

ラベリングにもとづく逆作用域解釈の可否
(Labeling and Inverse Scope)
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1. Introduction

- (1) “inverse correlation” (Szabolcsi 1997)
- languages with free word order: rigid scope
 - languages with strict possibilities of word order: tolerance for scope ambiguity

- English

- (2) A girl recommended every boy.
- (3) a. There is x, x a girl such that for every y, y a boy, x recommended y. ($\exists > \forall$)
b. For every y, y a boy, there is x, x a girl such that x recommended y. ($\forall > \exists$)

- Japanese

- (4) Onnanoko-ga hitori dono otokonoko-mo suisensita
girl-NOM one every otokonoko-MO recommended
'A girl recommended every boy'
- (5) a. There is x, x a girl such that for every y, y a boy, x recommended y. ($\exists > \forall$)
b. * For every y, y a boy, there is x, x a girl such that x recommended y. ($*\forall > \exists$)
- (6) Japanese is claimed to be a scope rigid language.
(e.g. Kuroda 1965, Kuno 1973, Hoji 1985. Lasnik & Saito 1992, Bobaljik & Wurmbrand 2012)

- Why is the inverse scope not allowed in Japanese (i.e., (5b)) while it is available in English (i.e. (3b))?

(7) Scope Transparency (ScoT)

If the order of two elements at LF is $A \gg B$, the order at PF is $A \gg B$.

(Bobaljik and Wurmbrand 2012: 373)

- (8) “... inverse scope in [4] is blocked by the availability of [9a], which is a more transparent reflection of the scope. QR is possible in this context in English, precisely because English lacks scrambling.” See (9b). (Bobaljik & Wurmbrand 2012, 373. The underline is the author’s)
- (9) a. dono otokonoko-mo onnanoko-ga hitori suisensita ($\forall > \exists$)
every boy-MO girl-NOM one recommended
lit. ‘every boy, a girl recommended’
b. * Every boy, a girl recommended.

1.1 Issues

- A “trans-derivational” (global) comparison is involved in Bobaljik & Wurmbrand’s system. (“no motivation for additional representations ... that assumed trans-derivational comparisons” (Chomsky, Gallego and Ott (CGO) 2017: 7))
- How to capture Szabolcsi’s observation without resorting to global comparison?
- Why is QR possible even though scrambling is not in English?

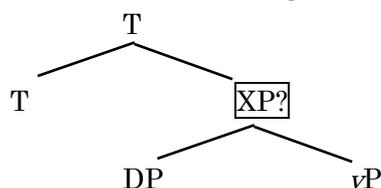
* Parts of the current work were presented at NINJAL workshops (December 2016, December 2017, Tachikawa), the 92nd LSA Annual Meeting (January 2018, Salt Lake City), and the 62nd General Meeting of the English Literary Society of Japan, Hokkaido Branch (October 2017, Sapporo). I am grateful to the audiences in these occasions for comments and feedbacks, especially to Mamoru Saito, Željko Bošković, Koji Hoshi, and Masahiko Takahashi for invaluable discussion. This work is supported by JSPS KAKENHI Grant Number 18K00519.

1.2 Theoretical Backgrounds

- (10) a. free merge (Chomsky 2013, 2015)
 b. “overt” movement: higher copy externalization (cf. Takahashi’s presentation)
 c. “covert” movement: lower copy externalization
 d. (10b) is typically preferred.
 “To what extent and under which conditions this preference can be overridden by parametric and other factors remains as an important research question.” (CGO, p.6)
 e. “the same labeling is required at CI and for the process of externalization” (Chomsky 2015:6)
 ← **I will challenge (10e), which in turn solves inverse scope issue.** (cf. Hoshi’s presentation)

1.3 Labeling: a quick review

- (11) Labeling is necessary for a syntactic object to be interpreted (for PF interpretation = pronunciation, and for LF interpretation) (Chomsky & Halle 1968, Chomsky 2013, 2015)
 a. Labeling “must take place at the phase level, as part of the Transfer operation” (Chomsky 2015:6)
 b. labeling timing can be different between (12a) and (12b) (Bošković 2016)
 (i) immediately upon merge in (12a)
 (ii) when the structure is sent to the interface in (12b)
- (12) a. $\{H, YP\} = H$ is the label
 b. $\{XP, YP\} = \text{label?}^1$
- (13) Merge itself is insensitive to the label of the syntactic objects: an unlabeled set (e.g., $\{\boxed{XP?}, \{DP, vP\}\}$) can be merged with a head (e.g., T):



- (14) Since the CI interface and the SM interface are quite different in nature, it is important to examine **whether the assumption in (11a) is really true.**

2. A labeling-based account of the scrambling-QR inverse correlation

- (15) a. b.

