Medial left-node raising in Japanese

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Right-node raising (RNR)

- Canonical right-node raising

  This tall and that short **student** are a couple. (from Shen (2015))

- Medial right-node raising

  Are you talking about a new or that ex-**boyfriend** you used to date? (from Chaves (2014))

In this paper, I'm going to show ...

- that there is a phenomenon that can be viewed as a mirror image of medial RNR and thus might be designated as *medial left-node raising*, and

- that the properties of this phenomenon are consistent with the predictions of the HPSG-based theory of non-constituent coordination proposed in Yatabe (2001, 2012)

Why this is significant

Medial right-node raising is often slightly awkward, and the following two views are both plausible.

- A grammar-based view: Medial right-node raising is grammatical. Its slight awkwardness comes from the degraded parallelism between conjuncts.

- A performance-based view: Medial right-node raising is a result of a performance error.

The grammar-based view predicts the existence of medial left-node raising, a prediction yet to be tested.

Left-node raising (LNR) in English?

We **went to** Paris yesterday and London today.

(Probably left-node raising, but hard to distinguish from gapping)

Left-node raising in Japanese

[[Omoidasu ka] [omoidasanai ka]] ga
[[recall-PRES or] [recall-NEG-PRES or]] NOM
mondai da.
problem COP

This can be elided

‘Whether you recall it or you don’t is the problem.’

omoi 'thought' + **das-** 'to exude'
= **omoidas-** 'to recall'

Questionnaire 1A

- 16 respondents
- 3 experimental sentences, 29 fillers (for the purpose of this paper). Order of sentences randomized for each respondent.
- 4-point scale

  1: Perfect
  2: Slightly unnatural
  3: Considerably unnatural
  4: Impossible

A questionnaire result

"omoi-" is elided here

[[**Omoi**dasu ka] [dasanai ka]] ga

[[recall-PRES or] [‘exude’-NEG-PRES or]] NOM

mondai da. <12, 3, 1, 0>

problem COP

"impossible"

"perfect"

"considerably unnatural"

"slightly unnatural"

A part of a compound is normally not elidable

Omoidashita?
recall-PAST
'Have you recalled it?'

Iya, omoidasanai. <12, 2, 1, 1>
no recall-NEG-PRES
'No, I don't recall it.'

?? Iya, dasanai. <3, 3, 4, 6>
no 'exude'-NEG-PRES

The mark in front of each sentence

is determined by the average rating *M* of the sentence, according to the following rule.

No mark, when $1 \leqq M < 2$

?, when $2 \leqq M < 2.5$

??, when $2.5 \leqq M < 3$

?*, when $3 \leqq M < 3.5$

*, when $3.5 \leqq M \leqq 4$

(Recall that 1 means "perfect", 2 means "slightly unnatural, 3 means "considerably unnatural", and 4 means "impossible")

Questionnaire 1B

- 19 respondents
- 6 experimental sentences, 37 fillers (for the purpose of this paper). Order of sentences randomized for each respondent.
- The same 4-point scale
- **atar-** 'to bump' + **chiras** 'to sprinkle' = **atarichiras-** 'to throw tantrums'
- **tabe-** 'to eat' + **kir-** 'to cut' = **tabekir-** 'to eat up'

Another example of LNR

The boldfaced string is elided here

[[[**Sô yû toki ni**] **atari**chirasu
[[[such occasion DAT] throw tantrums-PRES
ka] [chirasanai ka]] de, zuibun
or] [‘sprinkle’-NEG-PRES or]] INST considerably
inshô ga chigaimasu yo. <17, 0, 1, 1>
impression NOM differ-POL.PRES I tell you

‘The impression you leave will be considerably different, depending on whether you throw tantrums on such occasions or you don’t, I tell you.’

Yet another example of LNR

[[[**Dasareta** **tabemono o**] **tabe**kireru
[[[serve-PASS-PAST food ACC] eat up-can-PRES
ka] [kirenai ka]] ga wakaremichi
or] [‘cut’-can-NEG-PRES or]] NOM crossroads
desu. <11, 6, 1, 1>
COP.POL

The boldfaced string is elided here

‘Whether you can eat up the food that you’re served or you cannot is the deciding issue.’

Non-elidability of the first part of the compound in the second example

Atarichirashita no?
throw tantrums-PAST NML
'Did you throw tantrums?'

Iya, atarichirasanakatta. <18, 1, 0, 0>
no throw tantrums-NEG-PAST
'No, I didn't throw tantrums.'

?? Iya, chirasanakatta. <2, 3, 12, 2>
no 'sprinkle'-NEG-PAST

Non-elidability of the first part of the compound in the third example

Tabekireta no?
eat up-can-PAST NML
'Were you able to eat it up?'

Iya, tabekirenakatta. <19, 0, 0, 0>
no eat up-can-NEG-PAST
'No, I couldn't eat it up'

?* Iya, kirenakatta. <0, 4, 11, 4>
no 'cut'-can-NEG-PAST

Summary of questionnaires 1A and 1B

- Japanese allows left-node raising of part of a compound

If LNR is a mirror image of RNR, then …

- Medial left-node raising must be possible. In other words, it must be possible for the left-node-raised string to be at a non-initial position within the initial conjunct. (Cf. a new _ or that ex-**boyfriend** you used to date)

- It must be impossible for the left-node-raised string to be missing from a non-initial position within a non-initial conjunct. (Cf. *that tall _ you used to date or a new **boyfriend**)

Questionnaire 2A

- 28 respondents
- 2 experimental sentences,14 fillers (for the purpose of this paper). Order of sentences randomized for each respondent.
- The same 4-point scale
- **omoi** 'thought' + **das-** 'to exude' = **omoidas-** 'to recall'

The LNRed expression can be realized at a non-initial position in the initial conjunct

"omoi" is elided here

? [[Sukoshi wa **omoi**dasu no ka],
[[at least a little recall-PRES NML or]
[dasanai no ka]], ga mondai
[‘exude’-NEG-PRES NML or]] NOM problem
da. <10, 10, 4, 4>
COP

‘Whether you recall it at least a little or you don’t is the problem.’

LNR is not possible from a non-initial position in the final conjunct

"omoi" is elided here

?? [[Sukoshi mo **omoi**dasanai no ka],
[[at all recall-NEG-PRES NML or]
[sukoshi wa dasu no ka]], ga
[at least a little ‘exude’-PRES NML or]] NOM
mondai da. <8, 6, 6, 8>
problem COP
‘Whether you don’t recall it at all or you do at least a little is the problem.’

The subtlety of the contrast was part of the prediction

- Medial left-node raising was expected to be slightly awkward, just like medial right-node raising.

- The example showing that the first part of the compound *omoidas-* is normally not elidable was in the "??" range, so the example of impossible left-node raising was predicted to be in the "??" range, too.

Questionnaire 2B

- 27 respondents
- 4 experimental sentences, 12 fillers (for the purpose of this paper). Order of sentences randomized for each respondent.
- The same 4-point scale
- **atar-** 'to bump' + **chiras** 'to sprinkle' = **atarichiras-** 'to throw tantrums'
- **tabe-** 'to eat' + **kir-** 'to cut' = **tabekir-** 'to eat up'

The second example of medial LNR

The two boldfaced strings are elided here

[[[**Sô yû** **toki** **ni**] sukoshi wa
[[[such occasion DAT] at least a little
atarichirasu no ka], [chirasanai no
throw tantrums-PRES NML or] [‘sprinkle’-NEG-PRES NML
ka]] de, zuibun inshô ga chigaimasu
or]] INST considerably impression NOM differ-POL.PRES
yo. <14, 7, 4, 2>
I tell you

‘The impression you leave would differ considerably, depending on whether you throw tantrums at least a little on such occasions or you don’t.’

The second example that shows that LNR is not possible from a non-initial position in the final conjunct

The boldfaced string is elided here

?? [[[**Sô yû toki ni**] **atari**chirasu no
[[[such occasion DAT] throw tantrums-PRES NML
ka], [sukoshi mo chirasanai no ka]] de,
or] [at all 'sprinkle'-NEG-PRES NML or]] INST
zuibun inshô ga chigaimasu yo.
considerably impression NOM differ-POL.PRES I tell you
<4, 8, 12, 3>
'The impression you leave would differ considerably, depending on whether you throw tantrums on such occasions or you don't at all.'

