Published in *Language and Linguistics* 18(2)
Draft as of 3/6/2016

Is it Syntactic or Pragmatic? A Hybrid Analysis for LF-intervention Effects*

Ryoichiro Kobayashi
Sophia University/JSPS

Abstract:

The main aim of this study is to reconsider Tomioka's (2007) pragmatic account of the LF-intervention effects (IE), and to claim that Polarity Sensitive Items (PSIs) are genuine syntactic interveners. I will examine the parallelism among PSIs in IE configurations, which is distinct from other interveners, and further claim that the study of IE should not be monolithic, but hybrid: Syntactic LF-interveners (PSIs), blocking scopal interactions/Pragmatic interveners, causing illegal information structures. The predictions will be borne out that PSIs actually cause IE in other contexts as well, which pragmatic accounts cannot explain (Funakoshi & Takahashi 2014). Such hybrid perspectives bring back enormous findings on IE (e.g. LF wh-movement) to the field of syntax, without relegating all of them to pragmatics.

Key words: LF-intervention effects, polarity sensitive items, wh-movement

1. Introduction

It has been first pointed out by Hoji (1985, 1986), that sentences become unacceptable when some quantificational expressions precede *wh*-phrases in interrogatives. Since then, many studies have concluded that the quantificational expressions serve as interveners that block covert movement of *wh*-phrases in LF, which results in illegitimate LF representations. This phenomenon is therefore called *LF-intervention effects*.

(1) a. ***Daremo*** nani-o yom-ana-katta no
anyone what-ACC read-NEG-PAST Q
'What did no one read?'

* I would especially thank Takaomi Kato and Toru Ishii for their helpful comments. Thanks also go to the anonymous reviewers, the editor of the *Language and Linguistics*, as well as the audience at the 149th meeting of the Linguistic Society of Japan in Ehime University. Usual disclaimers apply. The author is supported by Grant-in-Aid for JSPS Fellows 16J00637.

b. ***John-sika** nani-o yom-ana-katta no
J.-except what-ACC read-NEG-PAST Q
'What did no one but John read?' (adapted from Tomioka 2007:1571)

c. *?**Dareka-ga** nani-o motteki-ta no
someone-NOM what-ACC bring-PAST Q
'What did someone bring?'

d. *?**Daremo-ga** dare-o syootaisi-ta no
everyone-NOM who- ACC invite-PAST Q
'Who did everyone invite?' (Hoji 1986:88)

As the name shows, the examples become acceptable when *wh*-phrases are overtly scrambled to the front, which enables them to take wide scope over the interveners. This cancellation by scrambling has been analyzed as a result of a sort of a pre-emptive movement, which is applied before *Spell Out*; hence a movement in the Narrow Syntax. Therefore, the *wh*-phrases do not need to cross over the interveners in LF, as in (2).

(2) a. Nani-o$_i$ **daremo** t_i yom-ana-katta-no
'What did no one read?' (=1a)

b. Nani-o$_i$ **John-sika** t_i yom-ana-katta-no
'What did no one but John read?' (=1b) (Tomioka 2007:1572)

c. Nani-o$_i$ **dareka-ga** t_i motteki-ta no
'What did someone bring?' (=1c)

d. Dare-o$_i$ **daremo-ga** t_i syootaisi-ta no
'Who did everyone invite?' (=1d) (Hoji 1986:88)

Scrambling of *wh*-phrases over interveners makes sentences acceptable, which suggests that intervention effects are irrelevant for surface movement.

Although it has long been assumed that the intervention effects are syntactic in nature, the LF accounts of the intervention effects have several problems (Tomioka 2007). First, the degree of acceptability varies dramatically among native speakers, depending on each intervener. Other than NPIs that are the strongest interveners, there is not any agreement on acceptability

among native speakers. Second, it is difficult to classify the interveners into one natural class. Although Hoji (1985, 1986) first analyzed that the quantificational NPs yield the relevant intervention effects, it has been pointed out that there are interveners that are non-quantificational such as *NP-mo* 'NP-also' and *NP-ga* 'NP-nom,' as in (3) and (4).

(3) *NP-mo*:

a. ??**John-mo** nani-o yon-da no
J.-also what-ACC read-PAST Q
'What did also John read?'

b. Nani-o$_i$ **John-mo** t_i yon-da no

(4) *Nominative-marked NPs*:

a. ??**John-ga** nani-o yon-da no
J.-NOM what-ACC read-PAST Q
'What did John read?'

b. Nani-o$_i$ **John-ga** t_i yon-da no

(Tomioka 2007:1574)

On the other hand, not all the quantificational expressions are qualified as interveners: *Subete-no-/zenbu-no-NP* 'all the NP' and *hotondo-no-NP* 'most NP' do not cause the relevant effects, as in (5).

(5) Quantificational expressions without LF-intervention effects:

a. Subete/zenbu-no-hito-ga nani-o yon-da no
all-Gen-people-NOM what-ACC read-PAST Q
'What did all the people read?'

b. Hotondo-no-hito-ga nani-o yon-da no
most-Gen-people-NOM what-ACC read-PAST Q
'What did most people read?'

Third, some of the interveners are deactivated in embedded contexts, as illustrated in (6).

Considering that an intervener c-commanding a *wh*-phrase creates illegal LF configurations, it is not obvious why the sentences become acceptable in (6).

(6) The interveners in the embedded context:

a. Kimi-wa [$_{CP}$ **daremo-ga** nani-o yon-da to] omottei-ru no
you-TOP **everyone-NOM** what-ACC read-PAST that think-PRES Q
'What do you think that everyone read?'

b. Kimi-wa [$_{CP}$ **John-mo** nani-o yon-da to] omottei-ru no
you-TOP **J.-also** what-ACC read-PAST that think-PRES Q
'What do you think that also John read?'

(Tomioka 2007:1573-1575)

Given these deficits of the LF/syntactic accounts of LF-intervention effects, Tomioka (2007) argues that any explanation that is based on the structural properties at LF must provide answers for the following puzzles of the intervention effects summarized in (7).

(7) Problems of LF accounts of the intervention effects:[1]

a. The fragility of native speakers' judgment.

b. The apparent absence of the attribute that separate possible interveners from non-interveners (The difference among interveners).

c. The effects of embedding: *Cancellation Effects*.

(adapted from Tomioka 2007:1575)

In order to give a complete account of the puzzles in (7), Tomioka (2007) argues that LF-intervention effects are actually caused by a mismatch between syntactic structure and information structure. In Section 2, we are going to briefly review his pragmatic accounts of the intervention effects, which will be critically examined in what follows.