- (16) Saito (2016):
 anti-labeling property of Japanese suffixal cases

¹ Two strategies are proposed to avoid the $\{XP, YP\}$ problem in Chomsky (2013). One is that some shared features between the “head” of XP and the “head” of YP is the label of $\{XP, YP\}$. The other is that one of the phrase (say, XP) moves out so that the remaining phrase (say, YP) is now the most salient and thus turns out to be the label of the set.

(17) English

- a. [TP Mary didn't go [DP anywhere]]
 b. * [XP? [DP anywhere] [TP Mary didn't go [DP anywhere]]]
 c. [TP Bill will give [DP the book][PP to John]]
 d. * [XP? [DP the book] [XP? [PP to John] [TP Bill will give [DP the book][PP to John]]]]
-

(18) The upper copy of [DP anywhere] in (17b), for instance, cannot stay up there (i.e., no scrambling allowed) because there is no way to specify the label for XP? in English: XP? in (17b) is uninterpretable at the interfaces.

(19) Japanese

- a. [TP Mary-wa [DP doko-ni-mo] ikanakatta]
 M-TOP anywhere go-neg-PAST
 b. [XP [DP doko-ni-mo] [TP Mary-wa [DP doko-ni-mo] ikanakatta]]
 c. [TP Bill-ga [PP John-ni] [DP sono hon-o] watasu]
 Bill-NOM [PP John-to] [DP the book-ACC] will-give
 'Bill will give the book to John'
 d. [XP [DP sono hon-o]₂ [XP [PP John-ni]₁ [TP Bill-ga [PP John-ni]₁ [DP sono hon-o]₂ watasu]]]
-

lit. 'The book, to John, Bill will give'

(20) Given Saito's (2016) proposal in (16), the upper [DP doko-ni-mo] 'anywhere' in (19b) can stay up there because the label for XP is uniquely determined as TP. Likewise, the upper copy of [DP sono hon-o]₂ 'the book-ACC' and the upper copy of [PP John-ni]₁ 'to John' are externalized. (Scrambling is allowed in Japanese).

- Why is scope rigid in Japanese (why no inverse scope available)?

- (21) a. (Internal) Merge (the operation itself) is freely available.
 b. Once XP is "moved", the upper copy is pronounced **unless some PF condition prevents the upper copy externalization.**

(22) **Proposal (I) Externalize Higher**

- a. PF parser prefers the higher copy externalization.
 b. If something "phonological" prevents the realization of the upper copy, the lower copy is pronounced.

(23) The intuition behind (22a) is that PF parser is a mechanism which maps a syntactic object (a set) onto a linearly aligned object to be dealt with in the SM performance system. The parser simple-mindedly processes the object top-down: when you find one, externalize (pronounce) it.

(24) What is (22b)? We will see a possible instantiation of (22b) in Romanian, and argue that English QRs are another case of (22b) **in terms of labeling failure at the PF side.**

- Romanian

(25) Romanian is an SVO language.

(26) Romanian is a multiple *wh*-fronting language: all *wh*-phrases must be fronted.

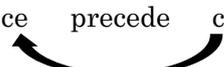
- a. Cine ce precede?
 who what precedes
- b. *Cine precede ce?
 who precedes what
 'Who precedes what?'

- However,

- (27) a. Ce precede ce?
 what precede what
- b. *Ce ce precede?
 what what precedes
 'What precedes what?'

(28) PF constraint

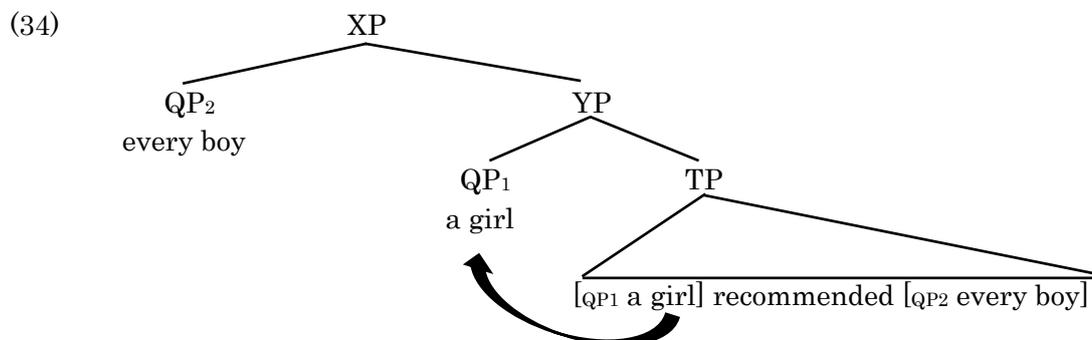
*consecutive homophonous *wh*-phrases (Bošković 2002)

- (29) a. [ce ce precede ce]

- b. [ce ee precede ce]


(30) IM applies.