The third example of medial LNR

The two boldfaced strings are elided here

? [[[**Dasareta** **tabemono o**] dônika kônika
[[[serve-PASS-PAST food ACC] somehow or other
tabekireru ka] [kirenai ka]] ga
eat up-can-PRES or] [‘cut’-can-NEG-PRES or]] NOM
wakaremichi desu. <4, 16, 5, 2>
crossroads COP.POL

‘Whether you can somehow or other eat up the food that you’re served or you cannot is the deciding issue.’

The third example that shows that LNR is not possible from a non-initial position in the final conjunct

The boldfaced string is elided here

?* [[[**Dasareta** **tabemono** **o**] **tabe**kireru
[[[serve-PASS-PAST food ACC] eat up-can-PRES
ka] [dô shite mo kirenai ka]] ga
or] [for the life of you ‘cut’-can-NEG-PRES or]] NOM
wakaremichi desu. <0, 4, 13, 10>
crossroads COP.POL

‘Whether you can eat up the food that you’re served or you cannot for the life of you is the deciding issue.’

Summary of Questionnaires 2A and 2B

- Medial left-node raising is possible. In other words, it is possible for the left-node-raised string to be at a non-initial position within the initial conjunct.

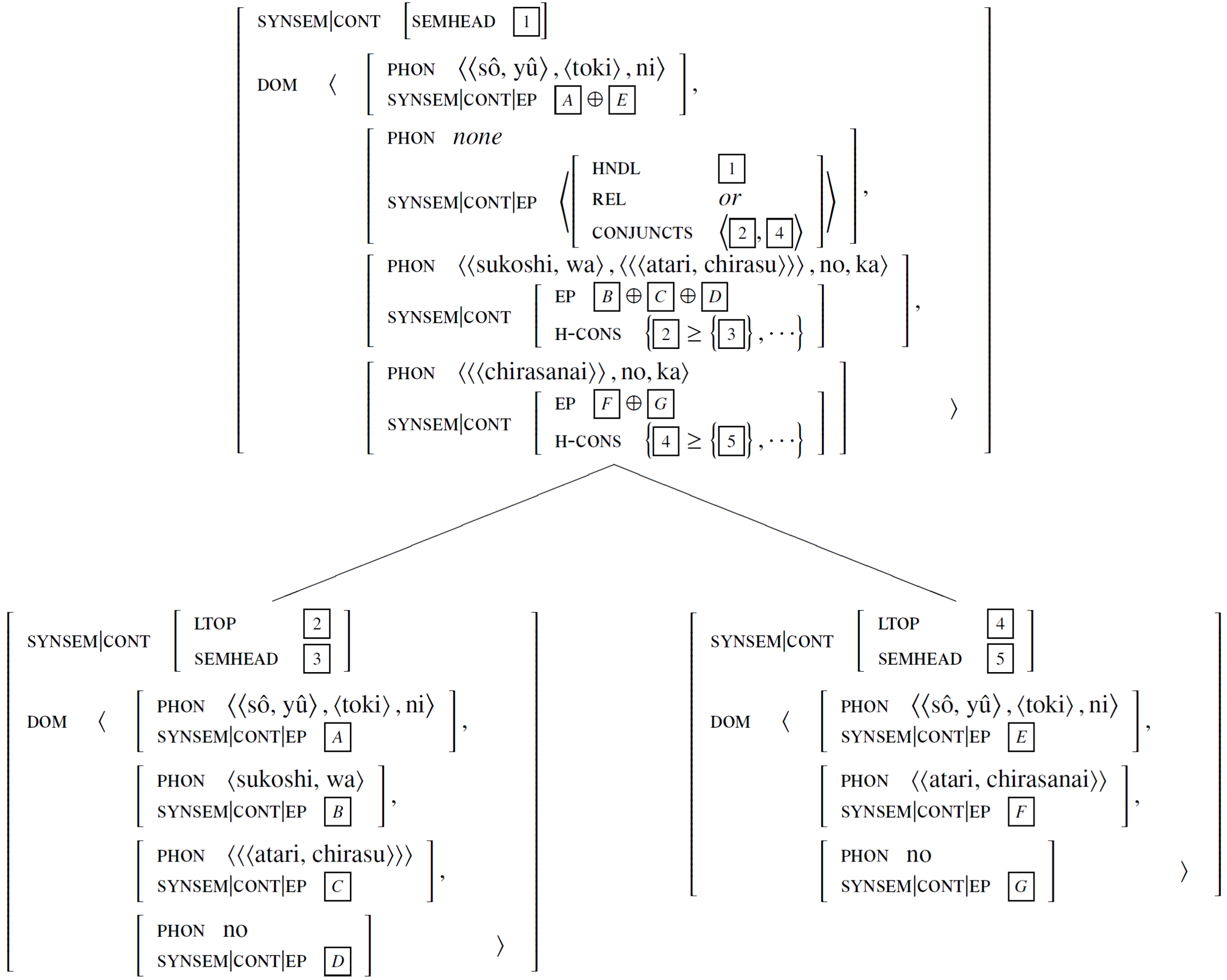
- It is impossible for the left-node-raised string to be missing from a non-initial position within a non-initial conjunct.

A linearization-based account

- Each node in a syntactic tree is associated with an order domain, which is a list of domain objects, which are essentially prosodic constituents that are semantically interpreted.

- Right-node raising and left-node raising take place in order domains. (Yatabe 2001, 2012)

- RNR and LNR come in 2 types: a phonological type, which is merely prosodic ellipsis, and a syntactic type, which involves merging of domain objects.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SYNSEM|CONT|EP A ⊕ E
PHON none
SYNSEM|CONT|EP ⟨ HNDL 1, REL or, CONJUNCTS ⟨2, 4⟩ ⟩
PHON ⟨⟨sukoshi, wa⟩, ⟨⟨⟨atari, chirasu⟩⟩⟩, no, ka⟩
SYNSEM|CONT EP B ⊕ C ⊕ D, H-CONS {2 ≥ {3}, ···}
PHON ⟨⟨⟨chirasanai⟩⟩, no, ka⟩
SYNSEM|CONT EP F ⊕ G, H-CONS {4 ≥ {5}, ···}
⟩
SYNSEM|CONT [LTOP 2, SEMHEAD 3]
DOM ⟨
PHON ⟨⟨sô, yû⟩, ⟨toki⟩, ni⟩
SYNSEM|CONT|EP A
PHON ⟨sukoshi, wa⟩
SYNSEM|CONT|EP B
PHON ⟨⟨⟨atari, chirasu⟩⟩⟩
SYNSEM|CONT|EP C
PHON no
SYNSEM|CONT|EP D
⟩
SYNSEM|CONT [LTOP 4, SEMHEAD 5]
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PHON ⟨⟨sô, yû⟩, ⟨toki⟩, ni⟩
SYNSEM|CONT|EP E
PHON ⟨⟨atari, chirasanai⟩⟩
SYNSEM|CONT|EP F
PHON no
SYNSEM|CONT|EP G
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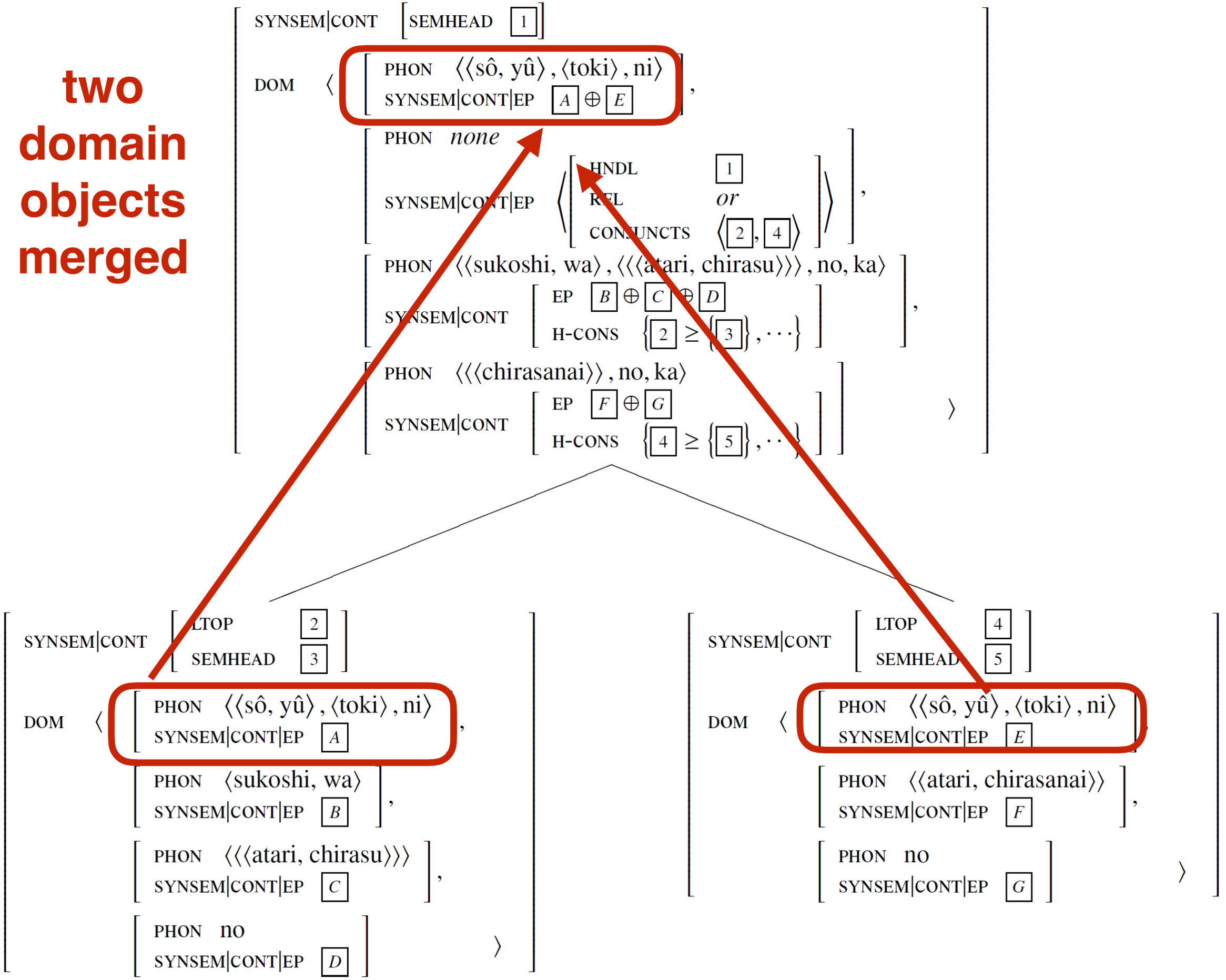
two domain objects merged