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[1] Tomioka (2007:1575) originally listed '*the effects of scrambling*' as one of the puzzles that LF accounts must account for. However, under our proposals, there is nothing special to say about this: PSIs do not intervene once *wh*-phrases are overtly scrambled to the front, period.

2. Pragmatic Accounts for the Intervention Effects

Tominoka (2007, 2009) analyzes that the relevant intervention effects are caused by a mismatch between syntactic structure and information structure; hence the nature of so-called LF-intervention effects is actually pragmatic. Interveners are actually *Anti-Topic Items* (ATIs), which cannot be topicalized: LF-intervention effects, under Tomioka's pragmatic account, occur when ATIs are in the topic portion of sentences. ATIs are incompatible with the topic marker *-wa*, as illustrated in (8) below. The prediction is borne out that the quantificational expressions that do not trigger the intervention effects are compatible with the topic marker as in (8f) and (8g).

(8) Interveners as ATIs in Japanese:

a. ***daremo**-wa
anyone-TOP

b. ***daremo**-wa
everyone-TOP

c. ***dareka**-wa
someone-TOP

d. ***John-mo**-wa
J.-also-TOP

e. subete-no-gakusei-wa
all-Gen-student-TOP

f. hotondo-no-gakusei-wa
most-Gen-student-TOP

(Tomioka 2007:1576-1577)

Following Krifka (2001) and others, Tomioka assumes that the non-*wh* portion of interrogative sentences is *discourse-old* (or *given*), while the *wh* part itself is *a focus* of sentences. As is widely alleged, *a topic* is what has been talked about in the context, hence classified as *discourse-old*, or *given* information. Tomioka further distinguishes the *given* part of the sen-

tence into two parts: *a link* and *a tail* (*Information Packaging Theory* of Vallduví 1992, 1995). The former connects an utterance with the previous contexts by setting up a theme, which corresponds to *the topic* of a sentence. The rest of the non-focalized part is called *a tail*, which is usually prosodically reduced.

(9) Vallduví's Information Packaging Theory:
  a. *a focus*: *wh* portion of a sentence
  b. *a ground*: non-*wh* portion of a sentence
    (i) *a link*: a topic that connects an utterance with the previous context
    (ii) *a tail*: the non-*link* part of *the ground*

(adapted from Vallduví 1992:330, 1995:123-126)

Under Tomioka's pragmatic account of the intervention effects, ATIs in *wh*-interrogative sentences must be in *a tail* part of *a ground* portion of sentences, since ATIs are incompatible with *a topic*. Therefore, sentences become unacceptable when ATIs are in the domain of either *a focus* or *a link* part of *a ground*.

2.1 Cancellation Effects by Scrambling

A sentence can be rescued in LF-intervention effects either by (i) scrambling *wh*-phrases to the front, or (ii) putting the whole *wh*-interrogatives in embedded contexts. Tomioka (2007) claims, under his pragmatic account of the intervention effects, that in both cases, the intervening ATIs are placed in *a tail* portion of sentences where they can successfully be detopicalized. First, scrambling a *wh*-phrase to the front makes the domain on its right be *a tail* of *a ground* (Nagahara 1994), due to the following constraints concerning *focus/ground* contrasts in Japanese phrasal phonology, as in (10).

(10) Two constraints on Japanese phrasal phonology (Nagahara 1994:42):
  a. FOCUS-LEFT-EDGE:
    A focused constituent must be at the left edge of an intermediate phrase.
  b. FOCUS-TO-END:

Materials on the right of a focused constituent are prosodically reduced.

Ishihara (2002), Kitagawa (2005) among others have analyzed that Japanese *wh*-interrogative sentences exhibit *Focus Intonation Pattern* (FIP), in which post focal (that is, *wh* itself) reduction in the F^0 peaks continues until the end of the domain of the *wh*-scope (where a question particle *ka/no* usually appears). After preposing *wh*-phrases, the intervening ATIs will be in the prosodically reduced domain due to FIP; hence *a tail* of *a ground* portion in the information structure.

(11) a. Syntactic structure: ... $[\underset{\underset{|}{H^* L}}{\text{Wh}}]_i$ [... t_i ...]

b. Phonological phrasing ...[[Wh] .....]

↑

This part is prosodically reduced; hence *a tail* (detopicalized)

(Tomioka 2007:1579)

The structure in narrow syntax (11a) is mapped onto the phonological component (11b), where the domain containing interveners is strongly deaccented due to FIP. Intervention effects therefore are canceled by scrambling *wh*-phrases, placing ATIs in deaccented/detopicalized portion of sentences.

2.2 Root-Embedded Contrasts

As listed in (7), it is particularly problematic for the LF/syntactic accounts of LF-intervention effects embedded contexts cause cancellation effects in contrast to the root contexts. If interveners that c-command *wh*-phrases in interrogatives create illegal LF configurations, then sentences in (12) should also be unacceptable.

(12) The interveners in the embedded context (=6):

a. Kimi-wa [$_{CP}$ **daremo-ga** nani-o yon-da to] omottei-ru no
you-TOP **everyone-NOM** what-ACC read-PAST that think-PRES Q
'What do you think that everyone read?'

b. Kimi-wa [$_{CP}$ **John-mo** nani-o yon-da to] omottei-ru no
you-TOP **John-also** what-ACC read-PAST that think-PRES Q
'What do you think that also John read?'

(adapted from Tomioka 2007:1573-1575)

Indeed, as Kuno (1973), Kuroda (1988, 1992) and others have discussed, in Japanese, topic-marking shows some root-embedded contrasts as listed in (13), which according to Tomioka (2007), are the source of the cancellation effects in (12).

(13) Root-embedded contrast in topic-marking:
a. Matrix subjects tend to be default topics.
b. If something other than the matrix subject is the topic, it linearly precedes the subject. If it is left in situ, it gets the contrastive interpretation.
c. Multiple topics are not totally prohibited but rather uncommon.
d. Embedded subjects are not topic marked.

(Tomioka 2007:1581)

Since matrix subjects tend to be default topics, ATIs in the embedded context are interpreted as a part of the *tail* portion of the sentences. In Japanese, topic-marked subjects are more restricted in embedded contexts, which means that embedded subjects can be placed inside the *tail* portion without any structural configurations such as scrambling.

2.3 Interim Conclusion

Tomioka's pragmatic accounts of LF-intervention effects seem successful in providing answers to the following problems of syntactic/LF accounts (7), repeated as (14).

(14) Problems of LF accounts of the intervention effects (=7):
a. The fragility of native speakers' judgment.
b. The apparent absence of the attribute that separate possible interveners from non-interveners (The difference among interveners).

c. The effects of embedding: Cancellation Effects.