PF constraint (28) prevents Externalize Higher from applying. → Lower copy pronounced²

- Coming back to the Szabolcsi's inverse correlation: $[\alpha \text{ scrambling}] \leftrightarrow [-\alpha \text{ QR}]$



(35) Given Externalize Higher and phonological condition (22), once you move, you have to be pronounced upstairs unless something phonological blocks the upstairs realization.

(36) Given Saito's anti-labeling hypothesis in (16), in Japanese the labeling of XP and YP in (34) is uniquely determined as TP because of the Case suffix on QP₁ and QP₂. Consequently, scrambling is possible AND QR is not.

(38) In English, on the other hand, the labeling of XP and YP in (34) is not determined given Chomsky's (2013, 2015) Labeling Algorithm (12b), assuming that there is no relevant shared features between the Q head and the T head. Hence, no overt realization of the upper QP₁ and the upper QP₂ is allowed. No scrambling in English.

² See Oku (2018) for discussion that Stjepanović (2007) gives another possible instance of (20b).

- (12) a. $\{H, YP\} = H$ is the label
 b. $\{XP, YP\} = \text{label?}$

(39) We can capture B&W's intuition by appealing to a fundamental requirement of language computation, i.e., labeling. No global "trans-derivational" comparison is necessary.

3. Types of Labels at CI

- If scrambling is not allowed because of the labeling failure in English, why is QR free from the labeling problem in English to begin with?

(40) Why is there no labeling problem for XP and YP in (34) at the LF interface (in English)?

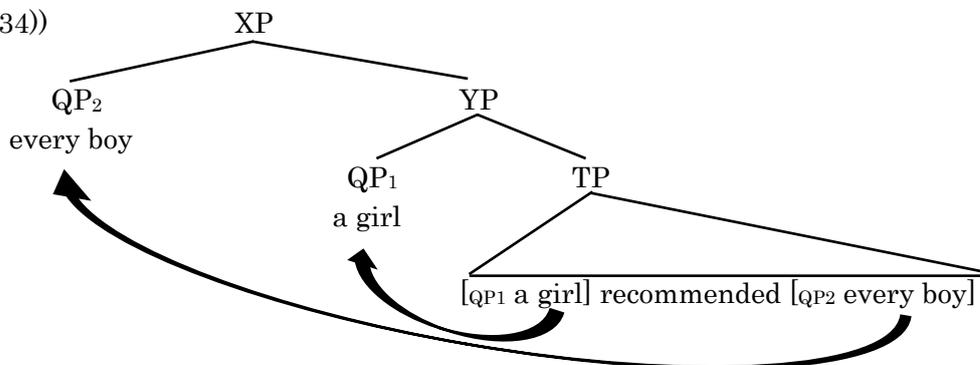
(41) **Proposal (II)**

At LF, a quantifier phrase is a kind of "head."

- (42) a. [every boy] [a girl] [a girl recommended every boy] (PF representation)
 b. $[\forall y]$ $[\exists x]$ $[x, x \text{ a girl recommended } y, y \text{ a boy}]$ (LF representation)

- PF interface

(43) (= (34))

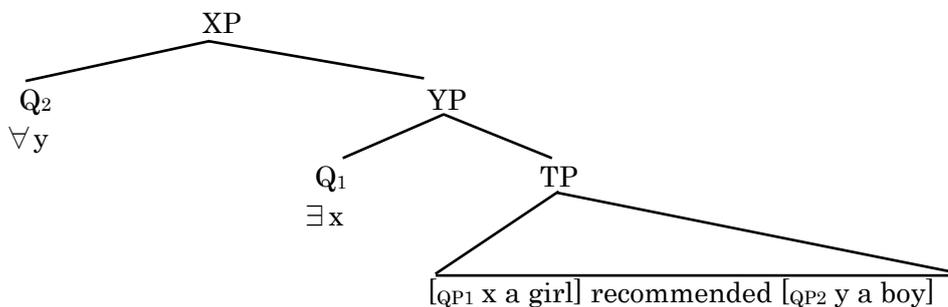


(44) Syntactically (morphophonologically), *a girl* is a phrase, not a head, and thus YP in (43) is unlabeled at PF. Likewise, *every boy* is not a head and thus XP in (43) is unlabeled at PF. XP and YP in (43) cannot be interpreted at PF if we try to make the upper copy externalized (pronounced): thus the lower copy must be pronounced.