two domain objects merged

one string deleted

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\\
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\qquad\qquad \left[\begin{array}{ll} \textsc{phon} & \langle\langle\langle \text{sô, yû} \rangle, \langle \text{toki} \rangle, \text{ni} \rangle, \langle \text{sukoshi, wa} \rangle, \langle\langle\langle \text{atari, chirasu} \rangle\rangle\rangle, \text{no, ka} \rangle \\ \textsc{synsem}|\textsc{cont} & \left[\begin{array}{ll} \textsc{ep} & \boxed{A} \oplus \boxed{B} \oplus \boxed{C} \oplus \boxed{D} \\ \textsc{h-cons} & \left\{ \boxed{2} \geq \left\{ \boxed{3} \right\}, \cdots \right\} \end{array}\right] \end{array}\right], \\
\qquad\qquad \left[\begin{array}{ll} \textsc{phon} & \langle \textit{none}, \langle\langle \text{chirasanai} \rangle\rangle, \text{no, ka} \rangle \\ \textsc{synsem}|\textsc{cont} & \left[\begin{array}{ll} \textsc{ep} & \boxed{E} \oplus \boxed{F} \oplus \boxed{G} \\ \textsc{h-cons} & \left\{ \boxed{4} \geq \left\{ \boxed{5} \right\}, \cdots \right\} \end{array}\right] \end{array}\right] \qquad \rangle
\end{array}\right]
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$$
\left[\begin{array}{l}
\textsc{synsem}|\textsc{cont} \quad \left[\begin{array}{ll} \textsc{ltop} & \boxed{2} \\ \textsc{semhead} & \boxed{3} \end{array}\right] \\
\\
\textsc{dom} \quad \langle \quad \left[\begin{array}{ll} \textsc{phon} & \langle\langle \text{sô, yû} \rangle, \langle \text{toki} \rangle, \text{ni} \rangle \\ \textsc{synsem}|\textsc{cont}|\textsc{ep} & \boxed{A} \end{array}\right], \\
\qquad\qquad \left[\begin{array}{ll} \textsc{phon} & \langle \text{sukoshi, wa} \rangle \\ \textsc{synsem}|\textsc{cont}|\textsc{ep} & \boxed{B} \end{array}\right], \\
\qquad\qquad \left[\begin{array}{ll} \textsc{phon} & \langle\langle\langle \text{atari, chirasu} \rangle\rangle\rangle \\ \textsc{synsem}|\textsc{cont}|\textsc{ep} & \boxed{C} \end{array}\right], \\
\qquad\qquad \left[\begin{array}{ll} \textsc{phon} & \text{no} \\ \textsc{synsem}|\textsc{cont}|\textsc{ep} & \boxed{D} \end{array}\right] \qquad \rangle
\end{array}\right]
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\left[\begin{array}{l}
\textsc{synsem}|\textsc{cont} \quad \left[\begin{array}{ll} \textsc{ltop} & \boxed{4} \\ \textsc{semhead} & \boxed{5} \end{array}\right] \\
\\
\textsc{dom} \quad \langle \quad \left[\begin{array}{ll} \textsc{phon} & \langle\langle \text{sô, yû} \rangle, \langle \text{toki} \rangle, \text{ni} \rangle \\ \textsc{synsem}|\textsc{cont}|\textsc{ep} & \boxed{E} \end{array}\right], \\
\qquad\qquad \left[\begin{array}{ll} \textsc{phon} & \langle\langle \text{atari, chirasanai} \rangle\rangle \\ \textsc{synsem}|\textsc{cont}|\textsc{ep} & \boxed{F} \end{array}\right], \\
\qquad\qquad \left[\begin{array}{ll} \textsc{phon} & \text{no} \\ \textsc{synsem}|\textsc{cont}|\textsc{ep} & \boxed{G} \end{array}\right] \qquad \rangle
\end{array}\right]
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The persistence constraint

- Any ordering relation that holds between domain objects α and β in one order domain must also hold between α and β in all other order domains that α and β are members of. (Kathol 1995)

- The generalized persistence constraint: (substitute "strings" for "domain objects" in the above)

Right-node raising and the persistence constraint

this tall **student**
(and) that short **student**
→ This tall and that short **student**

(Blue>Black and Red>Black throughout)

a new **boyfriend**
(or) that ex-**boyfriend** you used to date
→ a new or that ex-**boyfriend** you used to date

(Blue>Black, Red>Black, and Black>Green throughout)

Right-node raising and the persistence constraint (continued)

that tall **boyfriend** you used to date
(or) a new **boyfriend**

→ *that tall you used to date or a new **boyfriend**

(Black>Green at first, but Green>Black in the new structure)

Left-node raising and the persistence constraint

pre-LNR

sô yû toki ni sukoshi wa **atari**chirasu no ka

sô yû toki ni **atari**chirasanai no ka

↓

post-LNR

sô yû toki ni sukoshi wa **atari**chirasu no ka
chirasanai no ka

Blue>Green>Black>Red and Blue>Black>Gold throughout

Left-node raising and the persistence constraint (Continued)

pre-LNR

sô yû toki ni atarichirasu no ka

sô yû toki ni sukoshi mo **atari**chirasanai no ka

↓

post-LNR

*__sô yû toki ni atari__chirasu no ka sukoshi mo chirasanai no ka

Green>Black at first but Black>Green in the new structure

Comparison with Categorial Grammar-based accounts

- Categorial Grammar-based account cannot capture the medial LNR facts.

- The linearization-based accounts can explain the semantic effects of RNR and LNR, pace Kubota and Levine (2015).

