

On the interactions with pragmatics in Role and Reference Grammar

Mitsuaki Shimojo

shimojo@buffalo.edu

University at Buffalo, The State University of New York

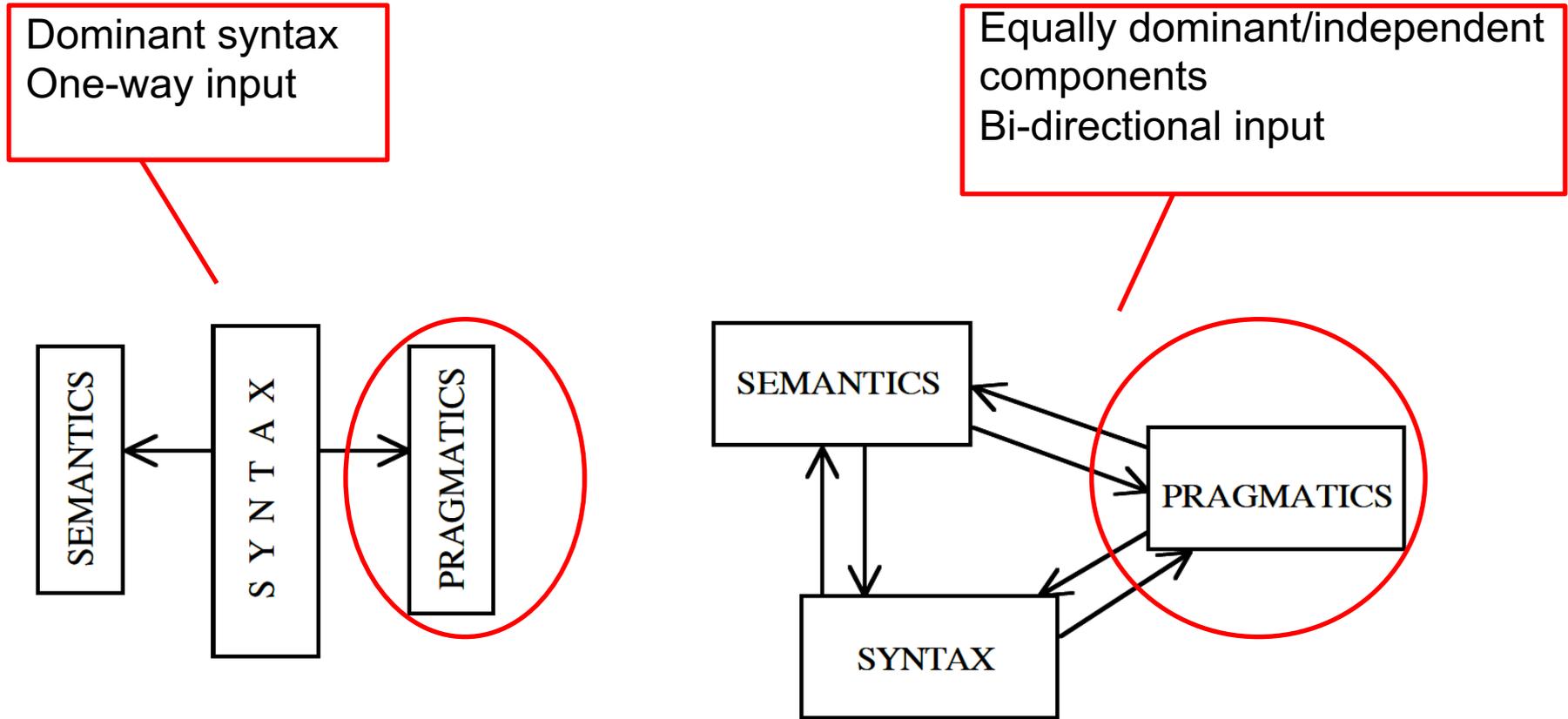


Figure 1 : Syntactocentric vs. parallel architecture theories

(Van Valin 2014; Jackendoff 2002)

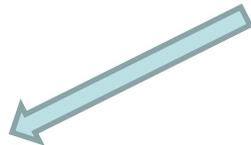
Assumptions

- Each utterance has discourse representation structures [DRS].
- The current utterance reflects input from the DRS of the preceding utterance.
- The following utterance reflects input from the DRS of the current utterance, etc.

Utterance (U_{i-1}) ——— Discourse representation structure (U_{i-1})



Utterance (U_i) ——— Discourse representation structure (U_i)



Utterance (U_{i+1}) ——— Discourse representation structure (U_{i+1})

Issues

- Despite the parallel architecture of RRG, the previous analyses focused mostly on the pragmatic influence on syntax and semantics, and the bi-directionality of interactions has not been described fully.
- Also, while interactions with discourse-pragmatics are language specific, observations in discourse suggest a need for further development of DRS.

Goal

- To add a new dimension to the presupposition and assertion-based DRS in order to represent the bi-directionality of interactions and capture the observations in discourse.

Discourse data in Japanese

- Selection of privileged syntactic argument [PSA]
- Argument forms: zero anaphora, topicalization, absence of post-nominal marking
- Postposing

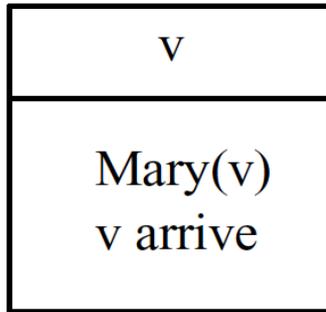
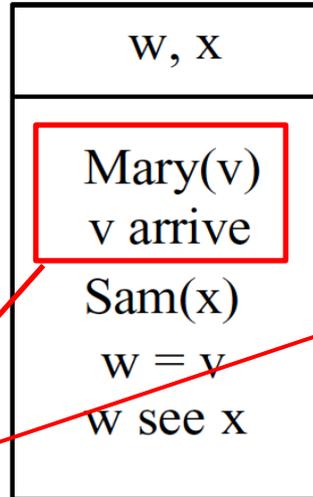
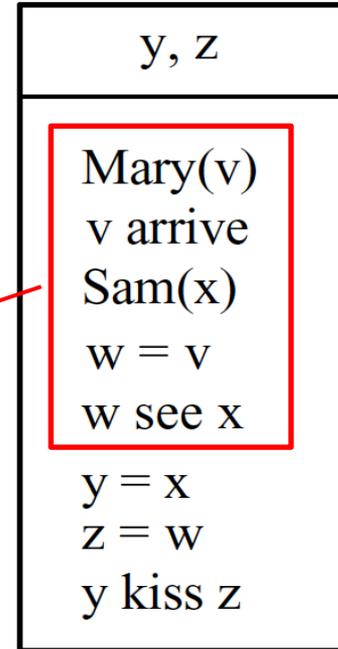
Selection of PSA in English

- A subject tends to represent “evoked” information (Prince 1981).
- The predicate-focus is the default focus structure (Lambrecht 1994).
- PSA = highly topical (default) (Van Valin & LaPolla 1997).