→ no scrambling (no "overt" QR) in English

- LF interface

(45)



(46) Semantically, $[\exists x]$ is a one-place predicate taking TP ("a proposition containing a corresponding variable x , and its restriction") as its complement, and thus it ("Q₁") is a head semantically in (45), determining the label YP at LF. Likewise, $[\forall y]$ is a one-place predicate taking YP as its complement, and thus it ("Q₂") is a head semantically in (45), determining the label XP at LF. There is no labeling problem at the LF interface.

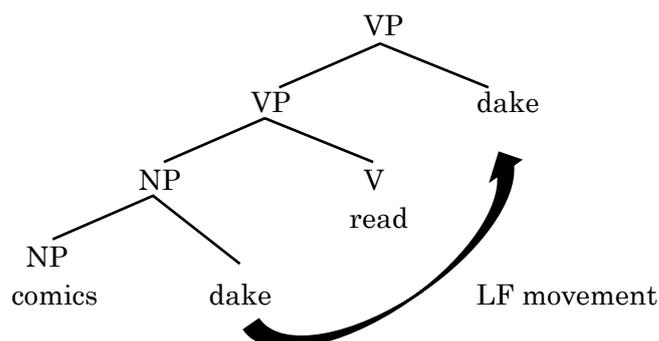
(47) The upper copy can stay at LF while the lower copy must be pronounced: → “QR”

4. Implications and Further Thoughts

Implication (I): against LF-movement analysis of *dake* ‘only’ scope domain extension³

- (48) a. John-wa [VP **manga-dake** yon]-de zenzen benkyo-si-nakatta
 John-TOP **comics-only** read] at all study-do-not-PAST
 lit. ‘John read *only* **comics** and did not study at all.’
- b. John-wa [VP **manga-o yon**]-da-*dake*-de zenzen benkyo-si-nakatta
 John-TOP **comics-ACC read**]-*only* at all study-do-not-PAST
 lit. ‘John *only* **read comics** and did not study at all.’

(Aoyagi 1998)



- According to Aoyagi (1998), *dake* ‘only’ in (48a) can take the VP scope (as well as the object scope), having the same meaning as (48b). Specifically, Aoyagi proposes an LF movement analysis of *dake*.

- This is incompatible what we proposed above.⁴

if move: pronounced upstairs and upper scope (or downstairs(?))

*pronounced downstairs and upper scope (i.e., no LF movement)

- Hoshi and Miyoshi (2007), however, convincingly argue that the scope extension of (48a) Aoyagi argues for is simply illusory.

(49) idiom-chunk test

- a. John-ga [VP hanasi-ni mizu-o sasi] ta
 John-NOM conversation-DAT water-ACC pour-PAST
 ‘John put a damper on the conversation’
- b. *John-ga [VP hanasi-ni mizu-dake(-o) sasi] ta
 John-NOM conversation-DAT water-only(-ACC) pour-PAST
 lit. ‘John put *only* a damper on the conversation’ (Hoshi and Miyoshi 2007: 40)
- c. John-ga [VP hanasi-ni mizu-o sasi]-dake sita
 John-NOM conversation-DAT water-ACC pour-only do-PAST
 ‘John *only* put a damper on the conversation’

A part of an idiom alone cannot be focused by *dake* ‘only’ as in (49b),⁵ but if LF movement of *dake* ‘only’ is allowed as Aoyagi argues, (49b) may have the idiomatic reading in the same sense (49c), which is not the case. (49b) cannot have the VP scope interpretation as in (49c): no LF movement of *dake*.

³ I owe Masahiko Takahashi for bringing this type of phenomenon to my attention.

⁴ In B&W’s term, the existence of (48b) does not block the upper scope reading of (48a).

⁵ (49b) is possible only with its literal meaning which does not make any sense.

Implication (II): Japanese “LF” wh-movement (Saito 2017)

- another case in Japanese which may support the idea that even when the upper copy is not realized phonologically because of the labeling failure, it still exists upstairs as a phonologically empty element.

