Semantics-Oriented Resultatives: Evidence from Valency Alternation Verbs

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Today's Menu

1. Introduction
2. The resultative construction
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1. Introduction

1. Introduction

➢ The talk is about the interpretation of Resultative Construction.

➢ It is argued that the predication relation of resultative predicates is determined based upon the lexical semantics of verbs, rather than syntactic or argument structures.

➢ Supporting data are drawn from valency alternation verbs in Japanese and Mandarin Chinese.

2. The resultative construction

2. The resultative construction

Resultative constructions refer to clauses in which, in addition to the main verb (V), there is an additional, secondary predicate known as the result XP, predicating some state that comes about for some participant in the event as a result of the action described by the clause.(Beavers 2016)

English: John smeared the wall red.

Japanese: John-ga   kabe-o   akaku   nut-ta

                John-NOM wall-ACC   red   smear-PAST

                'John smeared the wall red'

Mandarin: Ta   yong-jiaodai   mimi   chan-le   da-daizi

                he   with-sellotape   thick   wrap-PERF   big-bag

                '(lit.) He wrapped the big bag thick with sellotape '

Resultative verb compounds in Mandarin

A resultative verb compound in Mandarin is, very roughly, a compound verb made up of two parts, the first indicating an action and the second the result of that action.

(1)   La-kai

        'pull-open'   (V_{action} + V_{result})

(2)   Ta la-kai le men

        'He pull-open ASPECT door' = 'He pulled the door open'

                                                    (Thompson 1973)

(3)   John   tu-hong-le   qiangmian

        John   smear- (become) red-PERF   wall

        'John smeared the wall red'

Direct Object Restriction
(Simpson 1983; Levin & Rappaport Hovav 1995: 34)

Resultative phrase may be predicated of the immediately postverbal NP, but may not be predicated of a subject or of an oblique complement.

English: John smeared the **wall** <u>red</u>.

Japanese :   John-ga   **kabe**-o   <u>akaku</u>   nut-ta

John-NOM   wall-ACC   red   smear-PAST

'John smeared the wall red'

Mandarin: John   tu-<u>hong</u>-le   **qiangmian**

John   smear-red-PERF   wall

'John smeared the wall red'

3. Valency alternation verbs in Japanese

3.1 "Goal-oriented resultatives"

Resultatives that do not obey the DOR:

"*ni*-marked NP resultative" (Nitta 2002); "goal-oriented resultative" (Miyakoshi 2006)

(4) Kyou-wa **kabe**-ni <u>siroku</u> penki-o   nutta. (Miyakoshi 2006: 9; simplified)
      today-TOP wall-to   white paint-ACC sprayed
      '(lit.) Today, (I) sprayed paint on the wall white.'

Claim: the oblique argument expresses the location that undergoes a change of state as a result of spraying, and thus a resultative phrase can describe the oblique argument as exception.

3.2 location-oriented resultatives in the locative alternation

The verb *nutta* 'spray, smear' is a locative alternation verb:

(5) location-oriented resultative

a. Kyou-wa **kabe**-ni <u>siroku</u> penki-o   nutta. (Miyakoshi 2006: 9; simplified) (=4)
    today-TOP wall-to white   paint-ACC sprayed
    '(lit.) Today, (I) sprayed paint on the wall white.'

b. Kyou-wa **kabe**-o penki-de   <u>siroku</u> nutta.
    today-TOP wall-ACC paint-with white   sprayed
    'Today, (I) sprayed the wall white with paint.'

The resultative *siroku* 'white' describes the resultant state of 'the wall,' regardless of whether the location is expressed as oblique in (5a) or as direct object in (5b).

3.2 location-oriented resultatives in the locative alternation

The verb *nutta* 'spray, smear' is a locative alternation verb:

(5)   location-oriented resultative

a.   Kyou-wa   **kabe**-ni siroku   penki-o   nutta. (Miyakoshi 2006: 9; simplified)
     today-TOP wall-to   white   paint-ACC sprayed
     '(lit.) Today, (I) sprayed paint on the wall white.'

b.   Kyou-wa   **kabe**-o penki-de   siroku   nutta.
     today-TOP wall-ACC paint-with   white   sprayed
     'Today, (I) sprayed paint on the ceiling and wall white.'

(6)   cf. location-oriented resultative in English

a.   *John loaded the hay into **the wagon** full. (Williams 1980:204)
b.   John loaded **the wagon** full with hay.

3.3 locatum-oriented resultatives in the locative alternation

The oblique NPs which resultative phrases are predicated of are not limited to the *ni*-marked locative NPs.

