

## EPP AND SEMANTICALLY VACUOUS SCRAMBLING

Shigeru Miyagawa

MIT

### 1. Saito's Discovery (1989) – evidence used for a widely accepted view of scrambling

Scrambling in Japanese results from a purely optional movement operation (e.g., Fukui 1993; Kuroda 1988; Saito 1989, 2004; Saito and Fukui 1998; Takano 1998)

- (1) a. John-ga [WH-<sub>ISD</sub> Taro-ga nani-o katta ka] siritagatteiru.  
John-NOM [WH-<sub>ISD</sub> Taro-NOM what-ACC bought Q] want:to:know  
'John wants to know what Taro bought.'
- b. ?Nani-o<sub>i</sub> John-ga [WH-<sub>ISD</sub> Taro-ga t<sub>i</sub> katta ka] siritagatteiru.  
what-ACC<sub>i</sub> John-NOM [WH-<sub>ISD</sub> Taro-NOM t<sub>i</sub> bought Q] want:to:know
- (2) Minimalist version of Saito's (1989) argument (Saito 2004)  
Scrambling in Japanese is not driven by the EPP.

### 2. Optional movement and the EPP

Reinhart (1995) and particularly Fox (2000) propose a theory of optional operation which imposes a requirement on the movement as follows. Fox specifically addresses instances in which QR may apply optionally.

- (3) Scope Economy (Fox 2000)  
A Scope Shifting Operation can move XP<sub>1</sub> from a position in which it is interpretable only if the movement crosses XP<sub>2</sub> and <XP<sub>1</sub>, XP<sub>2</sub>> is not scopally commutative. (Fox 2000:26)

Chomsky (2001) applies this notion of requiring some effect on the output to optional movements such as OS (Holmberg 1986)

- (4) a. v\* is assigned an EPP feature only if that has an effect on outcome.  
b. The EPP position of v\* is assigned INT.
- (5) Optional operations can apply only if they have an effect on outcome... (Chomsky 2001:34)

### 3. Saito (2004) on Saito (1989)

Saito (1989) adopts is that movement operations are subject to the Proper Binding Condition (PBC).

- (6) Traces must be bound. (Fiengo 1977, May 1977)

- (7) a. ??Who<sub>i</sub> do you wonder [which picture of t<sub>i</sub>]<sub>j</sub> John likes t<sub>j</sub>?  
 b. \*[Which picture of t<sub>i</sub>]<sub>j</sub> do you wonder who<sub>i</sub> John likes t<sub>j</sub>?

Riemsdijk and Williams (1981).

- (8) a. Who<sub>i</sub> t<sub>i</sub> knows [which picture of whom]<sub>j</sub> Bill bought t<sub>j</sub>?  
 b. ??[Which picture of whom]<sub>j</sub> do you wonder who<sub>i</sub> t<sub>i</sub> bought t<sub>j</sub>?

(Engdahl 1986)

- (9) [Which picture of himself]<sub>i</sub> did John like t<sub>j</sub>?

“chain binding” Barss (1984)

- (10)a. John-ga [WH-<sub>ISD</sub> Taroo-ga nani-o katta ka] siritagatteiru.  
 John-NOM [WH-<sub>ISD</sub> Taro-NOM what-ACC bought Q] want:to:know  
 'John wants to know what Taro bought.'  
 b. ?Nani-o<sub>i</sub> John-ga [WH-<sub>ISD</sub> Taroo-ga t<sub>i</sub> katta ka] siritagatteiru.  
 what-ACC<sub>i</sub> John-NOM [WH-<sub>ISD</sub> Taro-NOM t<sub>i</sub> bought Q] want:to:know

- (11) Scrambling is not EPP driven. (Saito 2004)

#### 4. Counterarguments

##### 4.1. Evidence for the EPP on T: Miyagawa (2001)

- (12) Taroo-ga zen'in-no-syasin-o mi-nakat-ta.  
 Taro-NOM all-GEN-photo-ACC see-NEG-PAST  
 'Taro didn't see everyone's photos.'  
 not > all, all > not