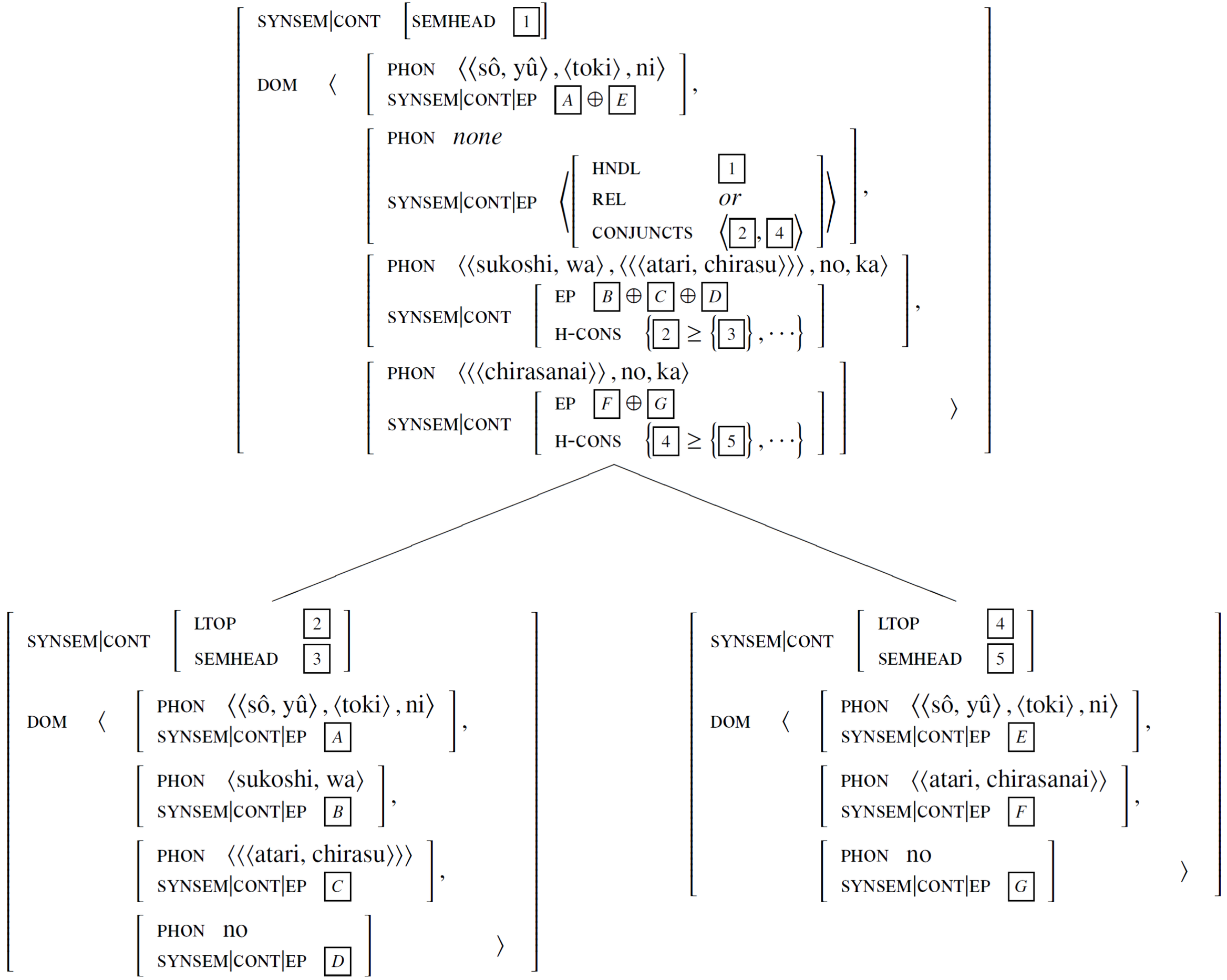
Semantic interpretation in the linearization-based account

- In most theories, larger and larger syntactic constituents are interpreted, on the basis of the meaning of smaller syntactic constituents.

- In contrast, in the theory of Yatabe (2001), larger and larger *domain objects* are interpreted, mainly on the basis of the meaning of smaller domain objects.

- Therefore, in the latter theory, when two or more domain objects are merged, the semantic interpretation is naturally affected.