(7)   locatum-oriented resultative (from BCCWJ-NT corpus)

a.   me-no-ue-o   **houtai**-de   <u>atuku</u>   mai-ta. [Nijo 2000; simplified]
     eye-GEN-top-ACC bandage-with thick   bound
     '(lit.) (Someone) bound the top of eyes with bandage thick.'

b.   me-no-ue-ni   **houtai**-o   <u>atuku</u>   maita.
     eye-GEN-top-LOC bandage-ACC thick   bound

4. Valency alternation verbs in Mandarin Chinese

4.1 Locative alternation verbs

The verb *tu* 'smear' is a locative alternation verb:

(8) a.   John   zai-qiangmian-shang tu-le   youqi   (locatum-as-object variant)

John   LOC-wall-LOC   smear-PERF   paint

'John smeared the paint on the wall'

  b.   John   yong-youqi   tu-le   qiangmian   (location-as-object variant)

John   with-paint   smear-PERF   wall

'John smeared the wall with paint'

Cao (2018)

4.1 Locative alternation verbs

The verb *pu* 'spread' is a locative alternation verb:

(9) a.   John   zai-zhuozi-shang   pu-le   baozhi   (locatum-as-object variant)

   John   LOC-wall-LOC   spread-PERF   newspaper

   'John spread the newspaper on the table'

   b.   John   yong-baozhi   pu-le   zhuozi   (location-as-object variant)

   John   with-newspaper   spread-PERF   table

   'John spread the table with newspaper'

Cao (2018)

4.2 Locative alternation with resultative verb compounds

Locatum-oriented resultatives in the locative alternation

Locative alternation verb *tu* 'smear' can be a resultative verb compound by combining a resultative verbal suffix *yun* 'even', shown as *tu-yun* , which still can go through the locative alternation.

(10) a. John   zai-qiangmian-shang   tu-yun-le   **youqi**

       John   LOC-wall-LOC   smear-even-PERF   paint

      '(lit.) John smeared the paint even on the wall'

  b. John   yong-**youqi**   tu-yun-le   qiangmian

      John   with-paint   smear-even-PERF   wall

      '(lit.) John smeared the wall with paint even'

➢ The resultative *yun* 'even' describes the resultant state of *youqi* 'paint', regardless of whether the locatum is expressed as a direct object in (a) or as oblique in (b).

4.2 Locative alternation with resultative verb compounds

Location-oriented resultatives in the locative alternation

Locative alternation verb *pu* 'spread' can be a resultative verb compound by combining a resultative verbal suffix *man* 'full', shown as *pu-man*, which still can go through the locative alternation.

(11) a. John   zai-**zhuozi**-shang   pu-<u>man</u>-le   baozhi

       John   LOC-table-LOC   spread-full-PERF   newspaper

       '(lit.) John spread the newspaper on the table full'

    b. John   yong-baozhi   pu-<u>man</u>-le   **zhuozi**

       John   with-newspaper   spread-full-PERF   table

       '(lit.) John spread the table full with newspaper'

➢ The resultative *man* 'full' describes the resultant state of *zhuozi* 'table', regardless of whether the location is expressed as oblique in (a) or as a direct object in (b).

4.3 Locative alternation with resultative phrase

Locatum-oriented resultatives in the locative alternation

The verb *chan* 'wrap' is a locative alternation verb:

(12) a. yong-**jiaodai**   mimi   chan-le   yibian   dadaizi [Wobubai 2017; simplified]

       with- sellotape   thick   wrap-PERF   around   big bag

       '(lit.) (someone) wrapped the sellotape around the big bag thick'

  b. zai-dadaizi-shang   mimi   chan-le   yibian   **jiaodai**

       LOC-big bag-LOC   thick   wrap-PERF   around   sellotape

➤ The resultative phrase *mimi* 'thick' describes the resultant state of *jiaodai* 'sellotape', regardless of whether the locatum is expressed as oblique in (a) or as a direct object in (b).

4.3 Locative alternation with resultative phrase

Locatum-oriented resultatives in the locative alternation

The verb *gai-zhu* 'cover' is a locative alternation verb:

(13) a. chuanghu   yong-**baozhi**   houhoude   gaizhu-le [Sino news 2019; simplified]

window-TOP with-newspaper   thick   cover-PERF

'(lit.) (someone) covered the window with newspaper thick'

b. zai-chuanghu-shang   houhoude   gaizhu-le   **baozhi**

LOC-window -LOC   thick   cover-PERF   newspaper

➢ The resultative phrase *houhoude* 'thick' describes the resultant state of *baozhi* 'newspaper', regardless of whether the locatum is expressed as oblique in (a) or as a direct object in (b).

5. Analysis

5.1 Locative alternation

What makes the locative alternation possible to start with?

(14) a. John loaded hay into the wagon.
     b. John loaded the wagon with hay.

➤ Locative alternation verbs describe events of "covering surfaces and putting things into containers." (Levin 1993: 118)

➤ All verbs involve two internal arguments:
   (i) a locatum argument, *hay*, that refers to what undergoes motion, and
   (ii) a location argument, *the wagon*, that refers to the goal of motion.

➤ The simultaneous changes of state and position of the two arguments make it possible to perceive the same event in two alternative ways through "gestalt shift" (Pinker 1989).

5.2 Interpretation of resultative phrases in the locative alternation

What determines the predication relation of resultative phrases in Japanese and Chinese in the locative alternation?

➢ The previous examples in Japanese and Chinese all show that resultative phrases can be predicated of either location or locatum argument regardless of which argument is expressed as direct object.