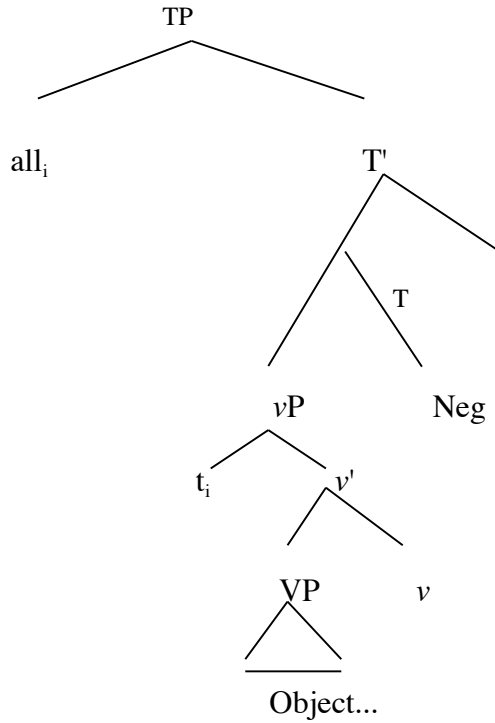
Kato (1988).

- (13) Zen'in-no-gakusei-ga san-satu-no hon-o yoma-nakat-ta.  
 all-GEN-student-NOM three-GEN book-ACC read-NEG-PAST  
 'Every student did not read three book.'  
 \*not > all, all > not

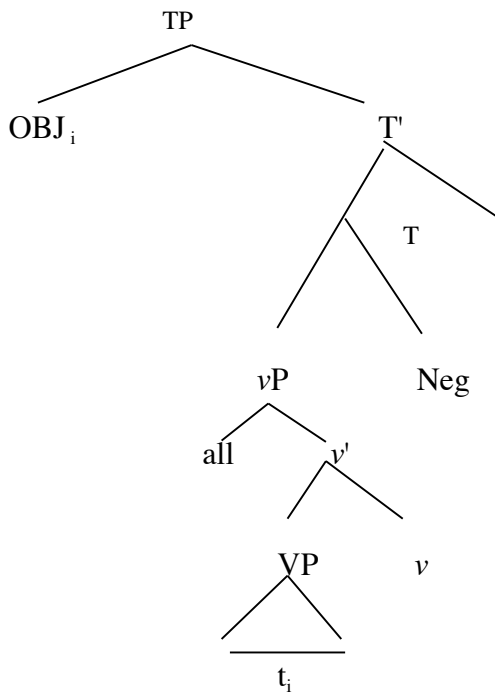
Miyagawa (2001)

- (14) San-satu-no-hon-o<sub>i</sub> zen'in-no-gakusei-ga t<sub>i</sub> yoma-nakat-ta.  
 3-CL-book-ACC<sub>i</sub> all-GEN-student-NOM t<sub>i</sub> read-NEG-PAST  
 not > all, all > not

(15)=(13)



(16)=(14)



#### 4.2. Reanalyzing Saito's arguments

As noted earlier, Saito (1989) gave following kinds of arguments against reconstruction.

(17)a. ??Who<sub>i</sub> do you wonder [which picture of  $t_{i,j}$ ] John likes  $t_j$ ?

b. \*[Which picture of  $t_{i,j}$ ] do you wonder who<sub>i</sub> John likes  $t_j$ ?

- (18)a. Who<sub>i</sub> t<sub>i</sub> knows [which picture of whom]<sub>j</sub> Bill bought t<sub>j</sub>?  
 b. ?? [Which picture of whom]<sub>j</sub> do you wonder who<sub>i</sub> t<sub>i</sub> bought t<sub>j</sub>?