(adapted from Tomioka 2007:1575)

The fragility of native speakers' judgment (14a) can be explained since what goes wrong with the word order *Interveners* > *Wh* in interrogative sentences is essentially pragmatic. It also provides a way to form a natural class of interveners, which is *incompatible with being topic*. Sentences become more acceptable when the interveners and *wh*-phrases are in the embedded contexts because of the root-embedded contrast of topic-marking in Japanese.

Tomioka therefore concludes that LF-intervention effects no longer serve as one of the strongest arguments for the existence of LF *wh*-movement in Japanese (Nishigauchi 1990, Watanabe 1992 to note a few). Although Tomioka's pragmatic account seems successful in explaining the nature of LF-intervention effects, there are some residual problems: (i) Why NPIs act as the strongest interveners that do not allow any individual variation in the degree of acceptability; and (ii) why the intervention effects of NPIs can not be cancelled even when they are in the embedded contexts. In the next section, we are going to look at each problem. I propose, following Kim (2002) and Beck (2006) that the intervention effects follow from focus interpretation: ATIs bear weak focus that can be cancelled either by embedded in the deaccented domain or by in the embedded clause interpreted as given; on the other hand, syntactic interveners PSIs that bear strong focus (or [+F] feature) in Narrow Syntax.

3. Problems of Pragmatic Accounts of LF-intervention effects

Given the discussion in Section 2, here I list some of the problems, which pragmatic accounts of LF-intervention effects must provide explanations for:

(15) Problems with the pragmatic accounts of LF-intervention effects (to be revised):
   a. Pragmatic accounts fail to explain why NPIs are the strongest interveners.
   b. Pragmatic accounts have no explanation for the lack of fragility in judgment of LF-intervention effects with NPIs among native speakers.

In this section, we will address these issues, and see how an alternative can better account for

LF-intervention effects. We start by briefly reviewing Tomioka's (2007) pragmatic accounts for the special status of NPIs.

3.1 Why are NPIs Different from the Other Interveners?:

It is widely accepted that NPIs show the strongest intervention effects when they are in the following configuration.

(16) *NPIs...WH...Q?

Although there is fragility in the degree of acceptability in LF-intervention effects among each individual/intervener, NPIs are exceptions (Tomioka 2007). Furthermore, NPIs are the only interveners that can not be rescued even when they are put in the embedded contexts as in (17) through (19) below.

(17) *-sika* 'except'

a. ***Taro-sika** nani-o tabe-na-katta no?
T.-except what-ACC eat-NEG-PAST Q
'What did only Taro eat?'

b. *Scrambled*: Nani-o_i **Taro-sika** t_i tabe-na-katta no?

c. *Embedded*: *Hanako-wa [**Taro-sika** nani-o tabe-na-katta to]
H.-TOP T.-except what-ACC eat-NEG-PAST that
omottei-ru no
think-PRES Q
'What does Hanako think only Taro ate?'

(18) *daremo* 'anyone'

a. ***Dare-mo** nani-o tabe-nak-katta no?
anyone what-ACC eat-NEG-PAST Q
'What didn't anyone eat?'

b. *Scrambled*: Nani-o_i **dare-mo** t_i tabe-nak-katta-no?

c. *Embedded*: *Hanako-wa [**daremo** nani-o tabe-na-katta to]
H.- TOP anyone what-ACC eat-neg-PAST that
omottei-ru no
think-PRES Q
'What does Hanako think nobody ate?'

(19) *nanimo* 'anything'

a. ***Nani-mo** dare-o yorokob-ase-nak-katta no?
anything who-ACC delight-make-NEG-PAST Q
'Who didn't anything delight?'

b. *Scrambled*: Dare-o$_i$ **nani-mo** t_i yorokob-ase-nak-katta-no?

c. *Embedded*: *Hanako-wa [**nani-mo** dare-o yorokob-ase-na-katta to]
H.-TOP anything who-ACC delight-make-NEG-PAST that
omottei-ru no
think-PRES Q
'Who does Hanako think nothing delighted?

Under the pragmatic accounts, this peculiar behavior of NPIs, which is quite different from the other ATI-interveners, can be attributed to the fact that NPIs need negative licensors. Following Hirotani (2004), Tomioka assumes that there is a tendency in phonological phrasing that puts NPIs in the same intermediate phrase with their licensors. As in (20), in which a *wh*-phrase is focused, the intermediate phrase boundary exists immediately before *wh*-phrase itself, which separates the NPI from its licensor beyond the intermediate phonological phrase boundary.

(20) ...NPI... [$_i$ [WH]$_F$ $^{H\ *L}$ ...NEG...Q]...

Tomioka suggested that a constraint like (20) seems to at work for NPIs, and this makes embedded examples in (17c), (18c) and (19c) unacceptable. Therefore, NPIs in sentences (17a), (18a) and (19a) violate an extra phonological constraint in addition to failing to be in the

ground portion of the sentences, which makes them worse than the other interveners (Tomioka 2007). However, it is undesirable to assume an additional and ad hoc PF constraint for NPIs in order just to overcome problems in (15), since the licensing of NPIs has been empirically shown and long been assumed to be an LF phenomenon (Kato 1994, 2000) in the literature. In what follows, we will see how an alternative can better capture the special status of NPIs among the interveners.

3.2 The Parallelisms among PSIs in LF-intervention Effects:

Along with NPIs, here I want to emphasize that the other Polarity Sensitive Items (PSIs), Affirmative Polarity Items (Hasegawa 1991) and Bipolar Items (Kuno 2008, Watanabe 2013) also show the intervention effects when they c-command/precede *wh*-phrases in interrogative sentences. As illustrated in (27) through (30), they lack cancellation effects even in the embedded contexts, while they become acceptable with scrambling. Before going into details, the basic properties of APIs and BPIs are briefly reviewed below: Affirmative (or Positive) Polarity Items (APIs) must not in the scope of negation in LF, unless they are embedded in interrogative or conditional sentences (Hasegawa 1991, Watanabe 2013), while Bipolar Items (BPIs) create illegal LF configurations either in the negative or affirmative contexts since, as the name shows, BPIs have both the characteristics of negative and affirmative polarity items (Kuno 2008, Watanabe 2013).