➢ There is no syntactic clue as to which argument a resultative phrase is predicated of, and a resultative phrase is interpreted on the semantic basis.

5.3 Representing locative alternation verbs

nutta 'sprayed' in *kabe-ni penki-o nutta* 'sprayed paint on a wall' in (4):

$$
\begin{bmatrix}
\text{ARG-ST} < \text{NP}_i, \text{NP}_j, \text{NP}_k > \\[2ex]
\text{SEM} \begin{bmatrix}
\text{INDEX } s_1 \\[1ex]
\text{RESTR} < \begin{bmatrix}
\text{RELN } smear \\
\text{SMEARER } i \\
\text{LOCATION } j \\
\text{LOCATUM } k \\
\text{BECOME} < s_2, s_3 > \\
\text{SIT } s_1
\end{bmatrix},
\begin{bmatrix}
\text{RELN } colored \\
\text{INST } j \\
\text{SIT } s_2
\end{bmatrix},
\begin{bmatrix}
\text{RELN } spread \\
\text{INST } k \\
\text{SIT } s_3
\end{bmatrix} >
\end{bmatrix} \\[4ex]
\text{SYN} \begin{bmatrix}
\text{HEAD } verb \\
\text{VAL} \begin{bmatrix}
\text{SPR} < \text{NP}_i \text{ -ga} > \\
\text{COMPS} < \text{NP}_j \text{ -ni}, \text{NP}_k \text{ -o} >
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$
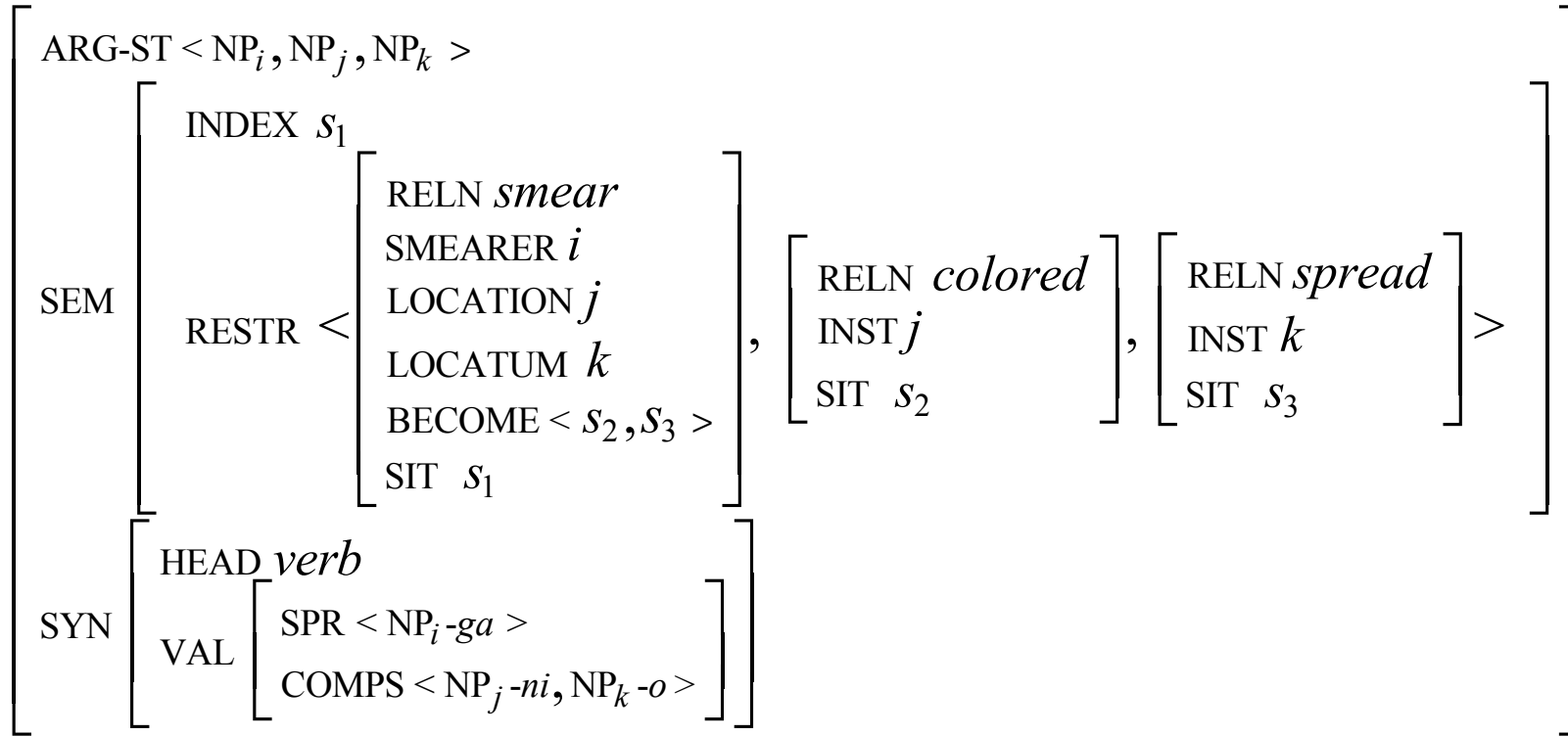
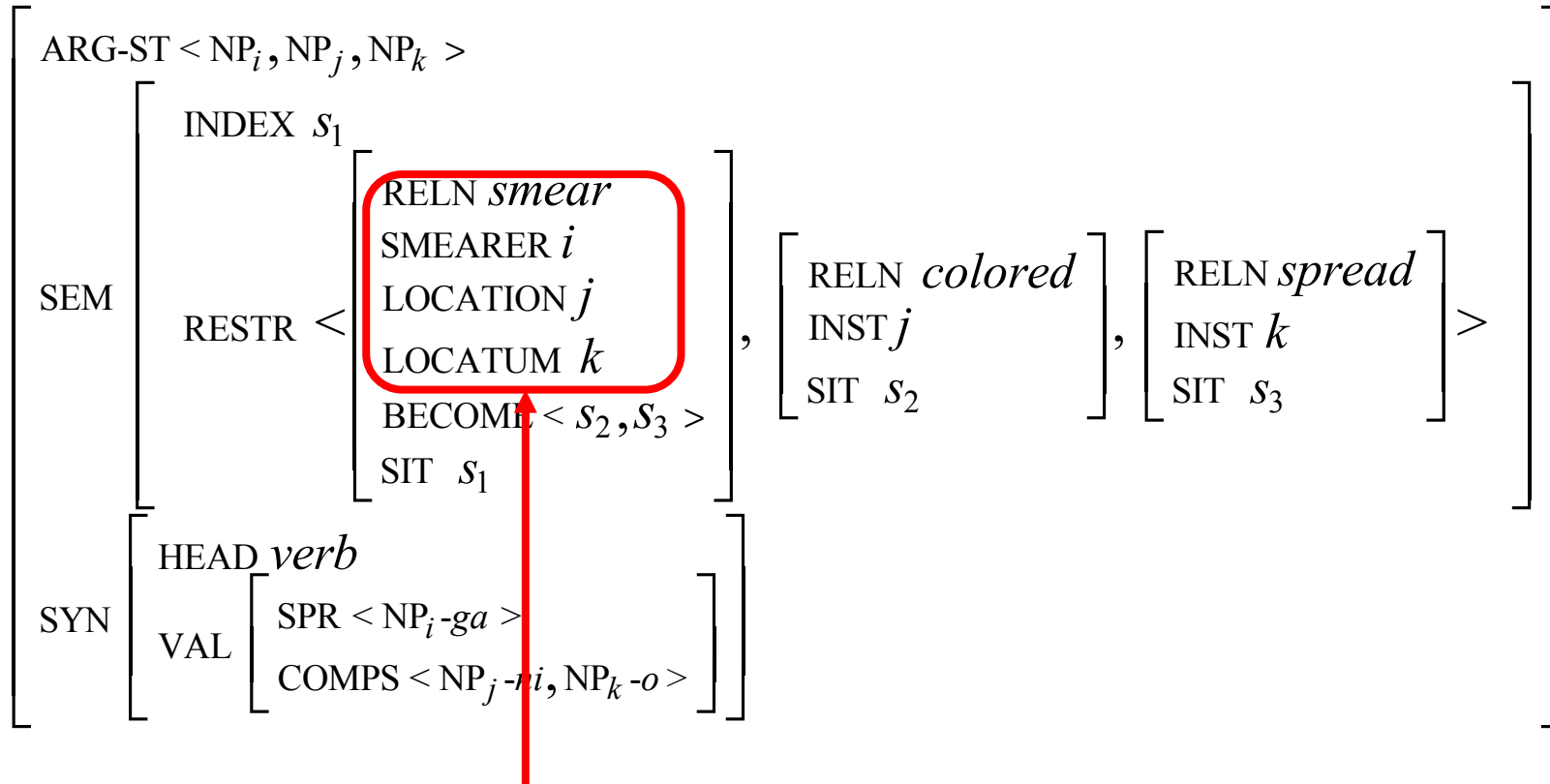Lexical entries for each locative alternation verb share the single underspecified semantic representation which identifies two arguments undergoing a change (cf. Beavers 2005, 2010; Markantonatou and Sadler 1997).