Re (18): No reconstruction into an island (e.g., Cresti 1995, Longobardi 1987)

May (1985)

- (19) What<sub>i</sub> did every boy buy t<sub>i</sub>? PL

Longobardi (1987)

- (20) What<sub>i</sub> do you wonder whether every boy bought t<sub>i</sub>? \*PL

#### 4.3. Argument against radical reconstruction

Direct evidence against two points Saito suggests:

- (i) there is no reconstruction due to the PCB;  
 (ii) the wh-phrase in (1b), which has scrambled out of an indirect question, undergoes radical reconstruction.

Lebeaux (1988); cf. also van Riemsdijk and Williams (1981), Freidin (1986)). Note the contrast below.

- (21) ??/\*[Which criticism of John<sub>i</sub>]<sub>j</sub> did he<sub>i</sub> reject t<sub>j</sub>?

- (22) [Which criticism that John<sub>i</sub> heard]<sub>j</sub> did he<sub>i</sub> believe t<sub>j</sub>?

The data gives evidence for reconstruction in English, in contrast to the assertion in Saito (1989).

Nishigauchi (2002) observes that there is a similar argument/adjunct asymmetry in Japanese; I will introduce a crucial example from his work later, but because it involves one complication, I will first present a pair of examples below to illustrate the “Lebeaux” effect in Japanese.

- (23) a. ??/\* [Minna-no        John<sub>i</sub>-no    hihan-o]<sub>j</sub>                kare<sub>i</sub>-ga  
           [everyone-GEN    John<sub>i</sub>-GEN criticism-ACC]<sub>j</sub>    he<sub>i</sub>-NOM  
           [Hanako-ga        t<sub>j</sub>    osiete-kureta    to]    itta.  
           [Hanako-NOM    t<sub>j</sub>    told.him        C]    said  
           ‘[Everyone’s criticism of John], he said that Hanako told him.’
- b. [ [Minna-ga                John<sub>i</sub>-kara    kakusite-ita]    hihan-o]<sub>j</sub>                kare<sub>i</sub>-ga  
    [ [everyone-NOM        John<sub>i</sub>-from    was.hiding]    criticism-ACC]<sub>j</sub>    he<sub>j</sub>-NOM  
    [Hanako-ga        t<sub>j</sub>    osiete-kureta    to]    itta.  
    [Hanako-NOM    t<sub>j</sub>    told.him        C]    said  
    ‘The criticism that everyone was hiding from John, he said that Hanako told him.’

Nishigauchi (2002: 84), taken from Lanik and Saito (1999).

- (24) [John<sub>i</sub>-ni-tuite-no dono hon]-o<sub>j</sub> kare<sub>i</sub>-ga  
 [John<sub>i</sub>-about-GEN which article]-ACC<sub>j</sub> he<sub>i</sub>-NOM  
 [Hanako-ga t<sub>j</sub> ki-ni-itte iru ka] sitte-iru.  
 [Hanako-NOM t<sub>j</sub> like Q] knows  
 'He wants to know which book about John, Hanako likes.'

### 5. Escape hatch in indirect question: the real significance of Saito (1989)

Saito's (1989) "discovery," with some extensions, gives support to two proposals in the literature:

- Watanabe's (1992) proposal that an empty operator is moving in wh-in-situ (or alternatively, Tsai's (1994) idea that wh-in-situ is licensed by unselective binding by Q on C);
- A particular version of Kuroda's (1988) idea that there is "no forced agreement" in Japanese; the particular version I will demonstrate is that when a Head agrees with an element, the specifier of this Head may host some other element, thus showing that there is no forced Spec-Head agreement.

What really is happening with Saito's (10b), repeated below?

- (10) b. ?Nani-o<sub>i</sub> John-ga [<sub>WH-ISL</sub> Taro-ga t<sub>i</sub> katta ka] siritagatteiru.  
 what-ACC<sub>i</sub> John-NOM [<sub>WH-ISL</sub> Taro-NOM t<sub>i</sub> bought Q] want:to:know  
 'John wants to know what Taro bought.'

The wh-phrase is able to employ the Specifier of CP of the indirect question as an escape hatch.