(21) Affirmative Polarity Items:

a. **Dareka** ki-ta
someone come-PAST
'Someone came.'

b. John-ga **nanika** kat-ta
John-NOM **something** buy-PAST
'John bought something.'

c. **Dareka** ko-na-katta (∃ >¬/*¬> ∃)
someone come-NEG-PAST
'Someone didn't come/*No one came'

d. John-ga **nanika** kaw-ana-katta (∃>¬/*¬> ∃)
John-NOM **something** buy-NEG-PAST
'John didn't buy something/*anything'

(Hasegawa 1991:271)[2]

(22) Bipolar Items (NP+case marker+WH-KA):[3]

a. *Sono purojeuto-wa **seika-o** **nani-ka** age-ta

[2] As one of the anonymous reviewers pointed out to me that Hasegawa (1991) in her original work explicitly denies that the readings in (21c/d) are possible. However, I follow Goro's observations that APIs can co-occur with negation. I believe that this discrepancy is due to some dialectal variation. Given that many of my consultants answered that such sentences are acceptable or marginally acceptable at least, I conclude that it does not affect the discussions here.

[3] Here I follow Watanabe's (2013) notation and leave aside the issue whether *wh-ka* in BPIs are the same elements as *wh-ka* (*dareka/nanika* 'something/someone') in APIs. Note further, that there are some cases where BPIs are licensed even in the affirmative contexts. Watanabe (2013) mentions that the acceptability variation in (22), (23), and (i), (ii) suggests that the more abstract the head noun is, the more degraded the examples become in the affirmative context.

(i) Tomodachi-wa Hanako-ni **purezento-o** **nani-ka** mottekite-kure-ta
friend-TOP H.-DAT **present-ACC** **what-KA** bring-ben-PAST
'My friend brought some present for Hanako.'

(ii) John-wa niwa-ni **hana-o** **nani-ka** ue-ta
J.-TOP garden-loc **flower-ACC** **what-KA** plant-PAST
'John planted some flower(s) in the garden.'

(Watanabe 2007:191)

Watanabe (2013) assumes that this positive polar nature of the indeterminate-based BPIs may come from the affirmative polarity of the existential quantification used, but I leave this issue open for the limitation of space.

that project-TOP **achievement-ACC** **what-KA** raise-PAST
'That project produced some results.'

b. *Sono purojekuto-wa **seika-o** **nani-ka** age-na-katta
that project-TOP **achievement-ACC** **what-KA** raise-NEG-PAST
'That project didn't produce some results.'

c. Moshi sono purojekuto-ga **seika-o** **nani-ka** age-tara,
if that project-NOM **achievement-ACC** **what-KA** raise-COND
houkoku-su-ru yo
report-do-PRES PRT
'I'll report it to you if that project produces some/any results.'

d. Sono purojekuto-wa **seika-o** **nani-ka** age-ta no?
that project-TOP **achievement-ACC** **what-KA** raise-PAST Q
'Did that project produce any results?'

(Watanabe 2013:191)

(23) Bipolar Items (Minimizers: *DEMO*):

a. *John-wa **hon-o** **is-satsu-demo** yon-da
J.-TOP **book-ACC** **1-cl-DEMO** read-PAST
'John read even one book.'

b. *John-wa **hon-o** **is-satsu-demo** yoma-na-katta
J.-TOP **book-ACC** **1-cl-DEMO** read-NEG-PAST
'John didn't read even one book.'

c. Moshi John-ga **hon-o** **is-satsu-demo** yon-dara, homete-agete-hoshi-i
if J.-NOM **book-ACC** **1-cl-DEMO** read-COND praise-BEN-want-PRES
'If John reads even a single book, I want you to encourage him.'

d. John-wa **hon-o** **is-satsu-demo** yon-da no?
J.-TOP **book-ACC** **1-cl-DEMO** read-PAST Q
'Did John read even a single book?'

(Watanabe 2013:192-193)

APIs and BPIs also show LF-intervention effects when they c-command and precede

wh-phrases in the interrogative sentences.

(24) APIs: *dareka/nanika*

a. ***Dareka*** nani-o tabe-ta no
who-KA what-ACC eat-PAST Q
'What did someone eat?'

b. ***Nanika*** doko-ni kakure-ta no
what-KA where-DAT hide-PAST Q
'Where did something hide?'

(25) BPIs: An Abstract NP+case marker+WH-ka/Minimizers

a. ***Hito-ga*** ***dareka*** nani-o yon-da no
human-NOM **who-KA** what-ACC read-PAST Q
'What did some person read?'

b. ***Hito-ga*** ***hito-ri-demo*** nani-o yon-da no
human-NOM **one-cl-DEMO** what-ACC read-PAST Q
'What did even one person read?'

Given the above observations, we can now modify (16), in which the interveners block *wh*-operators from taking wide scope in LF, creating illegal LF representation.

(26) LF-intervention effects with PSIs (NPIs/APIs/BPIs):

a. *NPIs*: *NPI...WH...Q? (=(16))
b. *APIs*: *API...WH...Q?
c. *BPIs*: *BPI...WH...Q?

Now I argue that the schema in (26) can be reduced to a more general formulation following Kim (2002) and Beck (2006), as in (27).

(27) *[Q_i [...[FocP [... wh_i...]]]] (order irrelevant: adapted from Kim 2002)

It indicates that a focused phrase, that is a PSI in (26), may not intervene between a *wh*-phrase and its licensing complementizer (Beck 2006:11). Along with NPIs and other interveners that cause LF-intervention effects, the unacceptable examples in (24) with APIs, and (25) with BPIs become much more acceptable when the *wh*-phrases are scrambled to the front. Interestingly, these examples also cannot be rescued even when they are put in the embedded context in parallel with NPIs, unlike the other pragmatic ATI-interveners.

(28) APIs: *dareka*

a. ***Dareka** nani-o tabe-ta no
someone what-ACC eat-PAST Q
'What did someone eat?'

b. *Scrambled*: Nani-o$_i$ **dareka** t_i tabe-ta no

c. *Embedded*: *Hanako-wa [**dareka** nani-o tabe-ta to] omotte-iru
H.-TOP **someone** what-ACC eat-PAST that think-PRES
'Hanako knows what someone ate.'

(29) APIs: *nanika*

a. ***Nanika** doko-ni kakure-ta no
something where-DAT hide-PAST Q
'Where did something hide?'

b. *Scrambled*: Doko-ni$_i$ **nanika** t_i kakure-ta no

c. *Embedded*: *Hanako-wa [**nanika** doko-ni kakure-ta to] omotte-iru
H.-TOP **something** where-DAT hide-PAST that think-PRES
'Hanako knows where something hid.'