5.3 Representing locative alternation verbs

nutta 'sprayed' in *kabe-ni penki-o nutta* 'sprayed paint on a wall' in (4):

$$
\begin{bmatrix}
\text{ARG-ST} < \text{NP}_i, \text{NP}_j, \text{NP}_k > \\[2ex]
\text{SEM}
\begin{bmatrix}
\text{INDEX } s_1 \\[1ex]
\text{RESTR} <
\begin{bmatrix}
\text{RELN } smear \\
\text{SMEARER } i \\
\text{LOCATION } j \\
\text{LOCATUM } k \\
\text{BECOME} < s_2, s_3 > \\
\text{SIT } s_1
\end{bmatrix},
\begin{bmatrix}
\text{RELN } colored \\
\text{INST } j \\
\text{SIT } s_2
\end{bmatrix},
\begin{bmatrix}
\text{RELN } spread \\
\text{INST } k \\
\text{SIT } s_3
\end{bmatrix} >
\end{bmatrix} \\[2ex]
\text{SYN}
\begin{bmatrix}
\text{HEAD } verb \\
\text{VAL}
\begin{bmatrix}
\text{SPR} < \text{NP}_i \text{ -}ga > \\
\text{COMPS} < \text{NP}_j \text{ -}ni, \text{NP}_k \text{ -}o >
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

