Intervention tracks scope-rigidity in Japanese

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Wh-in-situ and intervention effects

(1) Hanako-ga *nani-o* yon-da-no?
Hanako-NOM what-ACC read-PAST-Q
'What did Hanako read?'

☞ *Wh*-in-situ is sensitive to **intervention effects**.

(2) a. * **Dare-mo** *nani-o* yoma-nak-atta-no?
who-MO what-ACC read-NEG-PAST-Q

b. ✓ *Nani-o* **dare-mo** ___ yoma-nak-atta-no?

what-ACC who-MO read-NEG-PAST-Q
'What did no one read?' (Tomioka, 2007, 1571–1572)

Wh-in-situ and intervention effects

Intervention effects affect regions of Rooth-Hamblin alternative computation but not (overt or covert) movement (Beck, 2006; Beck and Kim, 2006; Kotek, 2014, 2016; Kotek and Erlewine, 2016)

(3) **Beck (2006) intervention schema:**

a. ✓ [$_{CP}$ C ... *wh*]

b. * [$_{CP}$ C ... **intervener** ... *wh*]

c. ✓ [$_{CP}$ C ... *wh* **intervener** ... *t*]

What's an intervener?

☞ **Two related questions:**

- What counts as an intervener?

(4) ***Subete* 'all' is not an intervener (cf 2a):**

✓ [**Subete**-no gakusei]-ga *nani*-o yon-da-no?
all-GEN student-NOM what-ACC read-PAST-Q
'What did every student read?'

- What causes intervention?
  - Focus semantics (Beck, 2006; Beck and Kim, 2006)
  - Quantification (Beck, 1996; Mayr, 2014)
  - Anti-topic items (Grohmann, 2006)
  - Prosodic mismatch (Tomioka, 2007)

Today

☞ We consider intervener-hood and scope properties of different quantifiers in Japanese and establish the generalization in (5):

(5) **Generalization: Intervention correlates with scope-taking**
Scope-rigid DP quantifiers above an in-situ *wh* cause intervention. DP quantifiers that allow scope ambiguities with respect to negation — i.e., which can reconstruct below the *wh* — do not.

Proposal

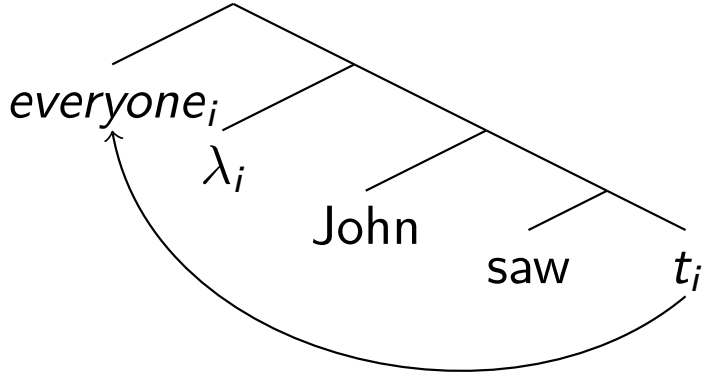
Intervention is not caused by only certain quantifiers, but rather by *any* DP in a *derived* position at LF:

(6) **The new intervention schema (Kotek, 2017)**

* LF: C ... λ ... *wh*

Heim and Kratzer (1998): **a λ-binder is introduced below the landing site of movement**, abstracting over the trace.

(7) **Predicate Abstraction:**



PA in regions of alternative computation is not well-defined (Rooth, 1985; Poesio, 1996; Novel and Romero, 2009; Shan, 2004).

Movement can't target a region where alternatives are computed.

§2 *Intervention tracks scope-rigidity*

Shibata's correlation

Quantifiers in Japanese vary in their ability to take scope under negation: only Q $>$ Neg, or Q $>$ Neg / Neg $>$ Q.

☞ Shibata (2015a) notes that the scope of different disjunctors correlates with their status as interveners.