(30) BPIs: *NP+case marker+WH-KA*

a. ***Hito-ga dare-ka** nani-o yon-da no
human-NOM who-KA what-ACC call-PAST Q
'What did some person read?'

b. *Scrambled*: Nani-o$_i$ **hito-ga dareka** t_i yon-da no

c. *Embedded*: *Hanako-wa [**hito-ga** **dareka** nani-o yon-da to]

H.-TOP **human-NOM who-KA** what-ACC read-PAST that
omotte-iru no
think-PRES Q
'Does Hanako know what some person read?'

(31) BPIs: Minimizers (*DEMO*)

a. ***Hito-ga** **hito-ri-demo** nani-o yon-da no
person-NOM **1-cl-DEMO** what-ACC call-PAST Q
'What did even one person read?'

b. *Scrambled*: Nani-o$_i$ **hito-ga hito-ri-demo** t_i yon-da no

c. *Embedded*: *Hanako-wa [**hito-ga** **hito-ri-demo** nani-o yon-da to]
H.-TOP **human-NOM 1-cl-DEMO** what-ACC read-PAST that
omotte-iru no
know-PRES Q
'Does Hanako know what even one person read?'

In (29) through (31), scrambled examples (29b), (30b) and (31b) become acceptable, while there is no cancellation effects in embedded contexts, as in (28c), (29c) and (30c). This correlates with the data of NPIs in (17) through (19), which is summarized in (32) below.

(32) Polarity sensitive items in the configuration [*NPI/API/BPI...WH...Q]:

	NPIs	APIs	BPIs	ATIs/Pragmatic interveners
IE (Acceptability)	*	*	*	?~???
Scrambled	✔	✔	✔	✔
Embedded	*	*	*	✔

These observations raise problems for Tomioka's pragmatic accounts of the intervention effects, since his analysis fails to capture the above parallelism among PSIs. If, as Tomioka claims, it is true that NPIs are the strongest interveners and there is no cancellation effects even when they are put in the embedded contexts because they are not in the same intermediate phonological phrase with the licensors (NEG), it is not clear why the other PSIs, APIs and BPIs, also lack cancellation effects in embedded contexts. If the lack of cancellation effects with

NPIs in embedded contexts is due to the proposed phonological constraint in (20), it is not clear why the other PSIs that have nothing to do with (20) also lack cancellation effects even when they are embedded.

Here I claim that the interveners should be divided into two different sorts: *Pragmatic Anti Topic Items*, and *Syntactic Polarity Sensitive Items*. I further propose that it is a degree of focus that divides the two: The strength of focus that an element bears is at stake. Although, a variety of items: quantificational expressions, NPIs, and other non-quantificational elements, which more or less bear focus make sentences unacceptable in the following configuration (27): $^{?\sim???/}$*[Q_i [...[FocP [... *wh*$_i$...]]]]. I would say that the parallelism between pragmatic ATIs and syntactic PSIs is due to the fact that they both bear stress, but the former with weaker focus, while the latter with stronger focus that cannot be cancelled. While awkwardness in the sentences ATIs is pragmatic in nature, the unacceptability of the configuration with PSIs should be regarded as purely syntactic. Given (32) and considering the differences in the distribution of ATIs and PSIs in (31), I propose *a Hybrid Analysis for LF-intervention Effects* (33).

(33) **Proposals:** ***A Hybrid Analysis for LF-intervention Effects***

a. Polarity Sensitive Items are genuine LF-interveners, which block c-commanded *wh*-phrases to take wider scope in the following configuration; *PSIs...WH...Q?

b. What has been considered as 'LF-interveners' must be classified into genuine LF-interveners (PSIs), which are fully syntactic in nature, and the pragmatic ATIs.

Note that the proposal in (33) implies that PSIs cause intervention effects, which can not be cancelled due to the strong focus (or [+F] feature) that PSIs have. On the other hand, ATIs bear weaker focus, which can be pragmatic in nature; hence can be cancelled, and may allow variations in speakers' judgment. Although the nature of focus they bear is different, I argue that both PSIs and ATIs can be explained under Kim (2002) and Beck's (2006) account that the intervention effects occur when a focused element intervenes between a *wh*-phrase and the C, where the *wh* takes scope, as schematically illustrated in (27): *[Q_i [...[FocP [... *wh*$_i$...]]]].

The hybrid analysis enables us to account for the fact that PSIs do not allow any fragility of judgment among native speakers unlike ATIs, and it gives a straightforward answer to why there is no cancellation effect in the embedded contexts for PSIs. Our proposals have nothing

special to say about these points: PSIs are genuine LF-interveners, and hence they actually block the covert movement of *wh*-phrases, which results in unacceptability. The hybrid analysis in (33) is not incompatible with the pragmatic accounts of the intervention effects in Tomioka's (2007, 2009) series of works. However, it is conceptually more desirable to divide the genuine syntactic interveners (PSIs) from pragmatic ones (ATIs), since if one argues that all instances of the intervention effects are pragmatic in nature, as Tomioka does, then he or she has to stipulate some additional and ad hoc explanation such as (20) for the special status of PSIs including NPIs. In addition, one has to make some comments on why PSIs do not allow gradient judgment among individual/intervener. Therefore, this division of labor would lead to overall simplification of the theory of LF-intervention effects. In what follows, we are going to look at some evidence that PSIs serve as genuine LF-interveners in the other configurations than (26), in which pragmatic accounts do not have any explanation for.

4. Polarity Sensitive Items as Genuine LF-interveners:

4.1 NPIs in Nominative Object Constructions:

Since Hoji (1985, 1986), LF-intervention effects have been analyzed in the configuration (16), where interveners c-command and precede *wh*-phrases in interrogative sentences. However, it has been pointed out by Funakoshi and Takahashi (2014) that NPIs also show LF-intervention effects in other configurations. One of the evidence is that NPIs block the restrictive focus particle *dake* 'only' from taking wide scope over *-(rar)e* 'can' in nominative object construction, as in (34). Although one of the anonymous reviewers noted that the *only* > *can* reading is possible in (34a), I follow the judgment of Tada (1992), Funakoshi and Takahashi (2014) and many others in the literature of nominative objects in Japanese (but see Nomura 2005).

(34) a. **Daremo** *migime-dake-ga* tumur-e-na-i
anyone right.eye-only-NOM close-can-NEG-PRES
'No one can close his right eye.' (?*only > can)
b. **John-sika** *migime-dake-ga* tumur-e-na-i

J.-except right.eye-only-NOM close-can-NEG-PRES

'Only John can close only his right eye.' (?*only > can)

(Funakoshi and Takahashi 2014:105)

In Japanese, objects can be assigned nominative case as well as accusative case when the verb is followed by the potential suffix *-(rar)e*. Note that when objects are accompanied by the nominative case marker, *dake* 'only' can scope over *-(rar)e* 'can,' as in (35).