The verb's main semantic content is a smearing relation among the individuals indexed as *i* for agent (SMEARER), the LOCATION *j* , and the LOCATUM *k*.
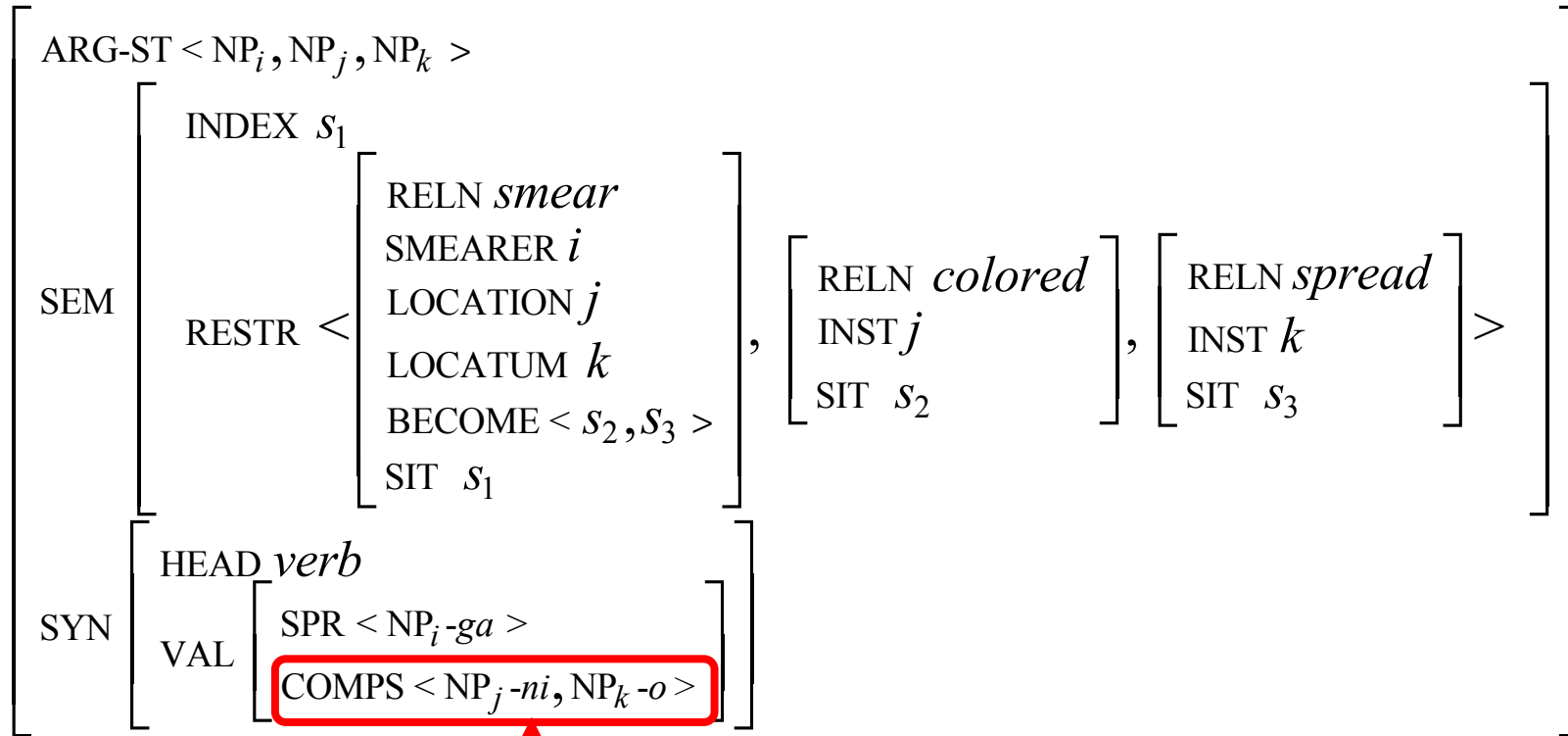
5.3 Representing locative alternation verbs

nutta 'sprayed' in *kabe-ni penki-o nutta* 'sprayed paint on a wall' in (4):