Semantic interpretation in the standard theory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PHON none
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PHON ⟨⟨sukoshi, wa⟩, ⟨⟨⟨atari, chirasu⟩⟩⟩, no, ka⟩
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SYNSEM|CONT|EP C
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SYNSEM|CONT|EP D
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SYNSEM|CONT [LTOP 4, SEMHEAD 5]
DOM ⟨
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PHON ⟨⟨atari, chirasanai⟩⟩
SYNSEM|CONT|EP F
PHON no
SYNSEM|CONT|EP G
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\qquad \left[\begin{array}{l}\text{PHON}\quad \langle\langle\langle \text{chirasanai}\rangle\rangle, \text{no, ka}\rangle \\ \text{SYNSEM}|\text{CONT}\quad \left[\begin{array}{ll}\text{EP} & \boxed{F}\oplus\boxed{G} \\ \text{H-CONS} & \left\{\boxed{4}\geq\left\{\boxed{5}\right\},\cdots\right\}\end{array}\right]\end{array}\right] \qquad \rangle
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\qquad \left[\begin{array}{l}\text{PHON}\quad \langle\langle \text{atari, chirasanai}\rangle\rangle \\ \text{SYNSEM}|\text{CONT}|\text{EP}\quad \boxed{F}\end{array}\right], \\
\qquad \left[\begin{array}{l}\text{PHON}\quad \text{no} \\ \text{SYNSEM}|\text{CONT}|\text{EP}\quad \boxed{G}\end{array}\right] \qquad \rangle
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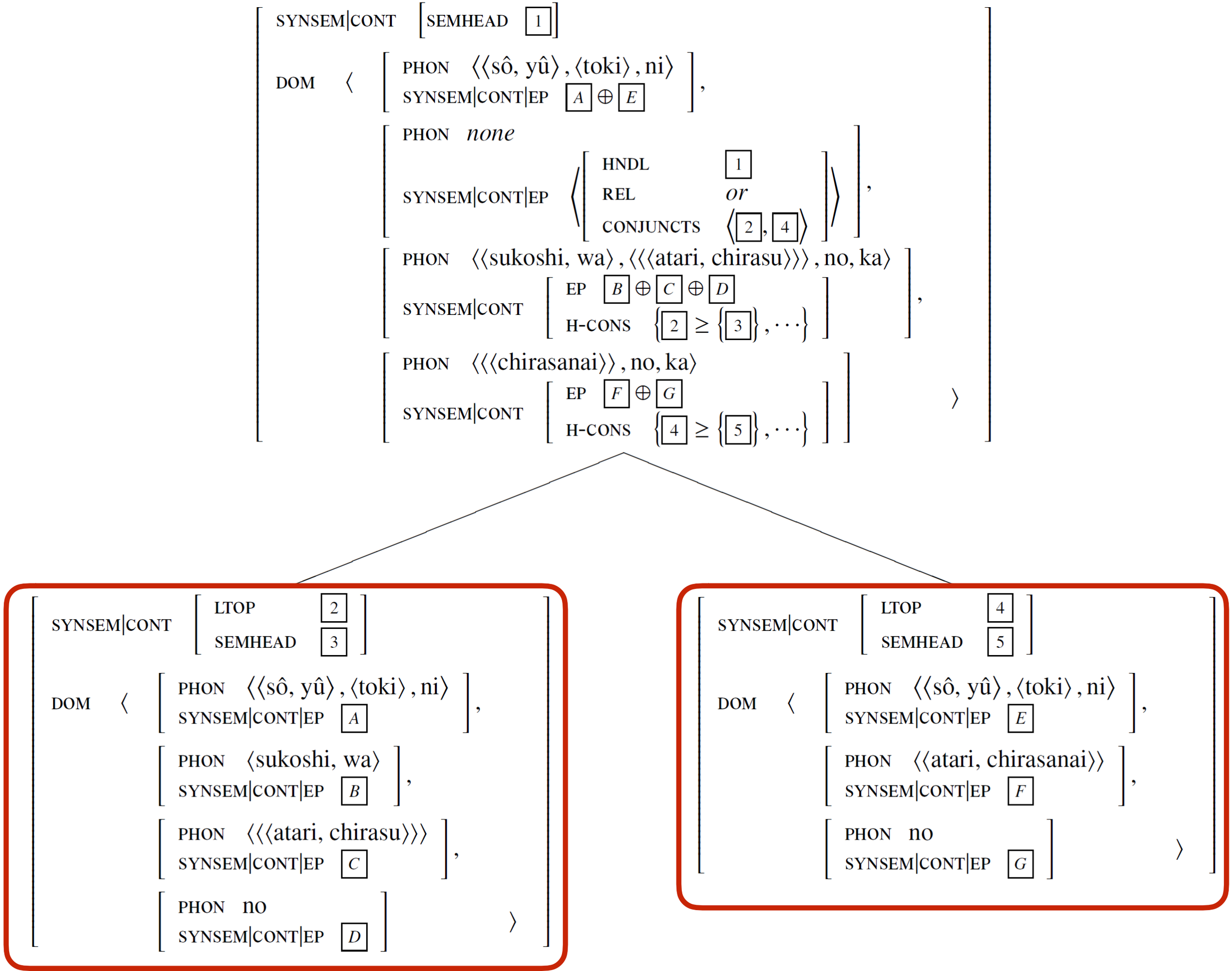
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PHON none
SYNSEM|CONT|EP ⟨ HNDL 1, REL or, CONJUNCTS ⟨2, 4⟩ ⟩
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SYNSEM|CONT EP B ⊕ C ⊕ D, H-CONS {2 ≥ {3}, ···}
PHON ⟨⟨⟨chirasanai⟩⟩, no, ka⟩
SYNSEM|CONT EP F ⊕ G, H-CONS {4 ≥ {5}, ···}
⟩
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SYNSEM|CONT|EP A
PHON ⟨sukoshi, wa⟩
SYNSEM|CONT|EP B
PHON ⟨⟨⟨atari, chirasu⟩⟩⟩
SYNSEM|CONT|EP C
PHON no