(35) a. Taro-ga *migime-dake-o* tumur-e-ru

T.-NOM right:eye-only-ACC close-can-PRES

'Taro can wink/close his right eye.' (^{ok}can > only)

'?*It is only his right eye that Taro can close.' (?*only > can)

b. Taro-ga *migime-dake-ga* tumur-e-ru

T.-NOM right:eye-only-NOM close-can-PRES

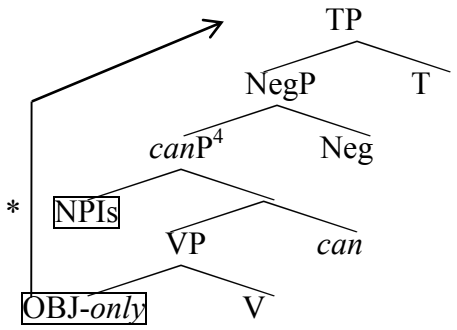
'Taro can wink his right eye.' (*can > only)

'It is only his right eye that Taro can close.' (^{ok}only > can)

(Funakoshi and Takahashi 2014:101)

While inverse scope reading is not possible when objects are assigned accusative case markers in (35a), nominative objects enable *dake* 'only' to take wide scope (cf. Tada 1992 among others). Given the characteristics of nominative object constructions, we are led to conclude that the presence of NPIs in (34) cause LF-intervention effects, blocking nominative objects with *dake* 'only' to cross over NPIs in LF. I argue for Funakoshi and Takahashi's (2014) conclusion that NPIs are genuine LF-interveners that block covert movement of c-commanded elements. Since NPIs must be in the scope of negation in LF (Kato 1994, 2000), they obligatorily stay within NegP. In order for the other quantified NPs to scope over NPIs, these items must cross over NPIs, which causes LF-intervention effects as illustrated in (36).

(36) Nominative Objects crossing over NPIs, which results in LF-intervention effects:



(okcan > only, *only > can)

4.2APIs and BPIs in Nominative Object Constructions:

If we replace NPIs in (34) and (36) with APIs and BPIs, the same scopal interactions are observed, as illustrated in (37) through (39).[5,6]

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[4] I follow Funakoshi and Takahashi's (2014) notation of *v*P whose head is *-(rar)e* 'can,' as *can*P only for expository reasons.

[5] Following Hasegawa (1991), I distinguish *dareka-ga* 'someone,' which is followed by a case marker, and *dareka* 'someone' without a case particle. While *dareka-ga* allows cancellation effects in embedded contexts, *dareka* lacks root-embedded contrasts in acceptability. In addition, it is only the former one that allows gradient judgment in acceptability. From these observations, I treat only the latter *dareka* without case particles as a genuine syntactic intervener, though both of them have affirmative polarity sensitivity in nature.

[6] *cf.* ATIs (Anti-Topic Items):

(i) **Daremo-ga** *migime-dake-ga* tumur-e-ru
everyone-NOM right:eye-only-NOM close-can-PRES
'Everyone can close only his right eye.' (can > only)
'It is only the right eye that everyone can close.' (only > can)

(ii) **Dareka-ga** *migime-dake-ga* tumur-e-ru
someone-NOM right:eye-only-NOM close-can-PRES

(37) APIs:

a. **Dareka/Nanika** *migime-dake-o* tumur-e-ru
someone/something right:eye-only-ACC close-can-PRES
'Someone/Something can wink his/her/its right eye' (^{ok}can > only)
'It is only the right eye that someone/something can close' (*only > can)

b. **Dareka/Nanika** *migime-dake-ga* tumur-e-ru
someone/something right:eye-only-NOM close-can-PRES
'Someone/Something can wink his/her/its right eye' (^{ok}can > only)
'It is only the right eye that someone/something can close' (??only > can)

(38) BPIs: NP+case marker+WH-ka

a. **Gakusei-ga** **dareka** *migime-dake-o* tumur-e-ru no
student-NOM **who-KA** right:eye-only-ACC close-can-PRES Q
'Can some student wink only his/her right eye?' (^{ok}can > only)
'Is it only his/her right eye that some student can close?' (*only > can)

b. **Gakusei-ga** **dareka** *migime-dake-ga* tumur-e-ru no
student-NOM **who-KA** right:eye-only-NOM close-can-PRES Q
'Can some student wink only his/her right eye?' (^{ok}can > only)
'Is it only his/her right eye that some student can close?' (*?only > can)

(39) BPIs: Minimizers

a. **Gakusei-ga** **hito-ri-demo** *migime-dake-o* tumur-e-ru no
student-NOM **1-cl-DEMO** right:eye-only-ACC close-can-PRES Q
'Can even one student wink only his/her right eye?' (^{ok}can > only)
'Is it only his/her right eye that even one student can close?' (*only > can)

b. **Gakusei-ga** **hito-ri-demo** *migime-dake-ga* tumur-e-ru no
student-NOM **1-cl-DEMO** right:eye-only-NOM close-can-PRES Q

'Someone can close only his right eye.' (can > only)
'It is only the right eye that someone can close.' (only > can)

'Can even one student wink only his/her right eye?' ([ok]can > only)

'Is it only his/her right eye that even one student can close?' (*?only > can)

Both APIs and BPIs seem to behave in a similar manner as NPIs in Funakoshi and Takahashi's (2014) configurations. We can now draw a descriptive generalization of PSIs that c-command and precede nominative marked quantificational NPs such as *OBJ-dake-ga* 'OBJ-only-nom,' as in (40).

(40) In '*PSIs*…*OBJ-dake-ga*…'

Scopal relations: [ok]PSIs > *OBJ-dake* / **OBJ-dake* > PSIs

In the next subsection, we are going to see how syntactic accounts of LF-intervention effects explain the unacceptability in (37) with APIs and (38) and (39) with BPIs, whose licensing conditions are assumed to be rather non-syntactic (Baker 1970 among others)[7].

4.3 Affirmative Polarity and Bipolar Sensitivity as a Syntactic Phenomena

The licensing conditions for NPIs and APIs have been assumed to differ along the dimension of licensing versus prohibition. Although a sentence contains negation, APIs can still be licensed in a non-negative phrase that is above NegP (Progovac 2000). Therefore, if a clause happens to contain negation, APIs automatically scopes above it, as illustrated in (41).

(41) John-wa **nanika** tabe-na-katta (John didn't eat **something**.)

*NEG> ∃: 'J. didn't eat anything.'

[ok] ∃ >NEG: 'There is something that J. didn't eat.'