Shibata's correlation

Two disjunctors in Japanese, *ka* and *naishi*:

(8) ***ka*-disjunction is scope-rigid; *naishi* is not:**

a. [Taro **ka** Jiro]-ga ko-**nak**-atta.
Taro or Jiro-NOM come-NEG-PAST (Shibata, 2015a:23)
'Taro or Jiro didn't come.' ✓or > not, *not > or

b. [Taro **naishi** Jiro]-ga ko-**nak**-atta.
Taro or Jiro-NOM come-NEG-PAST (Shibata, 2015a:96)
'Taro or Jiro didn't come.' ✓or > not, ✓not > or

(9) ***ka*-disjunction is an intervener; *naishi* is not:**

a. ??? [Taro **ka** Jiro]-ga *nani*-o yon-da-no?
Taro or Jiro-NOM *what*-ACC read-PAST-Q (Hoji, 1985:264)

b. ✓ [Taro **naishi** Jiro]-ga *nani*-o yon-da-no?
Taro or Jiro-NOM what-ACC read-PAST-Q
'*What* did [Taro or Jiro] read?' (Shibata, 2015a:98)

Intervention tracks scope-rigidity

☞ We show that Shibata's correlation extends to other quantificational DPs as well, supporting (5), repeated here:

(5) **Generalization: Intervention correlates with scope-taking**
Scope-rigid DP quantifiers above an in-situ *wh* cause intervention. DP quantifiers that allow scope ambiguities with respect to negation — i.e., which can reconstruct below the *wh* — do not.

Universals

(10) ***wh-mo* universal quantifier is scope-rigid; *subete* is not:**

a. **Da're**-o-**mo** tsukamae-**nak**-atta.
who-ACC-MO catch-NEG-PAST

'*pro* did not catch anyone.' ✓every > not, *not > every

b. [**Subete**-no mondai]-o toka-**nak**-atta.
all-GEN problem-ACC solve-NEG-PAST (Mogi, 2000:59)

'*pro* did not solve every problem.' ✓every > not, ✓not > every

Universals

(11) ***wh-mo* is an intervener; *subete* is not:**

a. ?? **Da're-mo**-ga *nani*-o kai-mashi-ta-ka?
who-MO-NOM what-ACC buy-POLITE-PAST-Q
Intended: 'What did everyone buy?' (Hoji, 1985:270)

b. ✓ [**Subete**-no gakusei]-ga *dono-mondai*-o toi-ta-no?
all-GEN student-NOM which-problem-ACC solve-PAST-Q
'Which problem(s) did every student solve?'

Two positions for *-dake* 'only'

(20) **-P-*dake* is scope-rigid; -*dake*-P is not:**

a. Taro-wa Hanako-to-**dake** hanashi-tei-**nai**.
Taro-TOP Hanako-with-only talk-PERF-NEG

lit. 'Taro hasn't talked only with H.' ✓only $>$ not, *not $>$ only

b. Taro-wa Hanako-**dake**-to hanashi-tei-**nai**.
Taro-TOP Hanako-only-with talk-PERF-NEG

lit. 'Taro hasn't talked with only H.' ✓only $>$ not, ✓not $>$ only

Two positions for *-dake* 'only'

(21) **-P-*dake* is an intervener; -*dake*-P is not:**

a. ??? Taro-wa Hanako-to-**dake** *nani*-o tabe-ta-no?
Taro-TOP Hanako-with-only what-ACC eat-PAST-Q

b. ✓ Taro-wa Hanako-**dake**-to *nani*-o tabe-ta-no?
Taro-TOP Hanako-only-with what-ACC eat-PAST-Q
literally 'Taro ate *what* (only) with (only) Hanako?'