- (26) ?Nani-o<sub>i</sub> John-ga [<sub>WH-ISL</sub> t<sub>i</sub> [<sub>TP</sub> Taro-ga t<sub>i</sub> katta ka]] siritagatteiru.  
 what-ACC<sub>i</sub> John-NOM [<sub>WH-ISL</sub> t<sub>i</sub> [<sub>TP</sub> Taro-NOM t<sub>i</sub> bought Q]] want:to:know  
 'John wants to know what Taro bought.'

Two possible reasons why the wh-phrase may move through the Spec of CP:

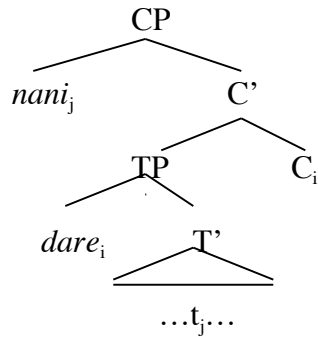
- (i) the scrambling of the wh-phrase into the Spec of CP counts as wh-movement, and fulfills the [+wh] selectional requirement (e.g., Takahashi 1993)
- (ii) the [+wh] requirement is met even before the wh-phrase moves; an agreement relation is established between the wh feature on the wh-phrase-in-situ and the Q feature on C

(ii) is right?

- (27) ?Nani-o<sub>i</sub> John-ga [<sub>WH-ISL</sub> t<sub>i</sub> [<sub>TP</sub> dare-ga t<sub>i</sub> katta ka]] siritagatteiru ndai?  
 what-ACC<sub>i</sub> John-NOM [<sub>WH-ISL</sub> t<sub>i</sub> [<sub>TP</sub> who-NOM t<sub>i</sub> bought Q]] want:to:know Q  
 'What does John wants to know who bought?'  
 (answer: John wants to know who bought A BOOK.)

No Spec-Head Agreement (cf. Kuroda 1988)

(28) (Indirection question portion)



(29) Japanese has no forced Spec-Head agreement. Kuroda (1988)

## 6. Further note on radical reconstruction

Saito (2004) gives two well-known phenomena as further evidence for reconstruction.

Binding (cf. Mahajan 1990, Saito 1992)

(30) ?Karera-o<sub>i</sub> [otagai-no sensei]-ga t<sub>i</sub> hihansita (koto)  
 they-ACC<sub>i</sub> [each.other-GEN teacher]-NOM t<sub>i</sub> criticized  
 'Each other's teacher criticized them.'

LD scrambling

(31) \*Karera-o<sub>i</sub> [otagai-no sensei]-ga [<sub>CP</sub> Tanaka-ga t<sub>i</sub> hihansita to]  
 they-Acc<sub>i</sub> [each.other-GEN teacher]-NOM [<sub>CP</sub> Tanaka-NOM t<sub>i</sub> criticized C]  
 itta (koto)  
 said  
 'Each other's teacher said that Tanaka criticized them.'

Oka (1989)/Tada (1993) facts for quantifier scope

(32) Dareka-ga daremo-o aisiteiru.  
 someone-NOM everyone-ACC love  
 'Someone loves everyone.'  
 some > every, \*every > some

(33) Daremo-o<sub>i</sub> dareka-ga t<sub>i</sub> aisteiru. (Kuroda 1971)  
 everyone-ACC<sub>i</sub> someone-NOM t<sub>i</sub> loves  
 every > some, some > every

Oka (1989)/Tada (1993)

(34) Daremo-o<sub>i</sub> dareka-ga [Tanaka-ga t<sub>i</sub> aisiteiru to] itta.  
 everyone-ACC<sub>i</sub> someone-NOM [Tanaka-NOM t<sub>i</sub> love C] said  
 'Everyone, someone said that Tanaka loves t.'  
 some > every, \*every > some

Suppose, as has been suggested in the literature, that scrambling of a quantifier may count as an instance of overt QR (cf. Kitahara (1995), Miyagawa (2003b), Sohn (1995), Tonoike (1997)).

