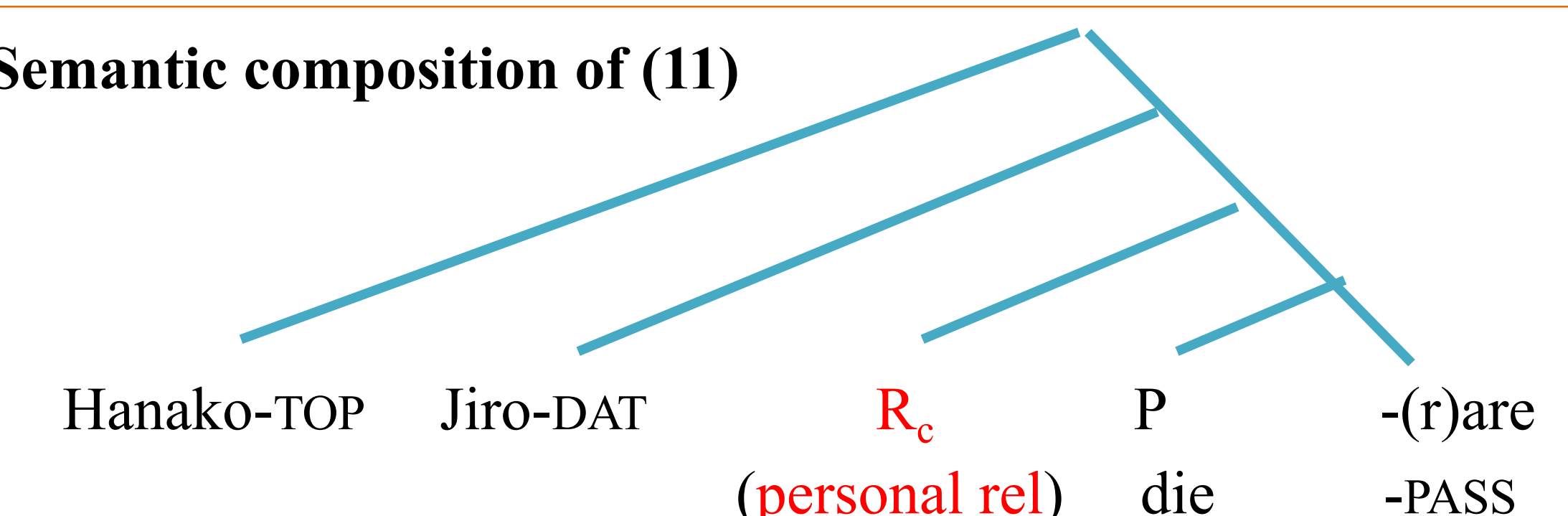
(9) says that the indirect passive morpheme in Japanese requires a contextually salient relation that creates a new “participant”, which is then becomes the subject of a passive sentence. Here’s how the derivation of an indirect passive sentence works.

(10) Hanako-wa Jiro-ni sin-are-ta.
Hanako-TOP Jiro-DAT die-PASS-PAST
‘Hanako suffered from Jiro’s death.’
[Literal: ‘Hanako was died by Jiro.’]
(11) $\lambda P . \lambda R . \lambda x . \lambda y . \exists e [P(x)(e) \ \& \ R(x)(y) \ \& \ \text{ suffers-from}(e)(y)]$
(**die**)(**personally-related-to**)(Jiro)(Hanako) = $\exists e [\text{die}(\text{Jiro})(e) \ \& \ \text{ personally-related-to}(\text{Jiro})(\text{Hanako}) \ \& \ \text{ suffers-from}(e)(\text{Hanako})]$

- (11) says that x died, and y suffered from this event. On top of that x and y are related via the relation R_c . This usually has to be a personal relation.
- I discuss the indirect passive because it is similar to the indirect reciprocity in that a covert relation is introduced because that is required by the construction in question.
- Perhaps Japanese has the flexibility of covertly introducing a relation when one is required for the construction.
- If (12) is uttered when Hanako was merely David Bowie’s avid fan, that is not enough to license it. A personal and mutual relationship is required.

(12) # Hanako-wa David Bowie-ni sin-are-ta.
Hanako-TOP David Bowie-DAT die-PASS-PAST

Indirect Passives: Semantic composition of (11)



Conclusion

- The Japanese reciprocal morpheme always involve reciprocity but the relation in question may be supplied by the context. This is very similar to the indirect passive. The covert relation must be personal and mutual.
- There are exceptions that require further research.

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