Summary

	disjunction		universal		also	even	NPI
	ka	*naishi*	*wh-mo*	*subete*	*-mo*	*-sae*	*wh-mo*
scope-rigid?	◯ (8a)	× (8b)	◯ (10a)	× (10b)	◯ (12)	◯ (12)	◯*
intervener?	◯ (9a)	× (9b)	◯ (11a)	× (11b)	◯ (13)	◯ (14)	◯ (2b)

	NPI only	indefinite	modified	only	
	-shika	*wh-ka*	numerals	-P-*dake*	*-dake*-P
scope-rigid?	◯*	◯ (16)	× (18)	◯ (20a)	× (20b)
intervener?	◯ (15)	◯ (17)	× (19)	◯ (21a)	× (21b)

* See Kataoka (2006) and Shimoyama (2011) on the rigid wide scope of so-called NPIs.

§3 Analysis

Analysis

1. All arguments evacuate *v*P in Japanese (Shibata, 2015a,b), moving out of NegP (if present). We adopt the *v*P-internal subject hypothesis for Japanese (see e.g. Fukui, 1986; Kitagawa, 1986; Kuroda, 1988).
2. Some (but not all) quantifiers can reconstruct into base positions.
3. Intervention reflects the uninterpretability of (6) at LF:

(6) **Kotek (2017) intervention schema**

* LF: C ... **λ** ... *wh*

The logical problem caused by (6) has been discussed by Rooth (1985); Poesio (1996); Novel and Romero (2009); Shan (2004). Kotek (2017) proposes that this is the source of intervention effects. A quantifier moved above *wh* could lead to (6), but quantifiers that can reconstruct into *v*P can avoid (6) at LF.

Analysis

(22) **Scope-rigidity in Japanese (Shibata, 2015a,b):**

a. All arguments move out of vP:

$[_{CP}$ ... DP ... $[_{vP}$ ... t ... V]]

b. Interpretation in surface position ⇒ wide scope over Neg:

LF: $[_{CP}$ ... DP $\boldsymbol{\lambda x}$ ... $[_{NegP}$ $[_{vP}$ ... $\boldsymbol{x}$ ... V] Neg]] DP > Neg

c. Some (not all) quants. reconstruct into vP ⇒ narrow scope:

LF: $[_{CP}$ ... $[_{NegP}$ $[_{vP}$ ... DP ... V] Neg]] Neg > DP

Analysis

(23) **Deriving the generalization (5):**

a. Potential intervener (DP) above *wh*:

$[_{CP}\ C\ \ldots\ DP\ \ldots\ wh\ \ldots\ [_{vP}\ \ldots\ t\ \ldots\ V\ ]\ ]$

b. *LF interpretation in surface position lead to intervention!*

* LF: $[_{CP}\ C\ \ldots\ DP\ \boldsymbol{\lambda x}\ \ldots\ wh\ \ldots\ [_{vP}\ \ldots\ \boldsymbol{x}\ \ldots\ V\ ]\ ]$

c. Reconstruction avoids the intervention configuration:

✓ LF: $[_{CP}\ C\ \ldots\ wh\ \ldots\ [_{vP}\ \ldots\ DP\ \ldots\ V\ ]\ ]$

d. Scrambling *wh* above also avoids intervention:

✓ LF: $[_{CP}\ C\ \ldots\ wh\ \lambda y\ \ldots\ DP\ \boldsymbol{\lambda x}\ \ldots\ y\ \ldots\ [_{vP}\ \ldots\ \boldsymbol{x}\ \ldots\ V\ ]\ ]$

Predictions

This analysis makes a number of predictions:

- A "non-intervening" quantifier is interpreted as reconstructed in *v*P (or otherwise moved out of the way).
- Quantifiers that are base-generated high and can be interpreted in their base positions are not interveners.

Non-intervention through reconstruction

☞ A "non-intervening" quantifier is interpreted as reconstructed in *v*P.