$$
\begin{bmatrix}
\text{ARG-ST} < \text{NP}_i, \text{NP}_j, \text{NP}_k > \\[2mm]
\text{SEM} \begin{bmatrix}
\text{INDEX } s_1 \\
\text{RESTR} < \begin{bmatrix}
\text{RELN } smear \\
\text{SMEARER } i \\
\text{LOCATION } j \\
\text{LOCATUM } k \\
\text{BECOME} < s_2, s_3 > \\
\text{SIT } s_1
\end{bmatrix},
\begin{bmatrix}
\text{RELN } colored \\
\text{INST } j \\
\text{SIT } s_2
\end{bmatrix},
\begin{bmatrix}
\text{RELN } spread \\
\text{INST } k \\
\text{SIT } s_3
\end{bmatrix} >
\end{bmatrix} \\[2mm]
\text{SYN} \begin{bmatrix}
\text{HEAD } verb \\
\text{VAL} \begin{bmatrix}
\text{SPR} < \text{NP}_i\text{-}ga > \\
\text{COMPS} < \text{NP}_j\text{-}ni, \text{NP}_k\text{-}o >
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$
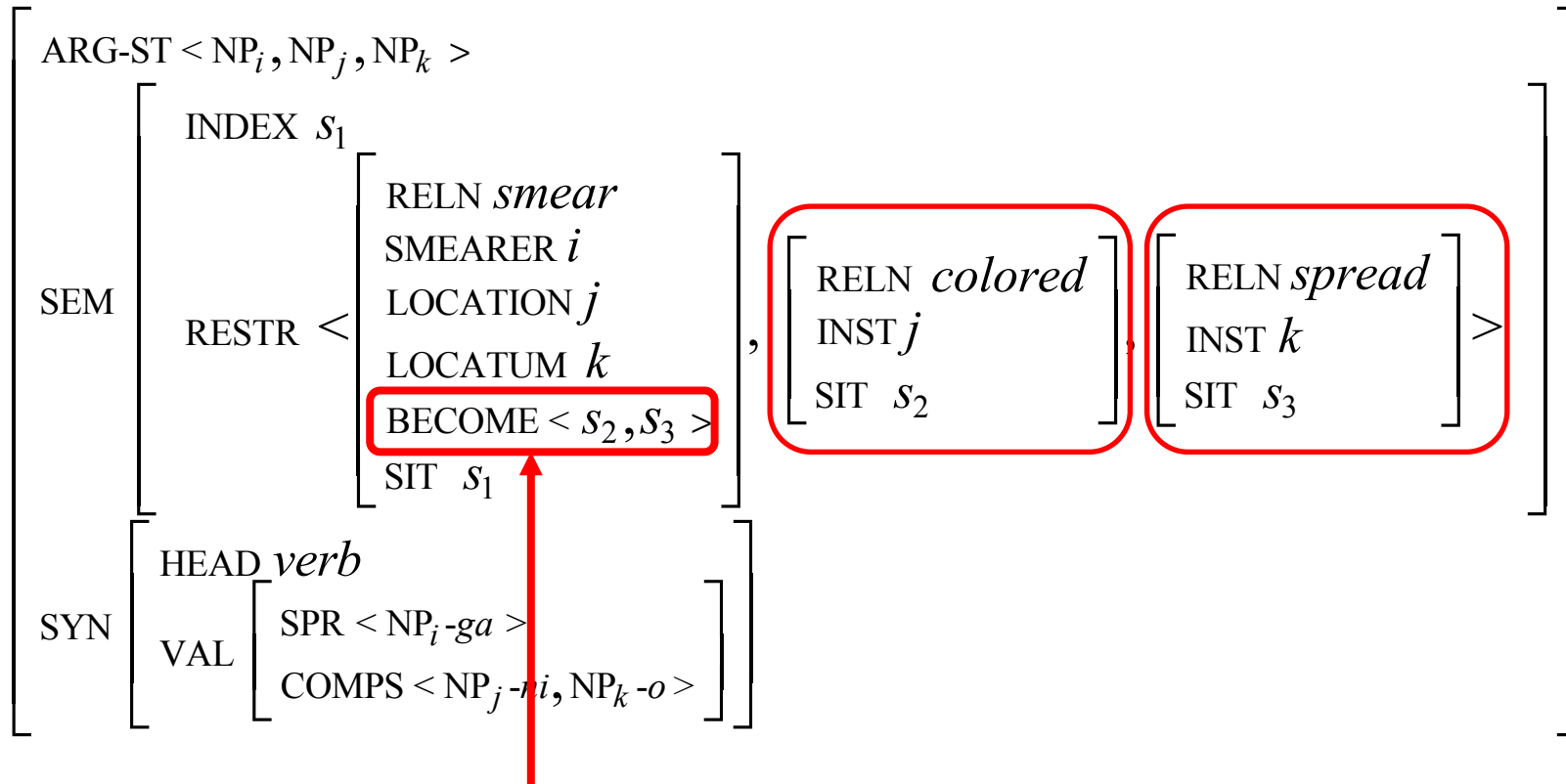
The BECOME feature identifies two arguments undergoing a change through situation indexes s_2 and s_3: one argument is the location j to become colored, and the other is the locatum k to become spread.
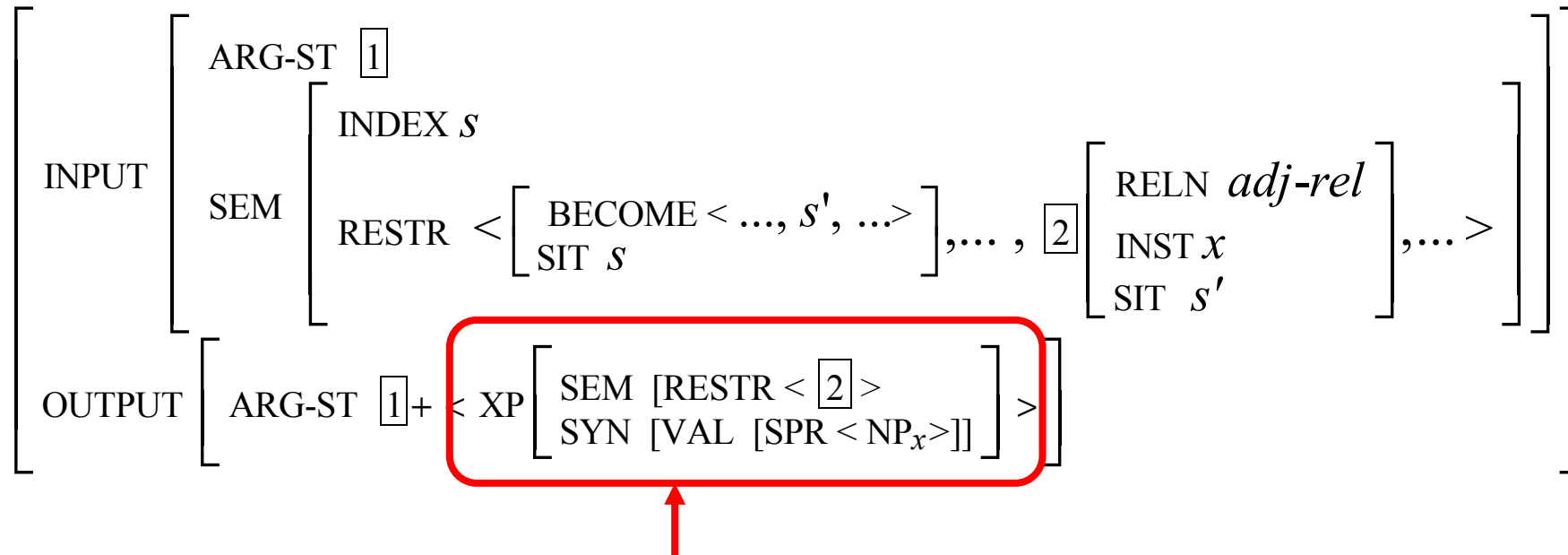
5.3 Representing locative alternation verbs