(50) Japanese wh-phrases must be associated with a particle such as *ka* ‘Q’, *mo* ‘also,’ etc.
(Kuroda 1965)

- (51) a. *Taroo-wa Hanako-ga nani-o tabeta to omotteiru
Taro-TOP Hanako-NOM what-ACC ate COMP think
‘Taro thinks what Hanako ate’
- b. Taroo-wa Hanako-ga nani-o tabete-mo odoroka-nai
Taro-TOP Hanako-NOM what-ACC eat-MO be-surprized-NEG
‘Taro will not be surprised no matter what Hanako eats’
- c. Taroo-wa Hanako-ga nani-o tabeta-ka sitteiru
Taro-TOP Hanako-NOM what-ACC ate-Q know
‘Taro knows what Hanako ate’

(52) Unselective binding? (Nishigauchi 1990, *a la* Heim 1982)

(53) Wh-island effects (Nishigauchi 1990, Watanabe 1992)

- (54) a. [[Hanako-ga sono toki [[dare-ga kuru] to] itta]ka] osiete kudasai
Hanako-NOM that time who-NOM come COMP said Q teach please
‘Please tell me who Hanako said then was coming’
- b. [[Hanako-ga sono toki [[dare-ga kuru] ka] tazuneta] ka] osiete kudasai
Hanako-NOM that time who-NOM come Q asked Q teach please
- A. Please tell me if Hanako asked then who was coming
B. ?? Please tell me who Hanako asked then if she/he is coming (Saito 2017: 2)

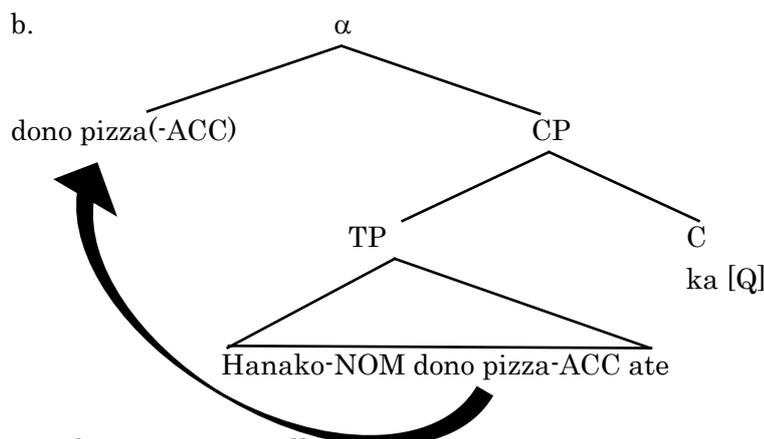
A long distance association, which is possible between *dare* ‘who’ and *ka* ‘Q’ in (54a), is blocked by the intervening *ka* in the embedded clause as in (54b): a typical wh-island effect.

(55) Saito’s (2017) proposal: “covert” movement of wh-words

a wh-phrase *dono pizza* ‘which pizza’ in (56a) covertly moves to CP as in (56b), where it c-commands and probes the relevant quantification feature on the question particle *ka*.⁶

- (56) a. Taroo-wa [[Hanako-ga dono pizza-o tabeta] ka] sitteiru
Taro-TOP Hanako-NOM which pizza-ACC ate Q know
‘Taro knows which pizza Hanako ate’

⁶ Saito (2017) assumes Bošković’s (2017) mechanism of feature valuation, which I will not recreate here. See Saito (2017) and Bošković (2017) for details.



(57) Why covert wh-movement is allowed here?

(58) Given Externalize Higher (22), repeated here as (59), there must be some reason that prevents the upper copy realization of the wh-phrase in (56a).

(59) **Proposal (I) Externalize Higher**

- a. PF parser prefers the higher copy externalization.
- b. If something “phonological” prevents the realization of the upper copy, the lower copy is pronounced.

(60) Saito’s proposal: not problematic for (59), rather an additional support for (59).⁷

- (61) a. Upper copy of *dono pizza* without ACC in (56b): labeling problem for α .
→ lower copy must be externalized: “LF wh-movement”
- b. Upper copy of *dono pizza* with ACC in (56b): no labeling problem for α .
→ upper copy must be externalized: (62)⁸

(62) Taroo-wa [dono pizza-o_i [Hanako-ga t_i tabeta] ka] sitteiru

5. Summary

(63) labeling based account for the scrambling-QR inverse correlation

- global “trans-derivational comparison” issue is gone
 - labels can be different between SM and CI
 - priority of upper copy externalization unless something phonological prevents it
- There are good reasons for lower copy realization cases (Corver and Nunes 2007) (The impossibility of) labeling at PF can also be one of them

- (64) a. any other implications in (or evidence for) the proposal that types of labels can be different at SM and CI?
- b. What can be possible labels at PF and at LF?

⁷ I thank Mamoru Saito (personal communication) for suggesting the following idea to be relevant and worth exploring.

⁸ I assume that because Japanese wh-words do not have specific quantificational force lexically, they are different from English type wh-words in that they do not implement the Q-feature sharing mechanism for labeling of the wh-question at CP.

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