(24) Taro-wa Hanako-**dake**-to *nani*-o tabe-**nai**-no?
Taro-TOP Hanako-only-with what-ACC eat-NEG-Q
literally 'Taro **doesn't** eat what with **only** Hanako?'

a. * 'What does Taro only not eat with Hanako$_F$?' only $>$ not
Answer: Squid ink pasta (because he gets embarrassed)

b. ? 'What does Taro not eat with only Hanako$_F$?' not $>$ only
Answer: Dimsum (because it's better with more people)

Non-intervention through reconstruction

Consider also the collective vs distributive event interpretation of subjects:

(25) [Gakusei **zen'in**]-ga LGB-o ka-tta.
student all-NOM LGB-ACC buy-PAST

a. 'All the students together bought a copy of LGB.' collective

b. 'All the students each bought a copy of LGB.' distributive

(26) [Gakusei **zen'in**]-ga *dono hon*-o ka-tta-no?
student all-NOM which book-ACC buy-PAST-Q

a. ✓ 'Which book(s) did the students all buy together?'
collective

b. * 'Which book(s) did the students all individually buy?'
(and they each bought other books too) distributive

Non-intervention by scoping out

☞ A "non-intervening" quantifier could "scope out" of the question.

(26) also has a *pair-list* reading, made salient by embedding:

(27) Sensei-wa [[gakusei **zen'in**]-ga *dono hon*-o ka-tta-ka] shiri-tai.
teacher-TOP student all-NOM which book-ACC buy-PAST-Q know-want

a. ✓ 'The teacher wants to know [which book(s) the students all bought together].' collective

b. * 'The teacher wants to know [which book(s) the students all bought individually].' distributive

c. ✓ 'The teacher wants to know [for each student$_i$, which book(s) they$_i$ bought].' pair-list

The pair-list reading can be derived by scoping the universal quantifier out of the question (see e.g. Karttunen and Peters, 1980; Comorovski, 1989, 1996).

Base-generated quantifiers

What we have seen so far is compatible with the interpretation of *wh*-in-situ being interrupted by (a) *any* quantification or (b) λ-binders of quantifiers in *derived* positions.

☞ Quantifiers that are base-generated high and can be interpreted in their base positions are not interveners.

Base-generated quantifiers

(28) **Temporal adjuncts base-generated high do not cause intervention:**

✓ Taro-wa kayoubi-ni-**dake** *nani*-o tabe-ru-no?
Taro-TOP Tuesday-on-ONLY what-ACC eat-NONPAST-Q
'What does Taro eat only on Tuesdays?'

Recall that -P-*dake* was an intervener above (21). *-dake* in (28) is on a temporal modifier which is base-generated high and can be interpreted in-situ.

Base-generated quantifiers

Hagstrom (1998, p. 54) similarly shows that *ka*-disjunction of locative adjuncts do not interene, even for speakers for whom *ka*-disjunction of arguments cause intervention.

(29) **Locative adjuncts base-generated high do not cause intervention:**

✓ John-ga [ronbun **ka** kougi]-de *dare*-o hihan-shi-ta no?
John-NOM article or lecture-in who-ACC criticize-do-PAST Q
'Who did John criticize either in an article or a lecture?'

§4 Conclusion

Conclusion

1. Intervention effects track the ability of quantifiers to reconstruct:

(5) **Generalization: Intervention correlates with scope-taking**
Scope-rigid DP quantifiers above an in-situ *wh* cause intervention. DP quantifiers that allow scope ambiguities with respect to negation — i.e., which can reconstruct below the *wh* — do not.

Conclusion

2. Intervention reflects the LF configuration in (6):

   (6) * LF: C ... λ ... *wh*

   Scope-rigid interveners in a derived position above the *wh* necessarily lead to the LF configuration in (6).

3. (6) can be avoided by...
   - scrambling the *wh* above the quantifier;
   - reconstructing the quantifier below *wh*; or
   - scoping the quantifier out of the question

   ...for items that allow reconstruction/quantifying-in.

   Together with Shibata's proposal for DP scope in Japanese, this derives the generalization in (5).

Conclusion

4. The idea that an LF configuration like (6) causes intervention is an important aspect of proposals such as Beck (2006).

(6) * LF: C ... **intervener** ... *wh*

However, we have seen that the LF configuration (6) leads to intervention *with any quantifier in a derived position* (Kotek, 2017).

Problematic for all previous accounts of intervention effects, which assume that interveners are a *proper subset* of quantifiers.

Thank you!

Thank you! Questions?

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