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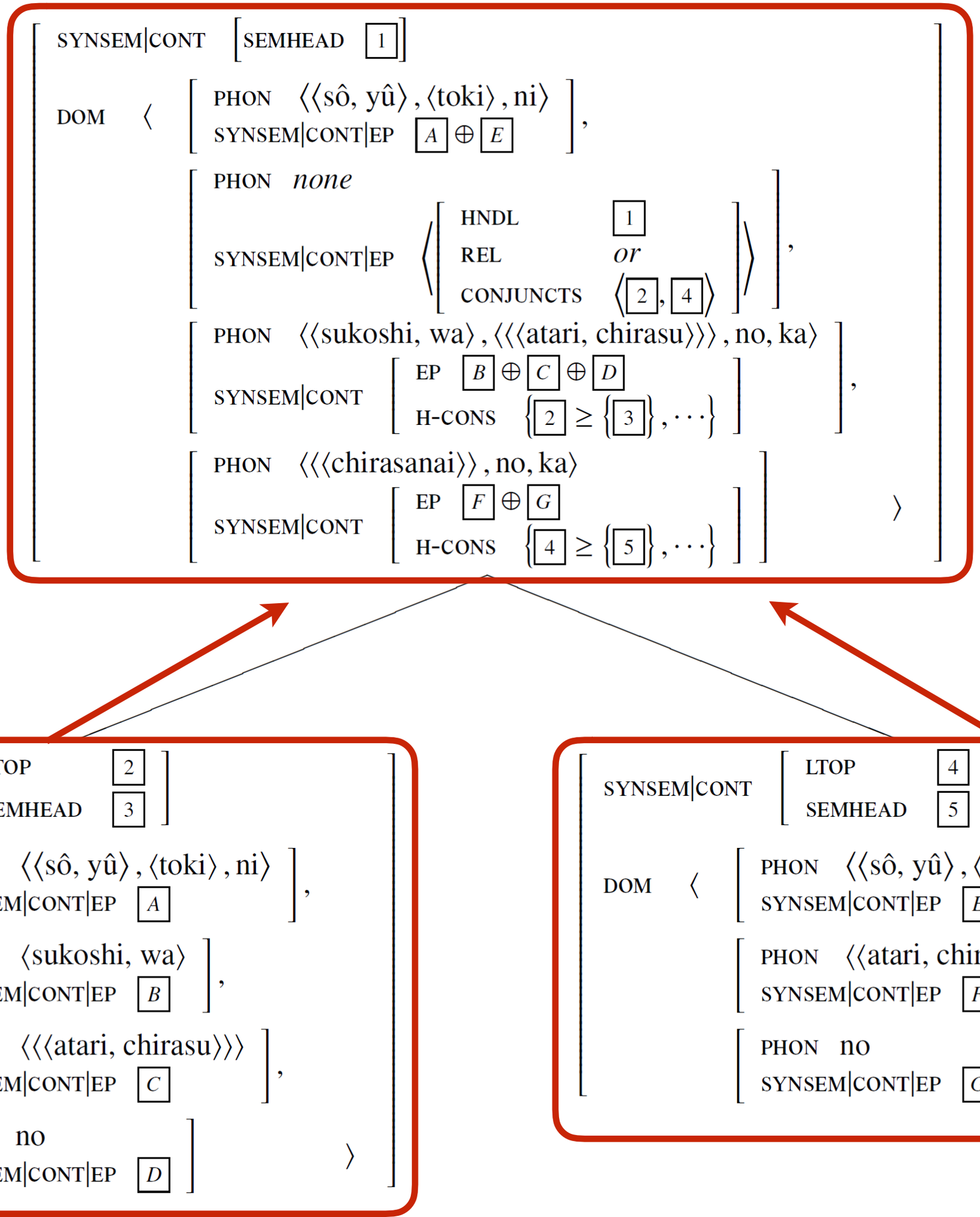
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PHON no
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⟩
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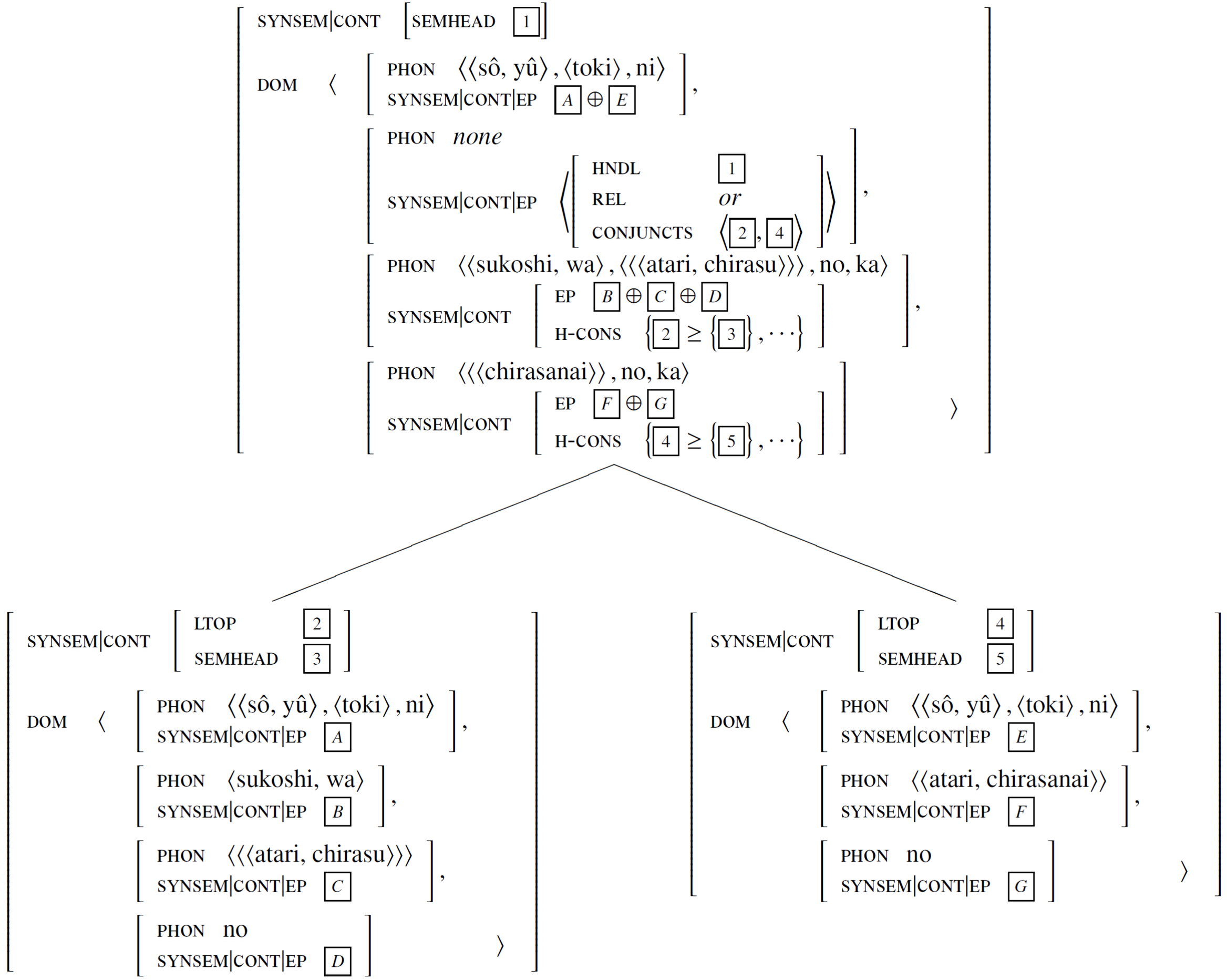
Semantic interpretation in the proposed theory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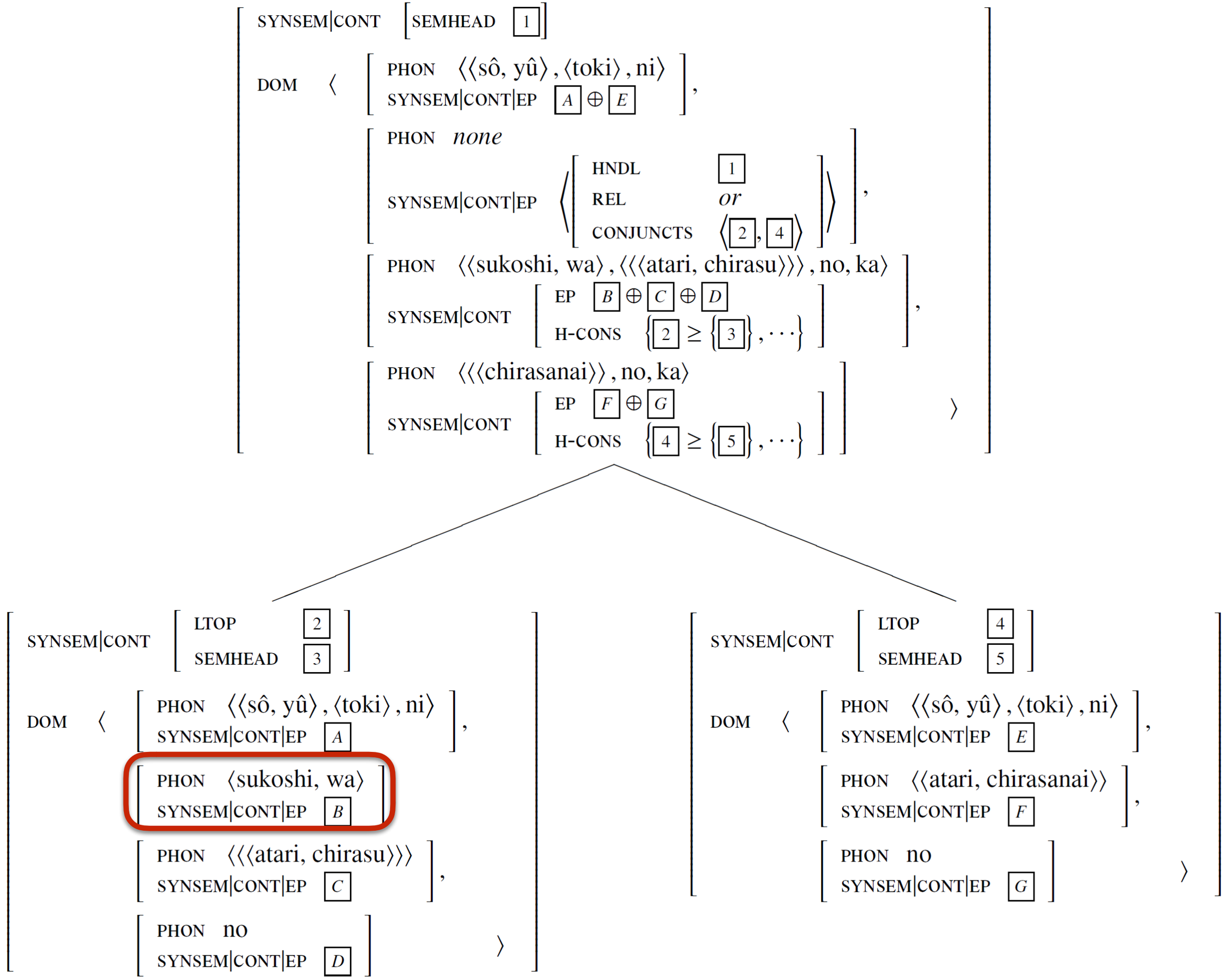
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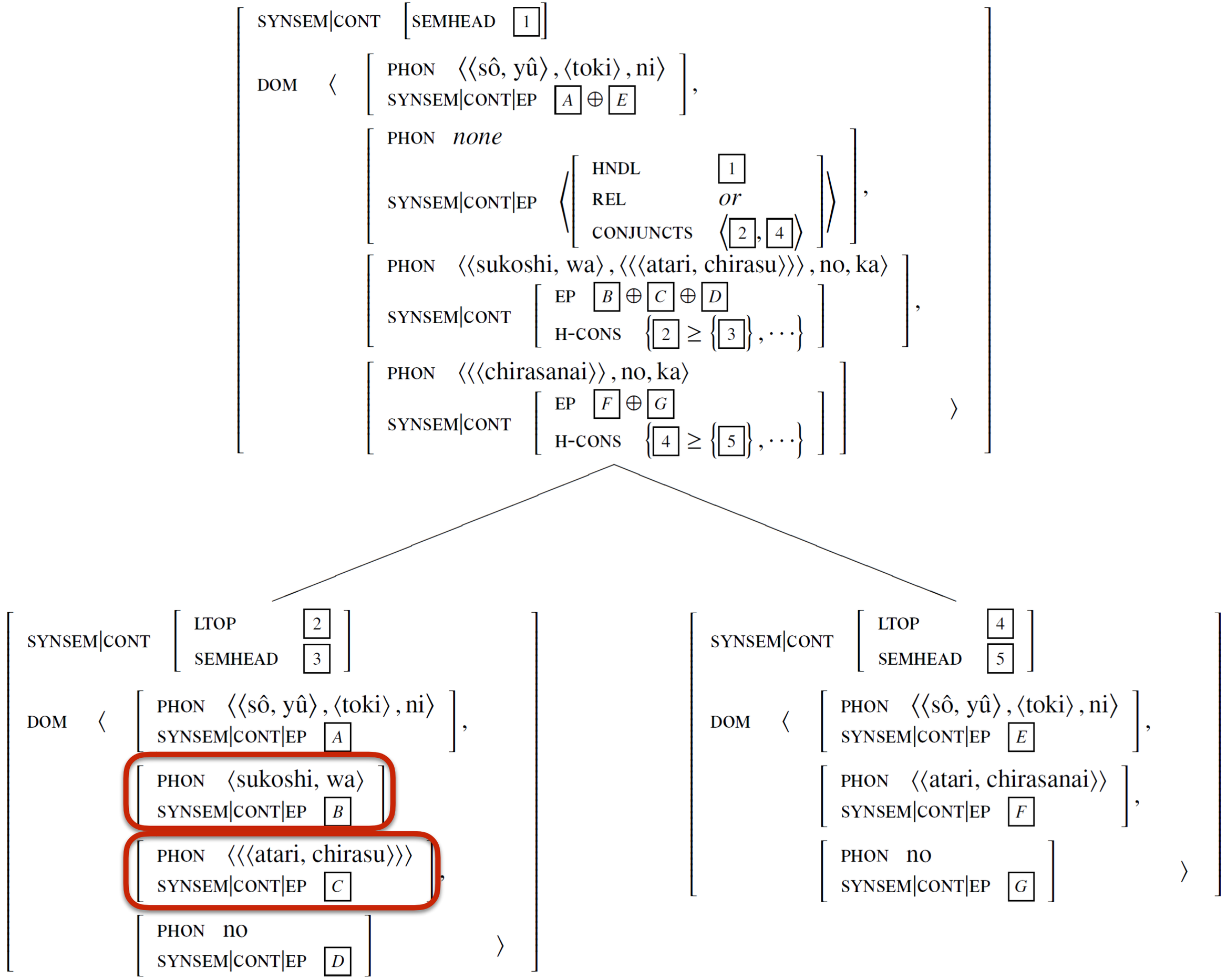
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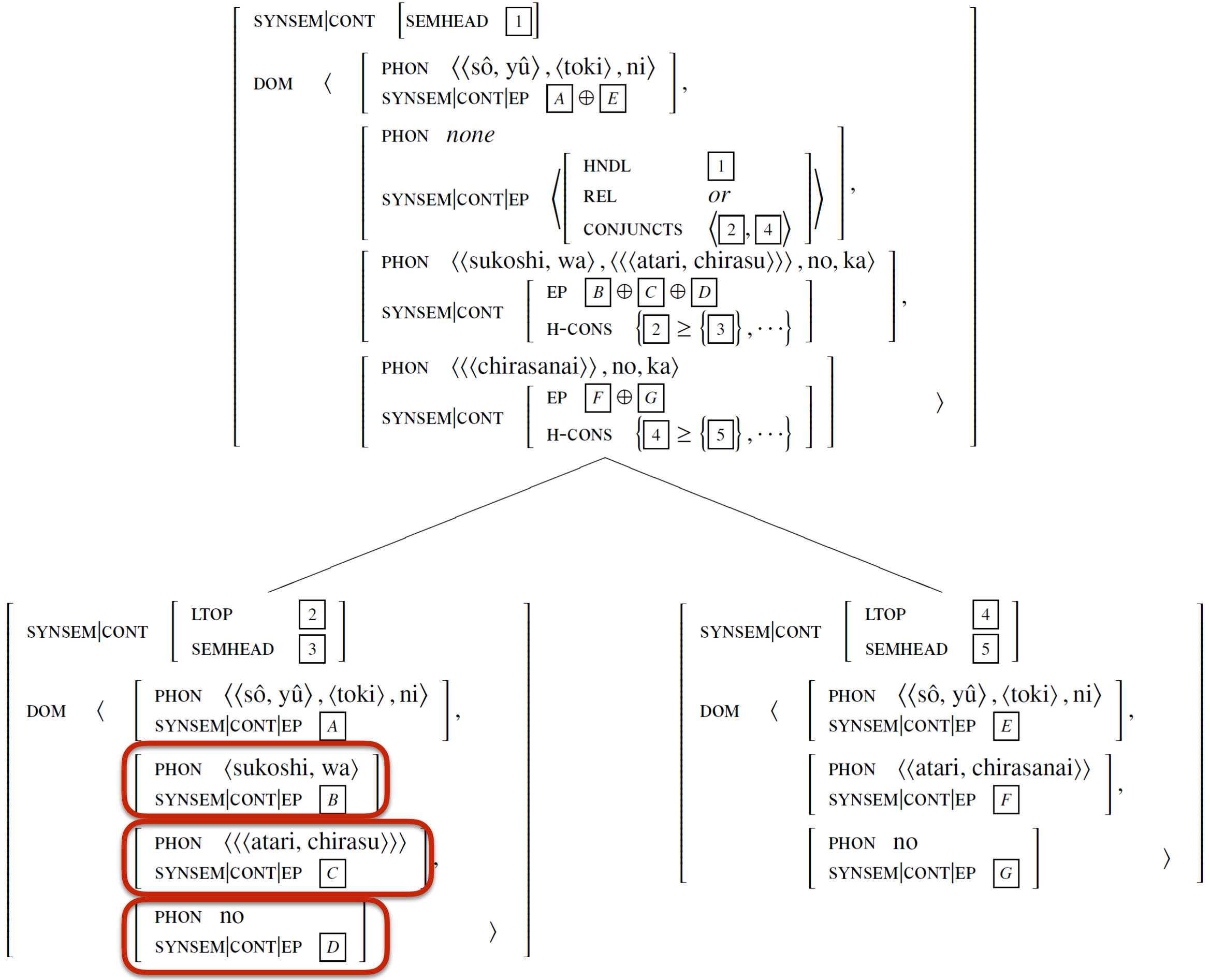
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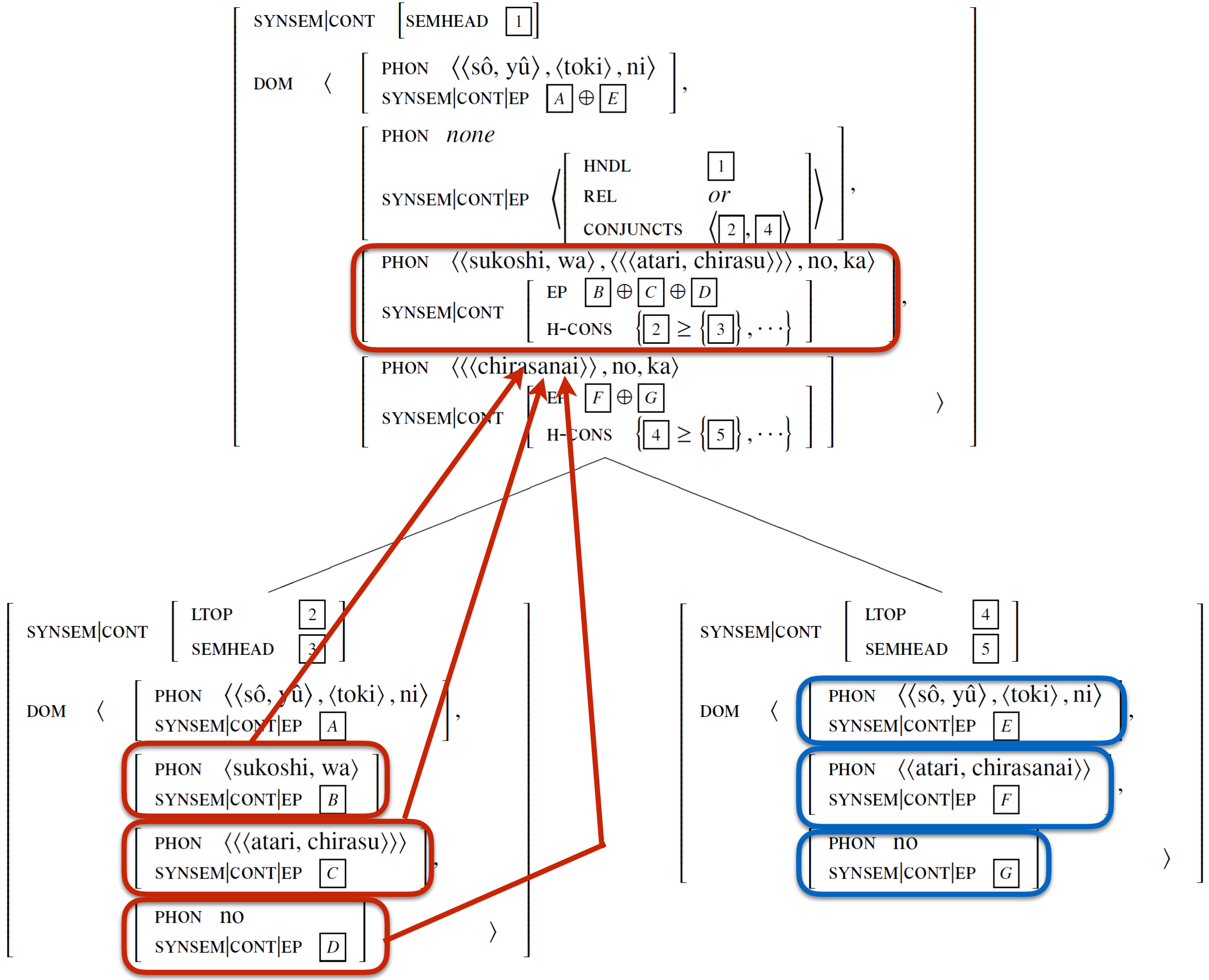
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EP F ⊕ G
H-CONS 4 ≥ 5, ...
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SEMHEAD 3
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SYNSEM|CONT|EP C
PHON no
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SYNSEM|CONT|EP G