Pragmatic pivot in a topic chain (Van Valin 2005: 103)

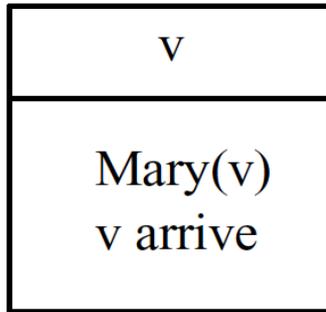
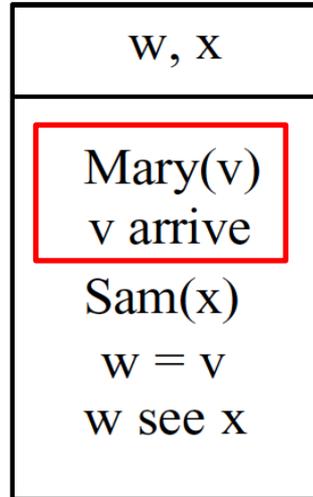
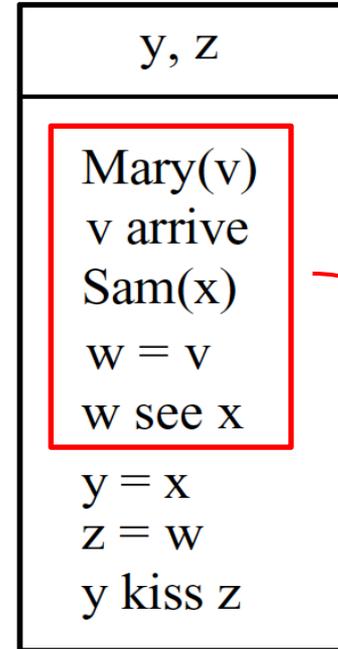
- (4.17) a. Mary_i walked into the department store, —_i looked at a couple of dresses, —_i bought one, —_i went up to the coffeeshop, —_i ordered a cup of coffee and —_i rested her weary feet.
- b. Milt_i strolled into the casino —_i wearing a fake beard, wig and glasses, but —_i was immediately recognized by the security people and —_i was unceremoniously escorted back out to the street.

Mary arrived.

She saw Sam.He kissed her.Presupposition
DRS

(Van Valin 2005: 172)

Mary arrived.

She saw Sam.He kissed her.

- ‘Mary’ and ‘Sam’ are both presupposed and equally activated; i.e., either entity may be a default PSA, but ‘Mary’ (pragmatic pivot) is preferred for topic continuity or greater coherence.
- The continuity/coherence ground is not clearly represented by the current formulation of DRS.

PSA representing anticipated topicality

A: How was dinner?

B: I [had **steak**]_{foc}

A': How was dinner?

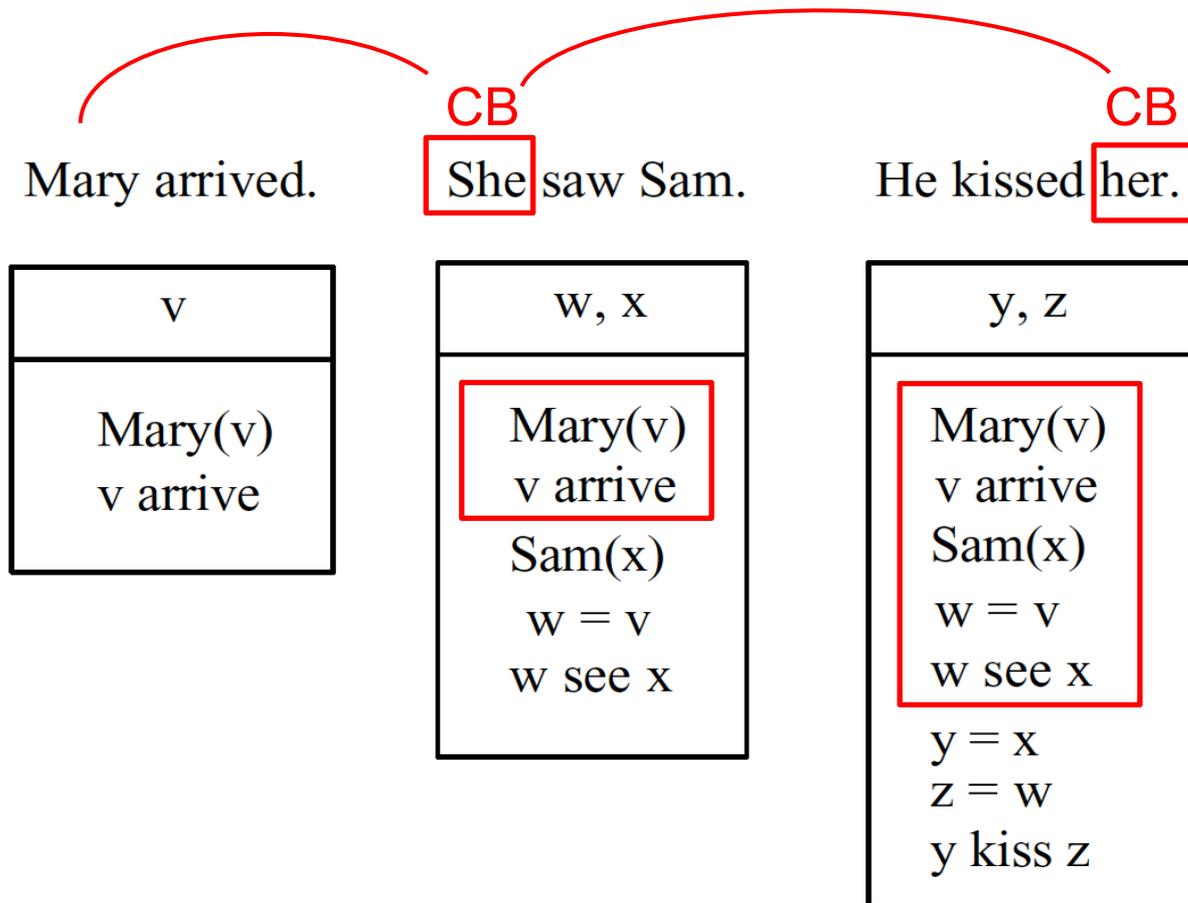
B': [**Steak** was amazing]_{foc}

- The focal argument may be selected as PSA as in (B') (non-default situation).
- Referents represented by a PSA are intended to be salient and more likely to continue as center of attention.
- PSA selection reflects the speaker's pragmatic intention about "forward-looking" saliency (Grosz et al. 1995), which is separate from the focus structure of an utterance.

- An utterance represents two types of center of attention (the centrally talked-about entity): a backward-looking center [CB] and a forward-looking center [CF] (Grosz et al. 1995).
- A backward-looking center [CB] is the centrally talked-about entity in the preceding discourse up to the current utterance, and therefore relates to presupposition DRS.

Backward-looking center (CB) (Grosz et al. 1995)

CB of the current utterance (U_i) is the continuing entity from the immediately preceding utterance (U_{i-1}) AND the highest ranked CF (see next slide) of (U_{i-1}).