(35) Scope Economy (Fox 2000)

A Scope Shifting Operation can move  $XP_1$  from a position in which it is interpretable only if the movement crosses  $XP_2$  and  $\langle XP_1, XP_2 \rangle$  is not scopally commutative. (Fox 2000:26)

Optional application of QR is possible if it leads to a new scope relation

May (1977): QR is clause bound.

- (36) a. Someone loves everyone.  
       some > every, every > some  
       b. Someone thinks that Mary loves everyone.  
       some > every, \*every > some

Moltmann and Szabolci (1994) as discussed by Fox (2000).

- (37) a. One girl knows that every boy bought a present for Mary.  
       one > every, \*every > one  
       b. One girl knows what every boy bought for Mary.  
       one > every, every > one

- (38) Daremo- $t_i$  dareka-ga [ $t_i$  Tanaka-ga  $t_i$  aisiteiru to] itta.  
       everyone-ACC $_i$  someone-NOM [ $t_i$  Tanaka-NOM  $t_i$  love C] said  
       'Everyone, someone said that Tanaka loves  $t_i$ .'  
       some > every, \*every > some

This example shows the effect of "clause boundedness" of QR.

Editorial situation:

- (39) Dono-ronbun- $m_o$  dareka-ga [ $t_i$  Tanaka-kyouzyu-ga  $t_i$   
       every-article-ACC $_i$  someone-NOM [ $t_i$  at.least.one.professor-NOM  $t_i$   
       hihansuru to] omotteiru.  
       criticize C] thinks.  
       'Every article, someone thinks that Professor Tanaka will criticize.'  
       some > every, ??/\*every > some

- (40) *Dono-ronbun-mo<sub>i</sub> dareka-ga [t<sub>i</sub> sukunakutomo-hitori-no-kyouzyu-ga*  
 every-article-ACC<sub>i</sub> someone-NOM [t<sub>i</sub> at.least.one.professor-NOM  
 t<sub>i</sub> hihansuru to] omotteiru.  
 t<sub>i</sub> criticize C] thinks.  
 'Every article, someone thinks that at least one professor will criticize.'  
 some > every, (?)every > some

Same effect with indirect question – similar to the Moltmann/Szabolci English example in (37b)

- (41) *Dono-hon-mo<sub>i</sub> dareka-ga [CP t<sub>i</sub> [dare-ga t<sub>i</sub> yonda ka]]*  
 every-book<sub>i</sub> someone-NOM [CP t<sub>i</sub> [who-NOM t<sub>i</sub> read Q]]  
 siritagatteiru.  
 want:to:know  
 'Someone wants to know who read every book.'  
 every > someone, someone > every

Problem: no PL here (Hoji 1986).

- (42) *Daremo-o dare-ga aisiteiru no?*  
 everyone-ACC wh-NOM love Q  
 'Everyone, who loves?'  
 Single pair, \*pair-list

## 7. Where radical reconstruction really exists

No (radical) reconstruction: adjunct

- (43) [John<sub>i</sub>-ni-tuite-no dono hon]-o<sub>j</sub> kare<sub>i</sub>-ga  
 [John<sub>i</sub>-about-GEN which article]-ACC<sub>j</sub> he<sub>i</sub>-NOM  
 [Hanako-ga t<sub>j</sub> ki-ni-itte iru ka] sitte-iru.  
 [Hanako-NOM t<sub>j</sub> like Q] knows  
 'He wants to know which book about John, Hanako likes.'

Again, no (radical) reconstruction: observes conditions on optional movement

- (44) *Dono-ronbun-mo<sub>i</sub> dareka-ga [t<sub>i</sub> sukunakutomo-hitori-no-kyouzyu-ga*  
 every-article-ACC<sub>i</sub> someone-NOM [t<sub>i</sub> at.least.one.professor-NOM  
 t<sub>i</sub> hihansuru to] omotteiru.  
 t<sub>i</sub> criticize C] thinks.  
 'Every article, someone thinks that at least one professor will criticize.'  
 some > every, (?)every > some

A true case of radical reconstruction/PF scrambling?