(Goro 2006:111)

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[7] Baker (1970), following Jackendoff's and Klimas' series of works, notes that the licensing conditions for APIs are different from those of NPIs: "Negative Polarity Items are appropriate in structures within the scope of negation, whereas Affirmative Polarity Items are appropriate elsewhere." (Baker 1970:179 (47))

As illustrated above, APIs cannot take scope under local negation. However, Goro (2006, 2007) convincingly shows that APIs are allowed to take narrow scope under negation in cases involving non-overt or non-clausemate negation, as in (42) and (43) below.

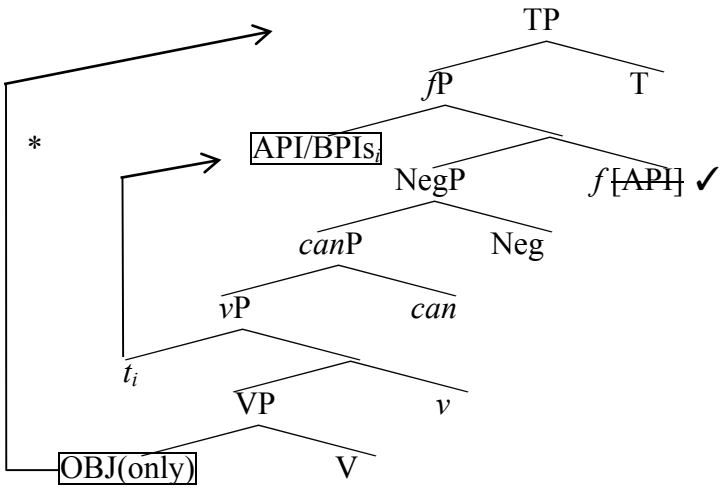
(42) John-wa [Mary-ga **nanika** tabe-ta to] sinjitei-na-i
J.-TOP M.-NOM **something** eat-PAST that believe-NEG-PRES
'John doesn't believe that Mary ate anything for lunch.' (^{ok}NEG> ∃)

(43) Kare-wa **nanika** tabe-ta wake-de-wa na-i
he-TOP **something** eat-PAST not:the:case-TOP NEG-PRES
'It is not the case that he ate something.' (^{ok}NEG> ∃)

From these observations, Goro (2006, 2007) claims that the effect of affirmative polarity is insensitive to non-overt and non-clausemate negations; hence there is no semantic problem with the narrow-scope interpretation of APIs under NEG.

For these reasons, Goro analyzes that APIs have a [+API] feature, which must be checked via covert movement to the [Spec, *f*P], over NegP. Following his analysis, in which he claims that the licensing of APIs is also a syntactic phenomenon, I assume that APIs/BPIs have a [+API] feature, which drives covert movement of APIs/BPIs to the spec *f*P in Goro's configuration. The parallelism is observed among PSIs as in (45).

(44) LF-intervention effects observed with APIs/BPIs in (38) through (40):



(*only>can, ^{ok}can>only)

An anonymous reviewer pointed out to me that in the case of bipolar and affirmative polarity items, the nominative objects may take scope over the modal 'can' by adjoining to *can*P, for example. However, I argue that this is not the case: I assume, along with Funakoshi and Takahashi (2014) and others that a nominative object overtly raise to the T domain where it receives nominative case. Therefore, I argue that the nominative object in (45) must not take scope somewhere else, which means that it obligatorily crosses over the API/BPIs, just as illustrated above. For our arguments to be watertight, we will further observe several consequences of the proposals in (33), which lend credence to *the Hybrid Analysis for LF-intervention Effects*. Although NEG sometimes can scope over APIs/BPIs, I argue that APIs/BPIs have their syntactic position for licensing in between NegP and TP following Goro's (2006, 2007) analysis, and that after their features have been checked, they would remain in-situ in [spec, *f*P] without any further movement, which supports the proposed mechanism in (45).

5. Further Discussions: NEG-Raising and APIs/BPIs under NEG

In what follows, we will expand Goro's (2007: Section 5) analysis on APIs to BPIs and further support his claim that APIs and BPIs have their syntactic position for checking their [+API] feature, located in between NegP and TP (Goro 2007:264). The evidence comes from Neg-raising and the scopal interactions of negation and APIs/BPIs.

It has been observed in Hasegawa (1991), that APIs are licensed under negation in interrogative and conditional sentences. She observes that *NEG > APIs* is legitimate, only when C is filled with a semantically non-null head, which is Q or conditionals. This is independently pointed out for BPIs too in Watanabe (2013).

(45) a. **Dareka** ko-na-katta ka?
someone come-NEG-PAST Q
'Didn't anyone come?'

b. [[**dareka** ko-t_i] [$_{THAT}$ ***ka*** [$_{INFL}$ nakat-ta$_i$]]]
someone come ***Q*** NEG-PAST
^{OK}NEG> ∃ (Hasegawa 1991:271-273)

Hasegawa assumes that when Q or conditionals exist, NEG (in her analysis, in INFL) raises to THAT. In (46b), after NEG-head raises to C, it no longer c-commands APIs, hence the examples become acceptable in Hasegawa's (1991) account. However, as we have seen so far, there is no problem with NEG c-commanding APIs once they are licensed in [Spec, *f*P] and checked its [+API] feature. Given examples (45a), in which NEG actually scopes over APIs, we should rather take (45a) as an instance of NEG-raising after APIs have been checked their [+API] feature.

As for BPIs, the similar configurations are observed: BPIs have the characteristics of both NPIs and APIs, hence it is not unnatural to assume that they also have a [+API] feature, which must be checked over NegP.

(46) BPIs under negation:
a. Sono purojekuto-ga **seika-o** **nani-ka**
that project-NOM **achievement-ACC what-KA**
age-na-katta ***ra***, kare-wa kubi-ni na-ru
raise-NEG-PAST-***if*** he-TOP fired be-PRES
'If that project doesn't produce some results, he will be fired'

b. John-wa **hon-o** **is-satsu-demo** yoma-na-katta (no-)***ka***?
John-TOP **book-acc** **1-cl-DEMO** read-NEG-PAST ***Q***

'Didn't John read even one book?'

I further assume that BPIs, which have [+API] features also move covertly to the same position as APIs. Recent studies on NEG-raising enable us to take a fresh look at the observations in Hasegawa (1991) as well as in (46). I take the presence of Q or conditional C as a condition on NEG-raising over APIs and BPIs; that is, they are allowed to take narrow scope under NEG only when Q or conditional C is present.