- A forward-looking center (CF) is an entity which is expected to continue in the following discourse. The likelihood to continue as the centrally talked-about entity is defined by the CF ranking.
- The highest ranked CF = preferred center (CP)

CF ranking for English

Subject > object(s) > other

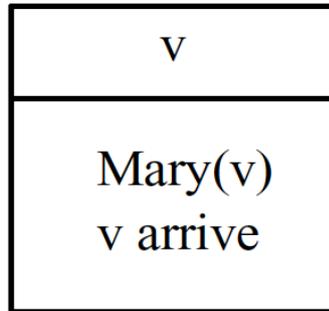
(Grosz et al. 1995)

CF ranking for Japanese

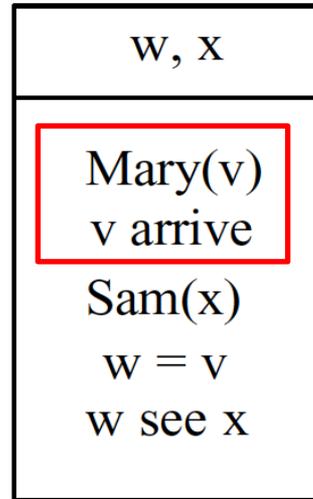
(Overt) topic > empathy > subject > object2 (recipient of ditransitive) > object > others

(Modified based on Walker, Iida & Cote 1994)

CP
Mary arrived.

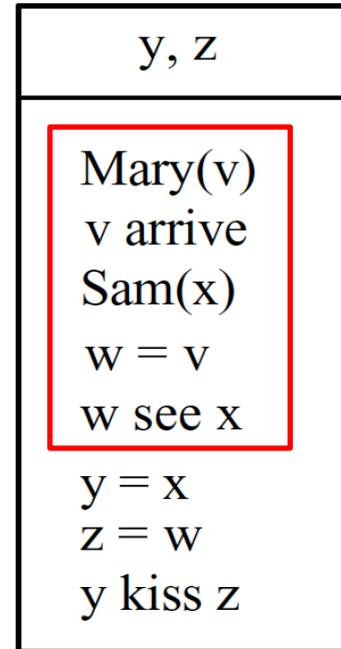


CB&CP
She saw Sam.



CB(U_i)=CP(U_i)

CP CB
He kissed her.

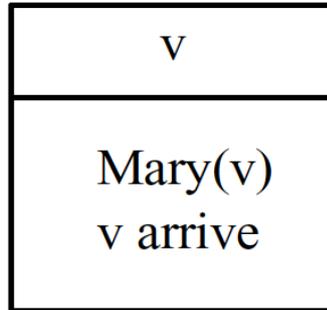


CB(U_i)=CB(U_{i-1})

CB(U_i)≠CP(U_i)

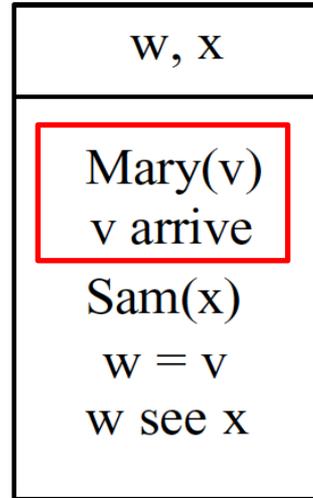
CP

Mary arrived.



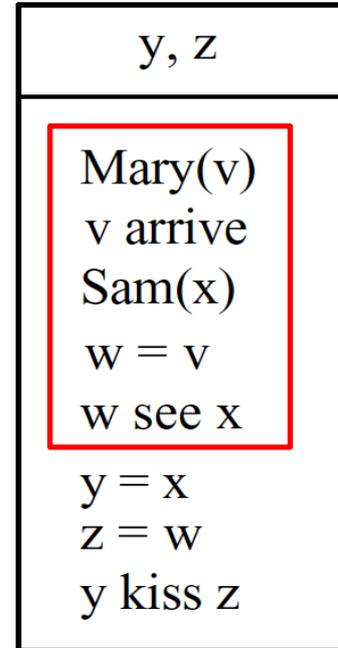
CB&CP

She saw Sam.

CB(U_i)=CP(U_i)

CB&CP

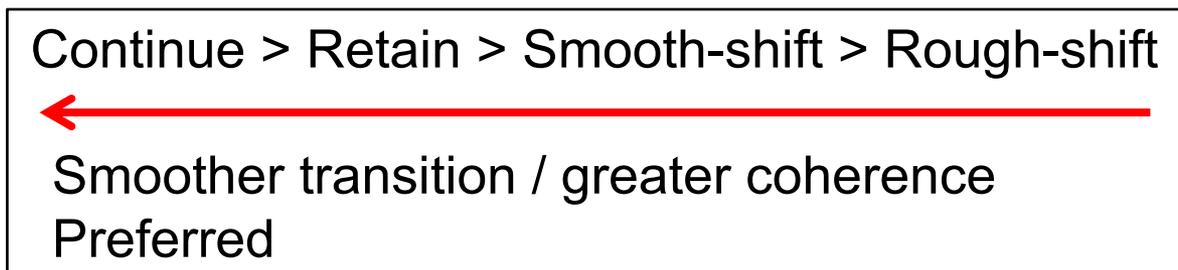
She was kissed by him.

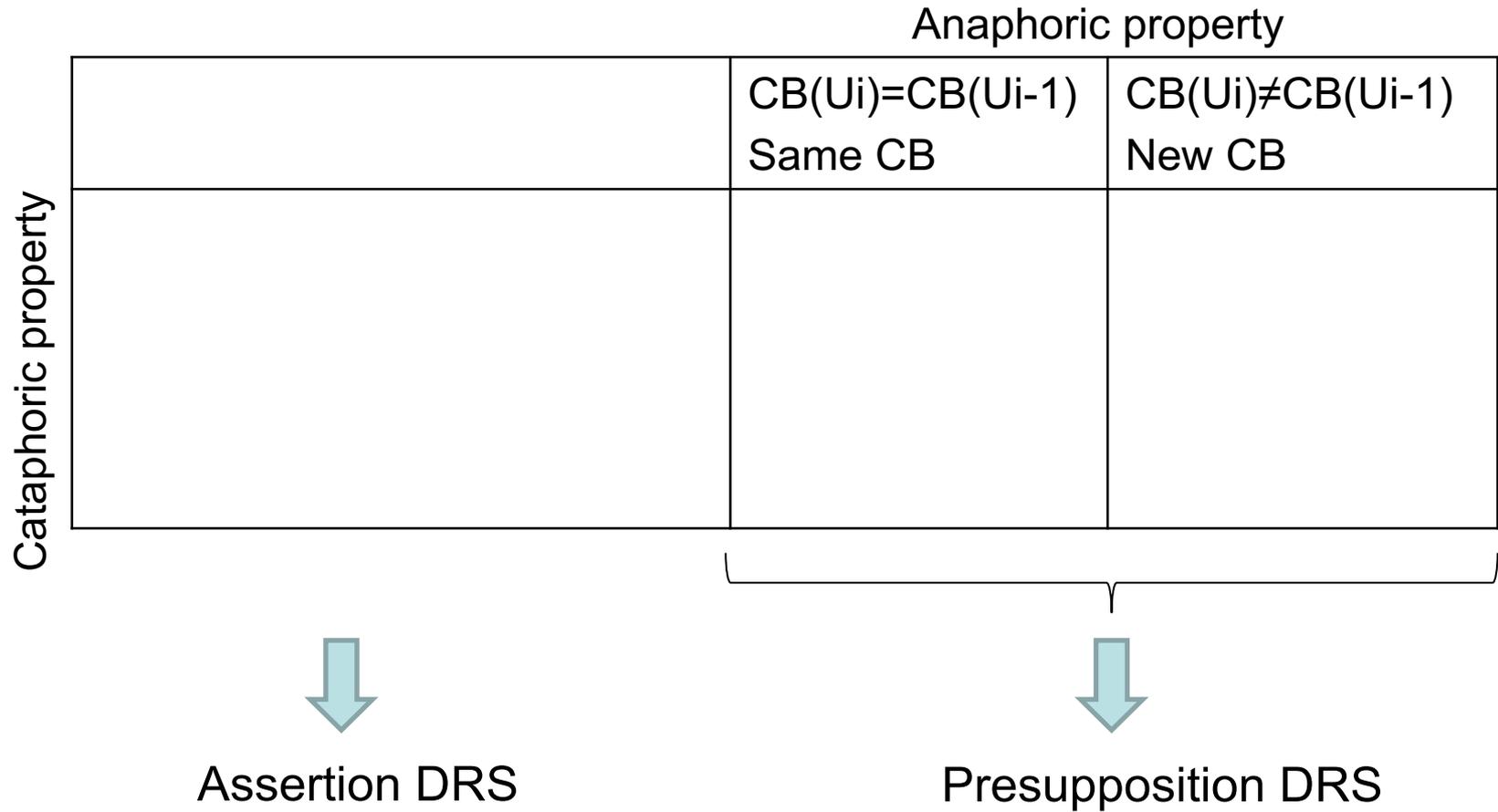
CB(U_i)=CB(U_{i-1})CB(U_i)=CP(U_i)