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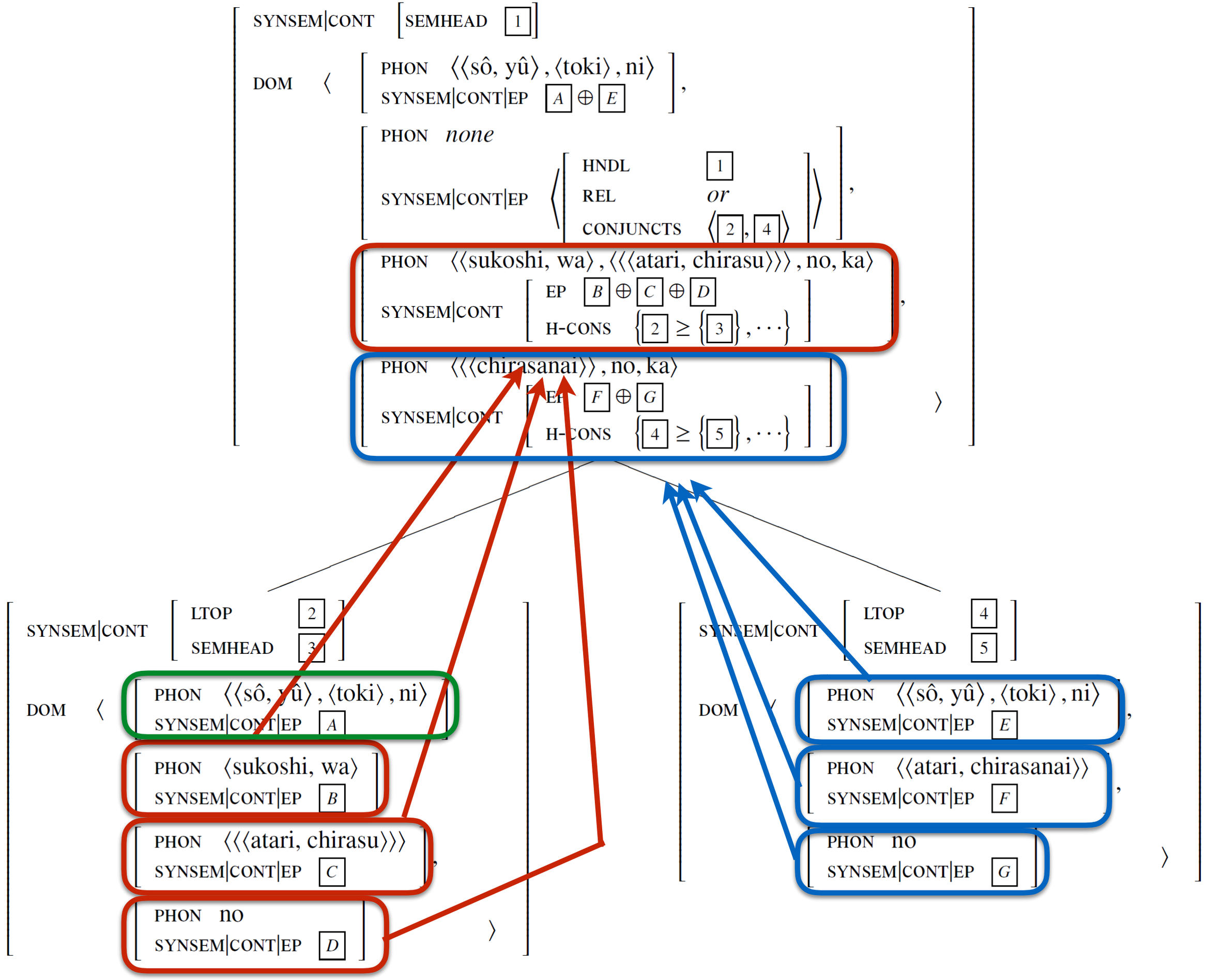
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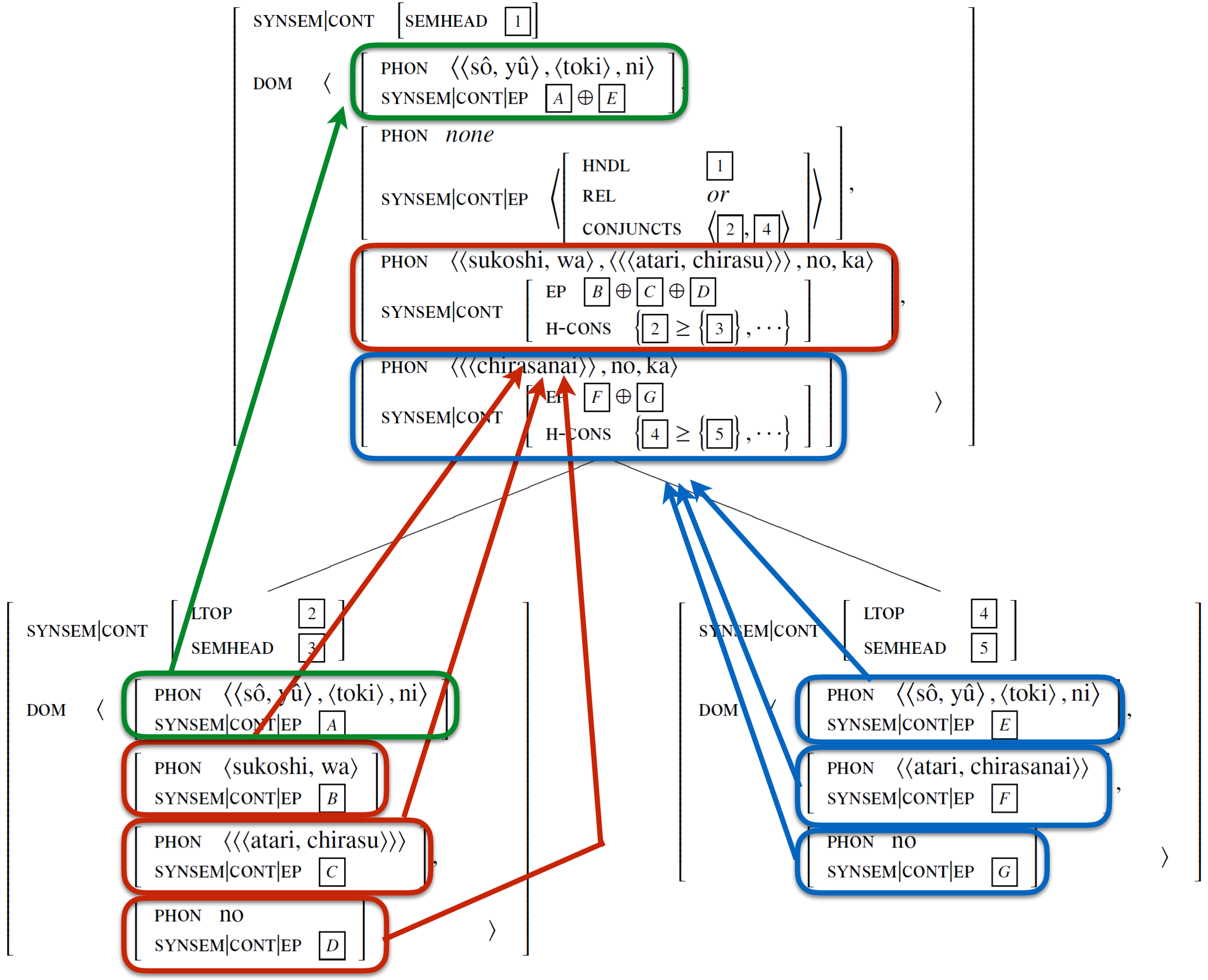
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⟩

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⟩

Comparison with SLASH-based accounts

- Meaning-preserving RNR = ellipsis and Meaning-changing RNR = movement?

- No.

- Carl Philip Emmanuel Bach secretly hid or donated **every manuscript in his father's collection** to the library. (Many of the former type remain lost, while the latter are well pre-served.) (from Warstadt (2015))

Summary

- There is a phenomenon that can be viewed as a mirror image of medial RNR and thus might be designated as *medial left-node raising*.

- The properties of this phenomenon are mostly consistent with the predictions of the HPSG-based theory of non-constituent coordination proposed in Yatabe (2001, 2012).