The relevant idea of the last resort condition for Neg-raising is not new or bizarre at all: Several previous studies have also suggested some last resort conditions on Neg-raising in terms of scopal interactions. One of them is Kato (2007), in which he claims that Neg-raising may occur as a last resort operation in the coordinate structure only when some conditions are met. Adopting Fox's (2000) Scope Economy, which requires scope-shifting operations occur as a last resort to create new scope relations, Kato (2007) argues that in such cases below, NEG-raising may occur as a last resort to license the NPI (NCI)s in the coordinate structure.

(47) a. **Dare-mo**$_i$ Yamada kyoozyu-ga [[kyoo t_i home] & [kinoo t_i sikar-**ana-kat**]]-ta
anyone Y. prof.-NOM today praise & yesterday scold-NEG-PAST
'Nobody is such that Prof. Yamada praised him today and scolded him yesterday'

b. ***NPI** ..... [[.....] & [..... **NEG**]] → c. **NPI** ..... [[.....]&[.....t_i]] **NEG**$_i$

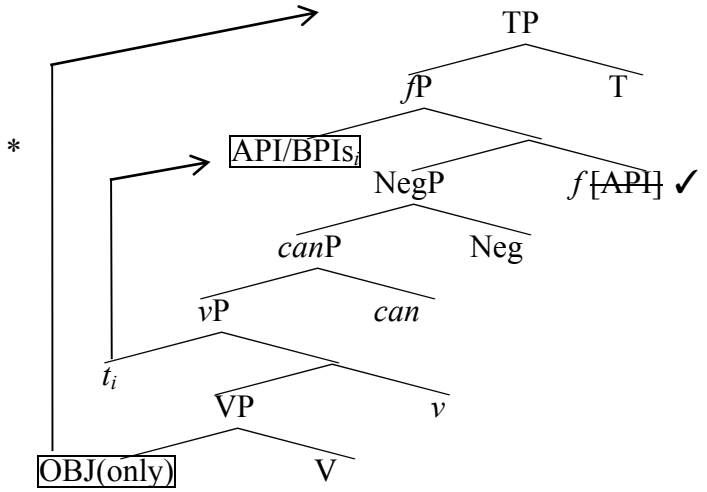
(Kato 2007:123)

Although the configuration (47b) should be a violation of the coordinate structure constraints, (47a) is acceptable. Kato therefore draws a descriptive generalization that NEG can appear above a coordinated TP/VP only when there is an NCI/NPI above the coordinated TP/VP, which needs to be licensed by NEG (adapted from Kato 2007:120-121).

Turning back to Funakoshi and Takahashi's (2014) idea, in which they claim that nominative objects are not allowed to raise to [Spec, TP] when NPIs intervene, I conclude that APIs and BPIs have their syntactic position for licensing in between NegP and TP ([Spec, *f*P] in Goro's (2006, 2007) term) and they also serve as genuine syntactic interveners in a similar manner as NPIs. Note that once [+API] feature has been checked, APIs/BPIs can take scope under NEG. From these observations, it is reasonable to claim that all the three types of PSIs have their syn-

tactic positions below TP for licensing, which gives credence to the mechanism of LF-intervention effects observed with PSIs, as illustrated in (48) below.

(48) PSIs causing LF-intervention effects in Nominative Object Constructions:



(*only>can, ^{ok}can>only)

6. Conclusion

At this stage, we can draw a descriptive generalization (49):

(49) **PSIs as genuine LF-interveners**:
*[Q_i [...[PSIs [... *wh*/QP_i...]]]]

As proposed in (33), I argue that PSIs cause intervention effects, which can not be cancelled due to the strong focus (or [+F] feature) that PSIs have (cf. Kim (2002) and Beck (2006)).[8] On the other hand, ATIs bear weaker focus, which can be pragmatic in nature; hence can be cancelled, and may allow variations in speakers' judgment. Although the nature of focus they bear is different, I argue that both PSIs and ATIs can be explained if we assume that the intervention effects occur when a focused element intervenes between a *wh*-phrase and the C, where the *wh* takes

[8] I thank one of the anonymous reviewers for noting me about the connections of my study and Kim (2002) and Beck (2006).

scope.

In this paper, I have critically examined Tomioka's (2007, 2009) pragmatic accounts of LF-intervention effects, and shown that the pragmatic accounts cannot capture the special status of NPIs and the distributional parallelism observed among PSIs. Following Funakoshi and Takahashi's (2014) observations on NPIs in nominative object constructions, I presented novel data of PSIs that cast doubt on the pragmatic accounts of LF-intervention effects, and argued that we should rather divide so-called 'LF-intervention effects' into two different phenomena: (i) *Pragmatic intervention effects* caused by a mismatch between syntactic and information structures (Tomioka 2007, 2009); and (ii) *Genuine Syntactic LF-intervention effects* that are caused by illegal LF-representations, in which PSIs block *wh*-phrases and quantificational NPs from taking wide scope. This division of labor consequently leads to the simplification of the theory of LF-intervention effects, abandoning additional and ad hoc stipulations such as (20) about phonological constraints on NPI-licensing, which is totally undesirable.

While Tomioka's (2007, 2009) pragmatic account is appealing in overcoming problems in (7), given these observations and discussions, I argue for (50):

(50) ***The Hybrid Analysis for LF-intervention Effects*** (revised from (26)):

a. PSIs are genuine LF-interveners, blocking c-commanded *wh*-phrases/quantificational NPs to scope over them.
b. Though PSIs/ATIs have been lumped together in the literature, the source of the intervention effects differs. Genuine LF-interveners, which are fully syntactic in nature, must be distinguished from other pragmatic ATIs.

Such hybrid perspectives bring back enormous findings of LF-intervention effects to the field of syntax, without relegating all of them to pragmatics:[9] Observations of LF-intervention effects in

[9] The editor of Languages and Linguistics questioned whether there is any strong reason to assume that ATIs are not semantic, but pragmatic. My analysis actually leaves this issue open. As in (27), I showed that the present paper is compatible with the Beck's and Kim's focus interpretation analysis of the intervention effects. Although I have not committed myself to going into the detailed formal semantic analysis, it does not mean that I deny that ATIs are semantic in nature.

wh-interrogatives still serve as evidence for the presence of covert LF *wh*-movement in Japanese (Nishigauchi 1990, Watanabe 1992 among others).

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Further studies are necessary if one wants to investigate the division of labor between semantics and pragmatics, and to obtain the formal-semantic explanation of the ATIs and the intervention effects caused by them.

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Graduate School of Languages and Linguistics
Sophia University in Tokyo
L-513, 7-1, Kioi-cho, Chiyoda-ku,
Tokyo 102-8554, JAPAN
ryoichiro.k@eagle.sophia.ac.jp