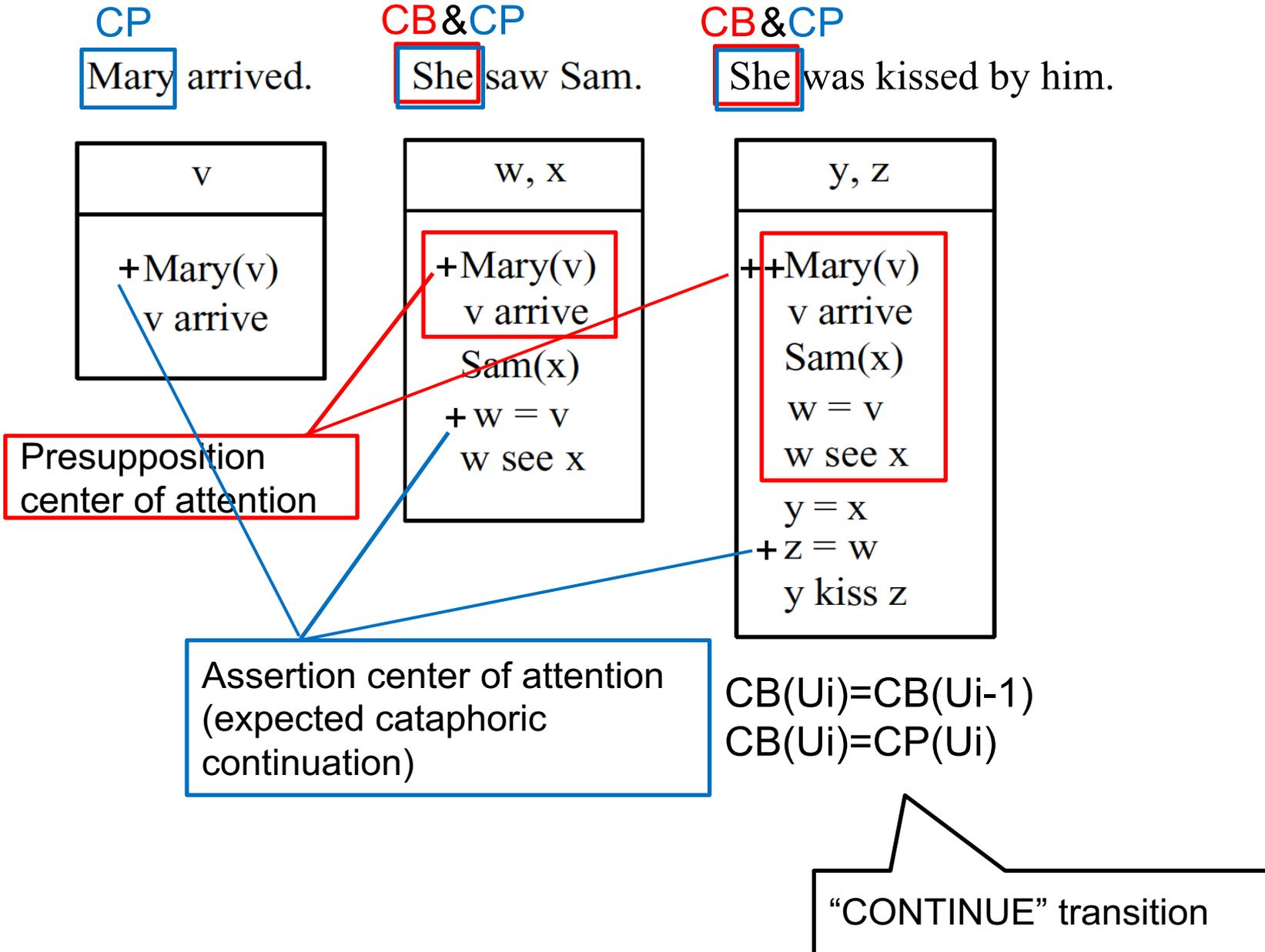
- Five transition types in Centering Theory