- (45) *Daremo-o<sub>i</sub> dareka-ga [Tanaka-ga t<sub>i</sub> aisiteiru to] itta.*  
 everyone-ACC<sub>i</sub> someone-NOM [Tanaka-NOM t<sub>i</sub> love C] said  
 'Everyone, someone said that Tanaka loves t.'  
 some > every, \*every > some  
 (cf. also Sauerland and Elbourne 2002)



(46) Radical reconstruction

Radical reconstruction occurs only when the scrambling is not motivated by any universal conditions on movement.

(47) a. [TP Taroo-ga<sub>i</sub> [vP t<sub>i</sub> hon-o kat]-ta.  
[TP Taro-Nom<sub>i</sub> [vP t<sub>i</sub> book-Acc buy]-Past  
'Taro bought a book'

b. [TP Hon-o<sub>i</sub> [vP Taroo-ga t<sub>i</sub> kat]-ta.  
[TP book-Acc<sub>i</sub> [vP Taroo-ga t<sub>i</sub> buy]-Past

(48) San-satu-no-hon-o<sub>i</sub> zen'in-no-gakusei-ga t<sub>i</sub> yoma-nakat-ta.  
3-CL-book-ACC<sub>i</sub> all-GEN-student-NOM t<sub>i</sub> read-NEG-PAST  
not > all, all > not

Long-distance scrambling cannot meet the EPP requirement of the T to which it adjoins (Miyagawa 2001).

(49) Syukudai-o<sub>i</sub> zen'in-ga [CP sensei-ga t<sub>i</sub> dasu to]  
homework-Acc all-Nom [CP teacher-Nom t<sub>i</sub> assign C]  
omowa-nakat-ta.  
think-Neg-Past  
'Homework, all did not think that the teacher will assign.'  
\*not >> all, all >> not

(50) Obligatory and optional scrambling

(i) Clause-internal scrambling triggered by the EPP on T — it is not an optional movement;

(ii) Long-distance scrambling is an optional movement, and is subject to the condition on optional operation.

(51) Types of chain spell-outs

	Head	Tail
(i) overt movement:	pronounce, interpret	(interpret)
(ii) covert movement <sup>1</sup> :	interpret	pronounce (, interpret)
(iii) radical reconstruction:	pronounce	interpret

<sup>1</sup> See, for example, Bobaljik 1995, Fox and Nissenbaum 1999, Pesetsky 1998, Groat and O'Neil 1996.

When, precisely, does radical reconstruction occur?

Neeleman and Reinhart (1998): scrambling may lead to a variation in the focus potential of the sentence. See Ishihara (2001).

- (52) Taroo-ga [VP **hon-o** katta]  
Taro-Nom [VP book-Acc bought]  
'Taro bought a book.'

(52) can be used as an answer to the following three questions:

- (53) a. What happened? (focus on IP)  
b. What did Taro do? (focus on VP)  
c. What did Taro buy? (focus on object)

(54) has a different focus domain set due to the scrambling of the object.

- (54) Hon-o<sub>i</sub> **Taroo-ga** [<sub>VP</sub> t<sub>i</sub> katta]  
book-Acc<sub>i</sub> Taro-Nom [<sub>VP</sub> t<sub>i</sub> bought]

The focus domains are the subject NP **Taroo** and the TP, but the VP cannot be a focus domain because it does not contain the stress. Therefore (54) cannot be used to answer “What did Taro do?”

- (55) Hanako-ga [<sub>CP</sub> Taroo-ga hon-o katta to]itta.  
Hanako-Nom [<sub>CP</sub> Taro-Nom book-Acc bought C] said  
'Hanako said that Taro bought a book.'

This sentence can be used to answer the following three questions.