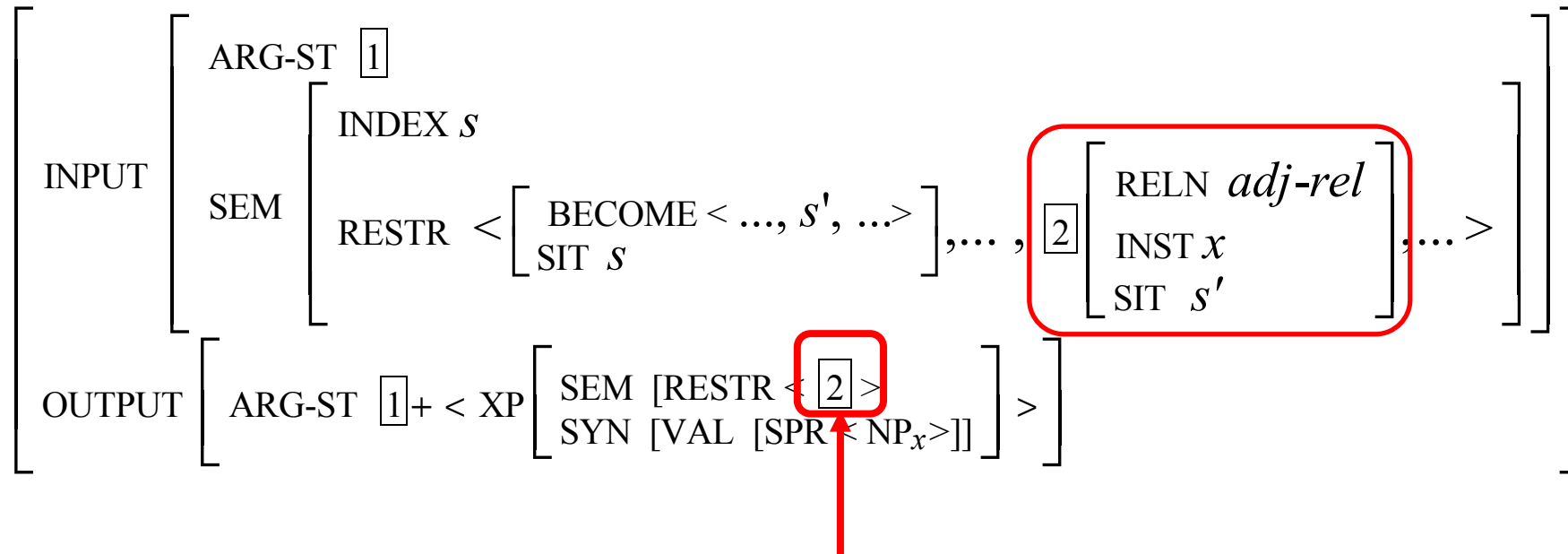*nutta* 'sprayed' in *kabe-ni penki-o nutta* 'sprayed paint on a wall' in (4):