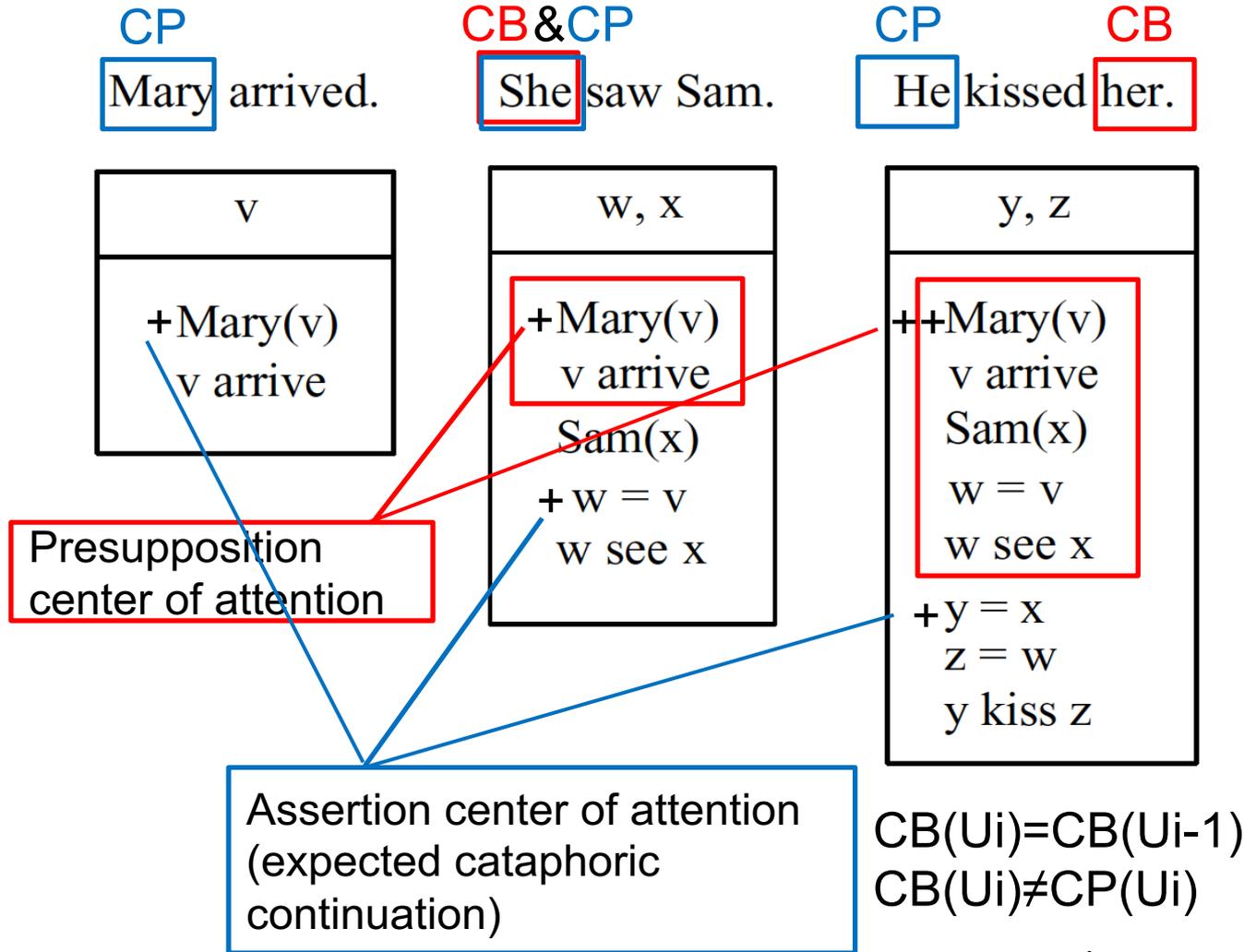
		Anaphoric property	
		$CB(U_i)=CB(U_{i-1})$	$CB(U_i)\neq CB(U_{i-1})$
Cataphoric property	$CB(U_i)=CP(U_i)$ Same center likely to continue.	CONTINUE	SMOOTH-SHIFT
	$CB(U_i)\neq CP(U_i)$ Same center not likely to continue.	RETAIN	ROUGH-SHIFT
	If no coreference with U_{i-1}	NULL	

- Transition ordering rule (Grosz et al. 1995: 215)