- (56) a. What did Hanako say happened? (focus on subordinate IP)  
b. What did Hanako say that Taro did? (focus on subordinate VP)  
c. What did Hanako say that Taro bought? (focus on subordinate object)

- (57) Hon-o<sub>i</sub> Hanako-ga [<sub>CP</sub> t<sub>i</sub> Taroo-ga t<sub>i</sub> katta to] itta.  
Book-Acc<sub>i</sub> Hanako-Nom [<sub>CP</sub> t<sub>i</sub> Taro-Nom t<sub>i</sub> bought C] said

The scrambling of *hon-o* 'book-Acc' within the subordinate clause deprives the focus reading on the VP, as we saw for the example (54). This means that this scrambling has a meaningful effect on the output of this movement, hence the first movement is licensed. Note, now, that the entire sentence in (57) can answer (56a) and (56c), but not (56b).

- (58) Radical reconstruction ("PF" scrambling)  
Radical reconstruction occurs only if a quantifier is moved by illicit optional movement.

This is a fundamentally different portrayal of radical reconstruction than Saito (1989) and Sauerland and Elbourne (2002). They assume that radical reconstruction — or PF scrambling —

is widely prevalent. What I have shown is that PF scrambling occurs in an extremely narrow range of data — when a quantifier is moved illicitly.

A prediction about a Condition C violation that should occur even if the antecedent is contained in an adjunct. Note the contrast below.

- (59) a. [Taroo<sub>i</sub>-ga kaita ronbun]-o<sub>j</sub> kare<sub>i</sub>-ga [Hanako-ga t<sub>j</sub> hihansita to]  
 [Taro<sub>i</sub>-NOM wrote article]-ACC<sub>j</sub> kare<sub>i</sub>-Nom [Hanako-NOM t<sub>j</sub> criticize C]  
 itta.  
 said  
 ‘He said that Hanako criticized the article that John wrote.’
- b. ??/\*[Taroo<sub>i</sub>-ga kaita dono ronbun]-mo<sub>j</sub> kare<sub>i</sub>-ga  
 [Taro<sub>i</sub>-NOM wrote every article]<sub>j</sub> he<sub>i</sub>-NOM  
 [Hanako-ga t<sub>j</sub> hihansita to] itta.  
 [Hanako-NOM t<sub>j</sub> criticize C] said  
 ‘He said that Hanako criticized every article that John wrote.’

### 8. The nature of Saito's original data

- (60) ?Nani-o<sub>i</sub> John-ga [<sub>WH-ISL</sub> Taroo-ga t<sub>i</sub> katta ka] siritagatteiru.  
 what-ACC<sub>i</sub> John-NOM [<sub>WH-ISL</sub> Taro-NOM t<sub>i</sub> bought Q] want:to:know  
 'John wants to know what Taro bought.'

No radical reconstruction: conditions on optional movement is observed

- (61) [John<sub>i</sub>-ni-tuite-no dono hon]-o<sub>j</sub> kare<sub>i</sub>-ga  
 [John<sub>i</sub>-about-GEN which article]-ACC<sub>j</sub> he<sub>i</sub>-NOM  
 [Hanako-ga t<sub>j</sub> ki-ni-itte iru ka] sitte-iru.  
 [Hanako-NOM t<sub>j</sub> like Q] knows  
 'He wants to know which book about John, Hanako likes.'

One place where D-linking has been identified is in pair-list interpretation (e.g., Comorovski 1996, Hornstein 1995).

- (62) Who bought what?

Bolinger (1978).

- (63) a. It's nice to have all those times scheduled, but when are you doing what?  
 (#But what are you doing when?)
- b. It's nice to have all those activities ahead of you, but what are you doing when?  
 (#But when are you doing what?)

(64) Dare-ga nani-o katta no?  
who-Nom what-Acc bought Q  
'Who bought what?'

(65) Nani-o<sub>i</sub> dare-ga t<sub>i</sub> katta no?  
what-Acc<sub>i</sub> who-Nom t<sub>i</sub> bought Q  
'What, who bought?'