$$
\begin{bmatrix}
\text{ARG-ST} < \text{NP}_i, \text{NP}_j, \text{NP}_k > \\[2ex]
\text{SEM}
\begin{bmatrix}
\text{INDEX } s_1 \\[1ex]
\text{RESTR} <
\begin{bmatrix}
\text{RELN } smear \\
\text{SMEARER } i \\
\text{LOCATION } j \\
\text{LOCATUM } k \\
\text{BECOME} < s_2, s_3 > \\
\text{SIT } s_1
\end{bmatrix},
\begin{bmatrix}
\text{RELN } colored \\
\text{INST } j \\
\text{SIT } s_2
\end{bmatrix},
\begin{bmatrix}
\text{RELN } spread \\
\text{INST } k \\
\text{SIT } s_3
\end{bmatrix} >
\end{bmatrix} \\[4ex]
\text{SYN}
\begin{bmatrix}
\text{HEAD } verb \\
\text{VAL}
\begin{bmatrix}
\text{SPR} < \text{NP}_i \text{-}ga > \\
\boxed{\text{COMPS} < \text{NP}_j \text{-}ni, \text{NP}_k \text{-}o >}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

The value of COMPS specifies that the locatum k is realized as direct object suffixed by the accusative marker -o.

5.4 Resultative lexical rule

$$
\begin{bmatrix}
\text{INPUT} \begin{bmatrix} \text{ARG-ST} & \boxed{1} \\ \\ \text{SEM} \begin{bmatrix} \text{INDEX } s \\ \\ \text{RESTR} \left\langle \begin{bmatrix} \text{BECOME} \langle ..., s', ...\rangle \\ \text{SIT } s \end{bmatrix}, ..., \boxed{2} \begin{bmatrix} \text{RELN } \textit{adj-rel} \\ \text{INST } x \\ \text{SIT } s' \end{bmatrix}, ... \right\rangle \end{bmatrix} \end{bmatrix} \\ \\
\text{OUTPUT} \begin{bmatrix} \text{ARG-ST} & \boxed{1} + \left\langle \text{XP} \begin{bmatrix} \text{SEM } [\text{RESTR} \langle \boxed{2} \rangle] \\ \text{SYN } [\text{VAL } [\text{SPR} \langle \text{NP}_x \rangle]] \end{bmatrix} \right\rangle \end{bmatrix}
\end{bmatrix}
$$

The lexical rule appends a resultative phrase XP to the ARG-ST list of an input locative alternation verb.

5.4 Resultative lexical rule

$$
\begin{bmatrix}
\text{INPUT} & \begin{bmatrix}
\text{ARG-ST} \quad \boxed{1} \\
\text{SEM} \begin{bmatrix}
\text{INDEX } s \\
\text{RESTR } < \begin{bmatrix} \text{BECOME} < ..., s', ...> \\ \text{SIT } s \end{bmatrix}, ..., \boxed{2} \begin{bmatrix} \text{RELN } adj\text{-}rel \\ \text{INST } x \\ \text{SIT } s' \end{bmatrix}, ... >
\end{bmatrix}
\end{bmatrix} \\
\text{OUTPUT} \begin{bmatrix}
\text{ARG-ST} \quad \boxed{1} + < \text{XP} \begin{bmatrix} \text{SEM } [\text{RESTR} < \boxed{2} >] \\ \text{SYN } [\text{VAL } [\text{SPR} < \text{NP}_x>]] \end{bmatrix} >
\end{bmatrix}
\end{bmatrix}
$$

The predication [2] of the resultative phrase further instantiates one of the properties already in the lexical entry of the input verb.

5.5 "Weak" vs. "strong" resultatives

Why does the resultative lexical rule instantiate an existing property, rather than adding a new predication to the verb's RESTR list?

➢ "weak resultatives" (Washio 1997); "Type B resultatives" (Iwata 2006):

   resultative phrases that describe only a predictable result

➢ The resultative construction in Japanese only allows:

   (i) description of arguments that are lexically specified to undergo a change of state, and

   (ii) instantiation of a predictable result of such a change.

➢ Since Chinese allows "strong resultatives," a resultative lexical rule for Chinese may be formulated in such a way to add a new predication to the RESTR list of the input verb.

6. Conclusion

6. Conclusion

➢ The restriction on the predication relation in the resultative construction in Japanese and Chinese is shown to be semantic rather than syntactic: resultatives can describe the state of an argument that undergoes a change of state regardless of whether such an argument is expressed as direct object or not.

➢ The data involving locative alternation verbs are used because they are known to denote an event in which both location and locatum arguments are lexically specified to undergo concurrent changes.

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