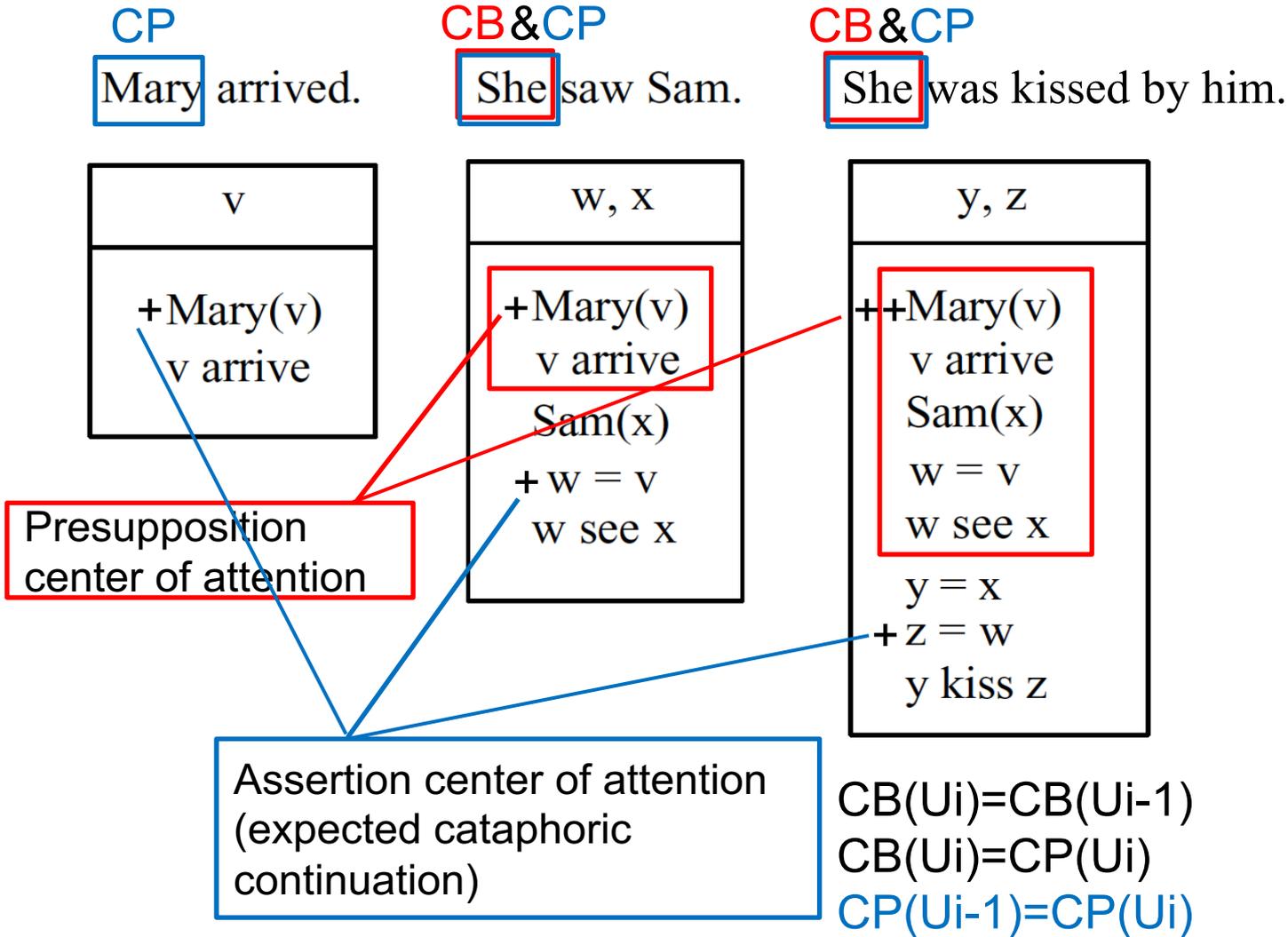


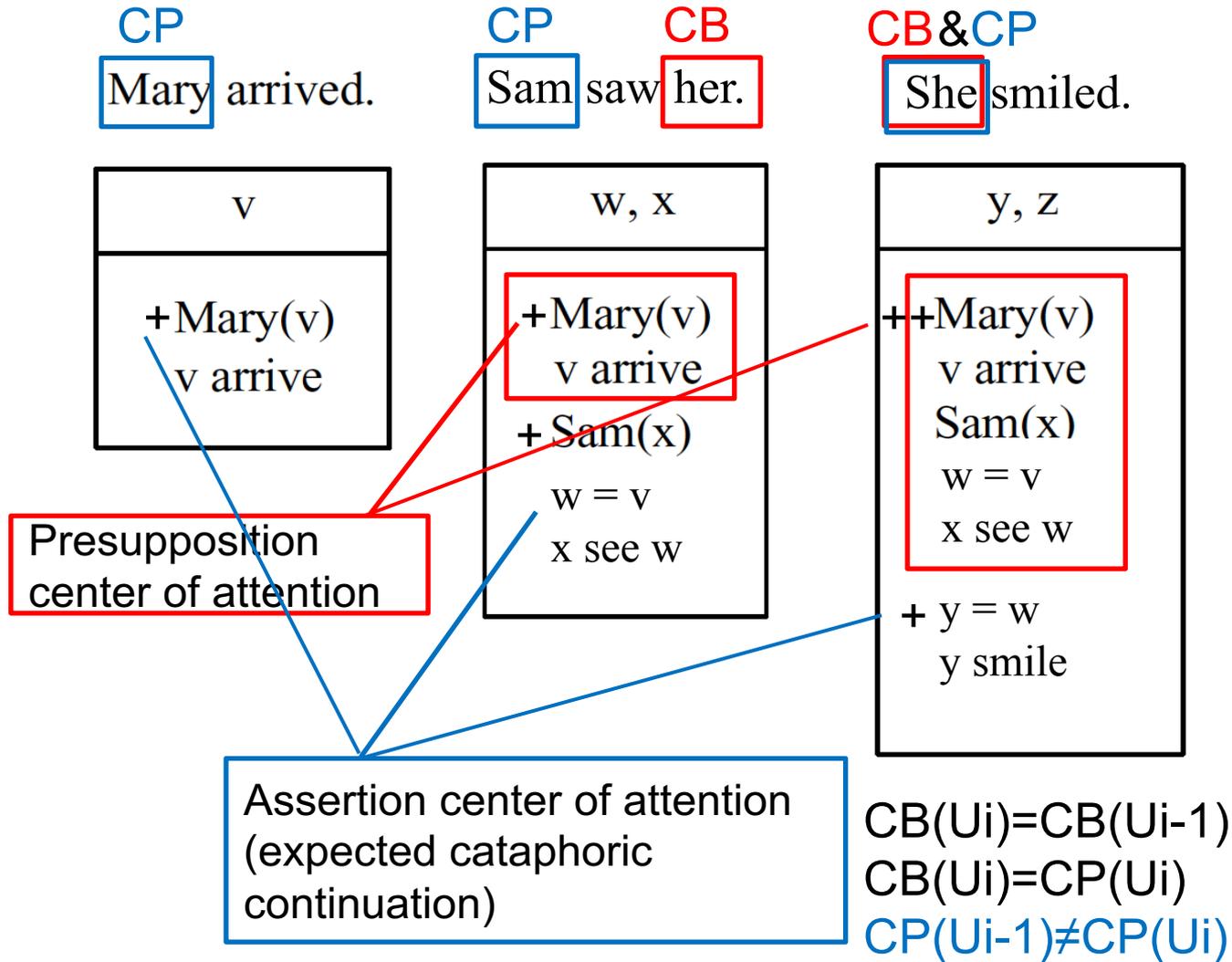






“RETAIN” transition





Bi-directional interactions with discourse-pragmatics

Presupposition center of attention

- Centrally talked-about entities in the preceding discourse.
- Influenced by the preceding utterances (input from syntax/semantics).

Assertion center of attention

- Intended by the speaker as a centrally talked-about entity in the following discourse, hence, influence the current utterance (input from discourse).
- Expected by the hearer to be a centrally-talked about entity in the following discourse, i.e. input from syntax/semantics.

Preference for $CB(U_i)=CP(U_i)$ in L1 and L2 Japanese written narratives

Total number of clauses by transition type

	CONINUE	RETAIN	SMOOTH-SHIFT	ROUGH-SHIFT	Total
L1	787	417	283	168	1655
L2	455	247	190	128	1020



Consistent with the coherence ranking (per Grosz et al. 1995):
 $CON > RET > S-SHIFT > R-SHIFT$

CON
S-SHIFT

>

RET
R-SHIFT

>

 $CB(U_i)=CP(U_i)$ $CB(U_i) \neq CP(U_i)$

I.e., presupposition center of attention tends to continue as assertion center of attention (i.e. PSA).

Argument forms of presupposition center of attention (CB) in Japanese written narratives

	L1	L2
Zero anaphora	895 (.54)	507 (.50)
Topic NP- <i>wa</i>	494 (.30)	349 (.34)
Other	266 (.16)	165 (.16)
Total	1655 (1.00)	1020 (1.00)

The two most commonly used forms to represent presupposition center of attention.

a. *Ga* (nominative)

hanako ga uti de taroo to eega o mita
 Hanako NOM home at Taro with movie ACC saw

b. *Wa* (“topic”)

hanako wa uti de taroo to eega o mita¹
 TOP

c. Zero anaphor

(S) uti de taroo to eega o mita

Argument forms by presupposition center of attention (CB) and assertion center of attention (CP) in Japanese written narratives

L1	CB(U _i)=CP(U _i)	CB(U _i)≠CP(U _i)
Zero anaphora	707 (.67)	189 (.57)
Topic NP- <i>wa</i>	348 (.33)	145 (.43)
Total	1055 (1.00)	334 (1.00)

Fisher's exact test:
 $p < .001$

L2	CB(U _i)=CP(U _i)	CB(U _i)≠CP(U _i)
Zero anaphora	389 (.63)	118 (.49)
Topic NP- <i>wa</i>	224 (.37)	125 (.51)
Total	613 (1.00)	243 (1.00)

Fisher's exact test:
 $p < .0001$

Zero anaphora is used more frequently when the argument represents both presupposition and assertion center of attention.

Argument forms by current and preceding assertion center of attention (CP) in Japanese written narratives

L1	CP(U _{i-1})=CP(U _i)	CP(U _{i-1})≠CP(U _i)
Zero anaphora	658 (.75)	42 (.25)
Topic NP- <i>wa</i>	218 (.25)	129 (.75)
Total	876 (1.00)	171 (1.00)

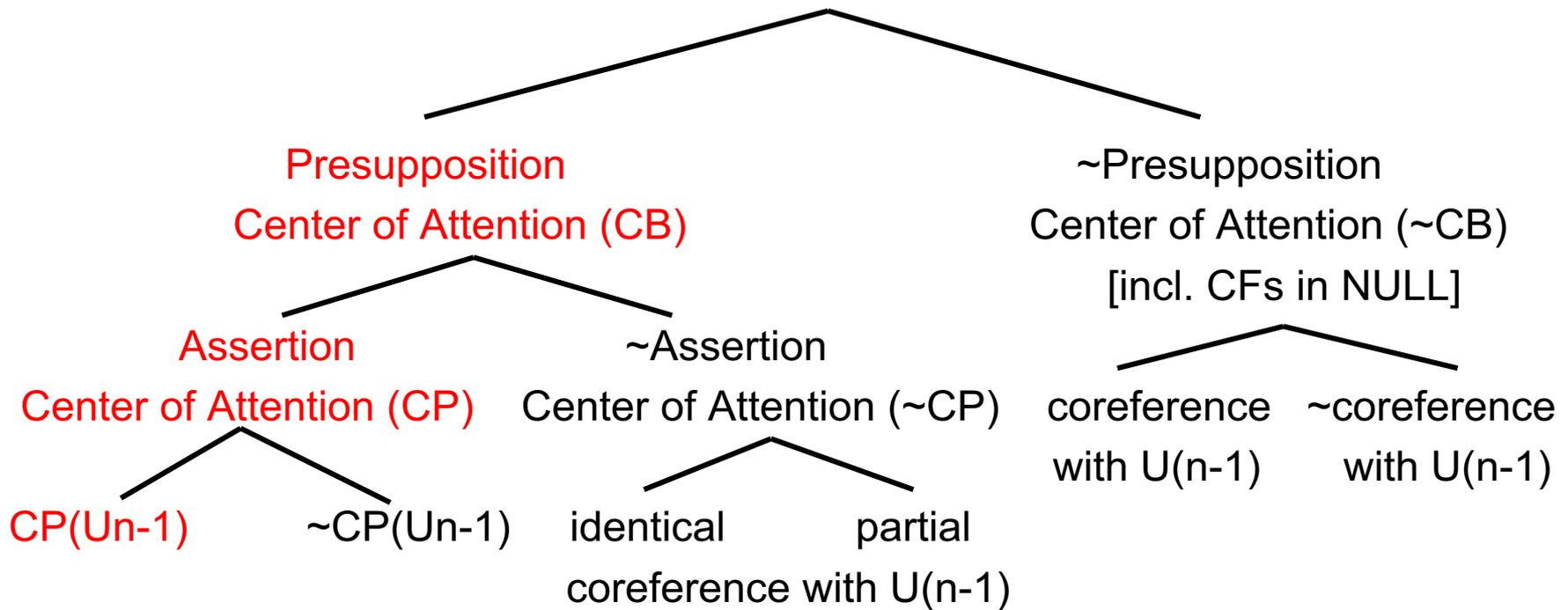
Fisher's exact test:
p < .0001

L2	CP(U _{i-1})=CP(U _i)	CP(U _{i-1})≠CP(U _i)
Zero anaphora	371 (.72)	18 (.18)
Topic NP- <i>wa</i>	141 (.28)	83 (.82)
Total	512 (1.00)	101 (1.00)

Fisher's exact test:
p < .0001

Zero anaphora is preferred when the current CP(U_i) and the preceding CP(U_{i-1}) are coreferential.

Saliency hierarchy



Zero anaphora preferred*	Zero anaphora optional if the referent is recoverable.*
--------------------------	---

Maximally salient →

*Applies to non-focus arguments only.

Zero particle and (non-pause type) postposing

(2) Five encoding types for the subject of “Hanako saw a movie with Taro at home.”

a. *Ga* (nominative)

hanako ga uti de taroo to eega o mita
 Hanako NOM home at Taro with movie ACC saw

b. *Wa* (“topic”)

hanako wa uti de taroo to eega o mita¹
 TOP

c. Zero anaphor

(S) uti de taroo to eega o mita

d. Zero particle

hanako-Ø uti de taroo to eega o mita

e. Post-predicative

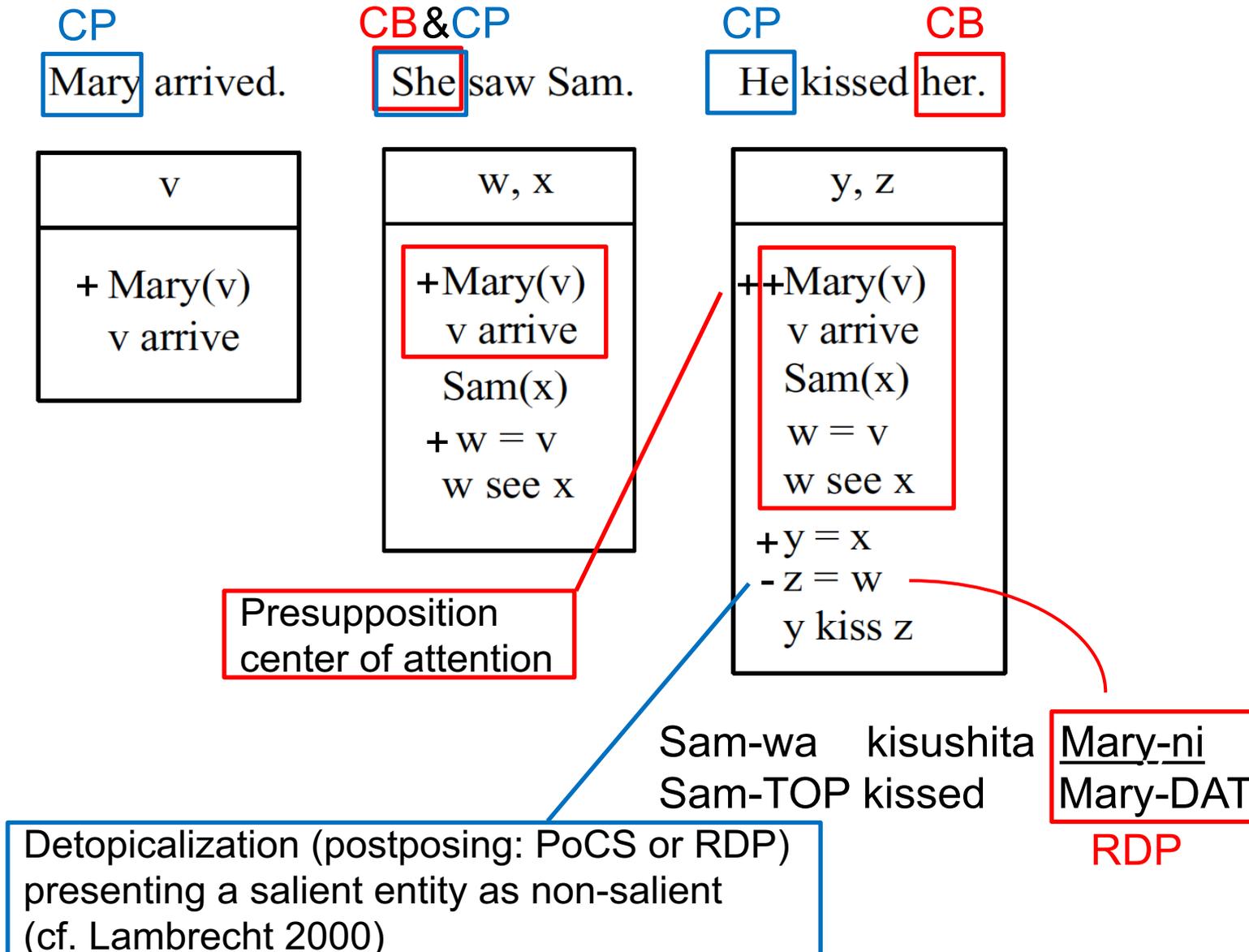
uti de taroo to eega o mita **hanako ga/wa/-Ø**

PoCS or RDP

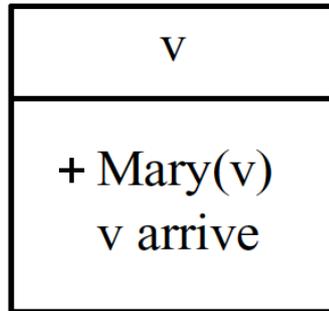
Some argument types represent non-persistent information: absence of post-nominal marking and postposing in Japanese (Shimojo 2005).

Table 5.6 The subject encoding types in terms of RP (referential persistence)

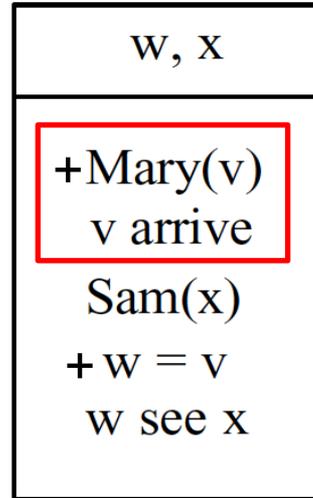
RP	Wa		Zero <i>anaphor</i>		Ga		Zero <i>particle</i>		Post- <i>predicative</i>	
	No.	%	No.	%	No.	%	No.	%	No.	%
0	60	30	424	39	121	35	201	47	33	59
1	33	16	180	17	86	25	116	27	14	25
2	23	11	135	12	42	12	47	11	6	11
3	28	14	104	10	31	9	29	7	0	
4	20	10	69	6	19	5	12	3	1	2
5	7	3	42	4	8	2	9	2	0	
6	9	4	32	3	13	4	8	2	1	2
7	7	3	23	2	7	2	3	1	0	
8	4	2	19	2	7	2	1	0.2	1	2
9	1	0.5	16	1	3	1	0		0	
10	11	5	45	4	9	3	1	0.2	0	
Total	203	100	1089	100	346	100	427	100	56	100
Mean RP	2.6		2.2		2.0		1.1		0.8	



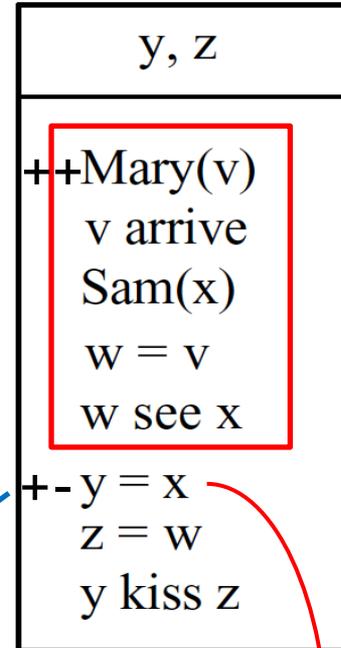
CP
Mary arrived.



CB&CP
She saw Sam.



CP CB
He kissed her.



Assertion center of attention (PSA)
Detopicalization (zero marking)

Sam- \emptyset Mary-ni kisushita
Sam- \emptyset Mary-DAT kissed
zero marking

The linking algorithm: semantics → syntax

1. Construct the semantic representation of the sentence, based on the logical structure of the predicator.

If discourse coherence is intended, use a predicator to provide predication for the presupposition center of attention.

If the entity to be predicated represents presupposition and are not to represent the actual focus, add (**topic'** (x, [...])) for the entity. (Marked construction) if the entity is to be given as a focus despite the actual non-focus, do not use the topic construction.

2. Determine the actor and undergoer assignments, following the actor-undergoer hierarchy.

For the marked assignment, see Shimojo (2011).

The linking algorithm: semantics → syntax (cont.)

3. Determine the morphosyntactic coding of the arguments.
 - a. Select the privileged syntactic argument (=assertion center of attention in the DRS), based on the privileged syntactic argument selection hierarchy and principles.
 - b. Assign the arguments the appropriate case markers and/or postpositions.
 1. Determine the argument form (zero or overt) for non-focus, following the saliency hierarchy. Use an overt form if a non-focus argument is to be given as a focus or if the argument is to be detopicalized.
 2. Assign *wa* for an overt topic and appropriate case markers for all remaining arguments, based on the case assignment rules for accusative constructions. Assign no marking (if structurally allowed) if the argument requires absolute (i.e. non-contrastive) specification or corresponds with detopicalized entity in the DRS.
 3. If an argument in actual focus needs to be defocused, assign *wa*.

The linking algorithm: semantics \rightarrow syntax (cont.)

4. Select the syntactic template(s) for the sentence, following the syntactic template selection principle (and language-specific qualifications).
 - a. If an argument has no syntactic instantiation, use the syntactic template without the corresponding RP node.
 - b. Use the LDP for a *wa*-marked element, but place it in a RP if it is in the actual focus domain. Use the PrCS for a *ga* or *wa*-marked narrow-focus argument.
 - c. (Optional) if the referent of an argument corresponds with detopicalized entity in the DRS, use a PoCS if it is in the actual focus domain or a RDP if it is outside the focus domain.
5. Assign arguments to positions in the syntactic representation of the sentence. If there is no syntactic position to assign the argument(s) to, link them directly with the corresponding referents in the presupposition discourse representation structure.

The linking algorithm: syntax → semantics

1. Determine the macrorole(s) and other core argument(s) in the clause (assignment of the PSA).
2. Retrieve from the lexicon the logical structure of the predicate in the nucleus of the clause (if the clause structure contains no predicate, retrieve the predicate from the presupposition DRS) and with respect to it determine the actor and undergoer assignments...
If there is a topic in the LDP or RDP, link (**topic'** (x, [...])) to the matrix logical structure.
3. Link the arguments determined in step 2 with the arguments determined in step 3 until all core arguments are linked.
If there is an unlinked argument position(s) in the semantic representation, retrieve the corresponding referent(s) directly from the presupposition discourse representation structures.
.....
6. Determine in the assertion DRS the assertion center of attention (+) in terms of the ranking "overt topic > empathy > nominative" and a detopicalized element (-) corresponding with an argument which is in the postcore slot or right-detached position, or zero-marked.

- With the observations in discourse, I have proposed a mechanism to represent the center of attention in DRS's, in addition to the existing presupposition and assertion-based representation.
- The new representation consists of two types of continuity: anaphorically determined presupposition center of attention, and assertion center of attention, which projects forward-looking continuity.
- This new representation is necessary because continuity of information, which interacts with the other aspects of grammar, does not necessarily correlate with presupposition and assertion-based focus structures.

- Grosz, Barbara, Aravind K. Joshi, and Scott Weinstein. 1995. Centering: a framework for modeling the local coherence of discourse. *Computational Linguistics* 21(2), 203-225.
- Jackendoff, Ray. 2002. *The Architecture of the Language Faculty*. Cambridge, MA: MIT Press.
- Lambrech, Knud. 2000. When subjects behave like objects: an analysis of the merging of S and O in sentence-focus constructions across languages. *Studies in Language* 24.3. 611-682.
- Prince, Ellen. 1981. Toward a taxonomy of given-new information. In P. Cole (ed.), *Radical Pragmatics*. New York: Academic Press. 223-255.
- Prince, Ellen F. 1992. The ZPG letter: Subjects, definiteness, and information status. In W. Mann and S. Thompson (eds.), *Discourse description: Diverse linguistic analyses of a fund-raising text*, 295-325. Amsterdam: Benjamins.
- Shimojo, Mitsuaki. 2005. *Argument Encoding in Japanese Conversation*. Hampshire and New York: Palgrave Macmillan.
- Shimojo, Mitsuaki. 2011. The Left Periphery and Focus Structure in Japanese. In *New Perspectives in Role and Reference Grammar*, Wataru Nakamura (ed.), Newcastle: Cambridge Scholars Publishing, 266-293.
- Van Valin, Robert D. Jr. 2005. *Exploring the syntax-semantics interface*. Cambridge University Press.
- Van Valin, Robert D. Jr. 2014. On the place of information structure in a grammar. *Comunicación, Cognición, Cibernétic@*. *Actas del XXXI Congreso de AESLA*, 86-106.
- Walker, Marilyn A., Masayo Iida, and Sharon Cote. 1994. Japanese discourse and the process of centering. *Computational Linguistics* 20(2), 193-231.