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Correlations between island (in)sensitivity and base positions of (non-)standard *wh*-in-situ

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Abstract. It has been well-accepted in the literature that the island (in)sensitivity of *wh*-in-situ falls under the so-called Noun versus Adverb Generalization (NAG), which states that an in-situ *wh*-phrase is island-free iff it is (or contains) a *wh*-nominal (Tsai 1994a,b; Stepanov & Tsai 2008; Fujii et al. 2014). However, we show that the NAG is not sufficient to explain the island behaviors of some (non-)standard in-situ *wh*-phrases in Korean. Alternatively, we suggest that the island (in)sensitivity of in-situ *wh*-phrases may correlate not with their categorial status but with their base-generated positions: specifically, we assume that an in-situ *wh*-phrase that is base-generated in the CP domain (Spec-CP) is island-sensitive, while an in-situ *wh*-phrase that is base-generated below CP/TP is island-insensitive.

Keywords. (non-)standard *wh*-in-situ; island sensitivity; base position; Noun versus Adverb Generalization

1. Asymmetries in island effects. Since Huang (1982a,b), it has been well-known that *wh*-in-situ languages exhibit an argument-adjunct asymmetry with respect to island sensitivity. For an illustration, consider the case of a complex NP island in Chinese and Korean:

(1) a. ni zui xihuan [$_{NP}$ [$_{CP}$ mai **shenme**] de ren]? (Chinese)
you most like buy what DE person
'What do you like the person who bought t?'

b. *ni zui xinshang [$_{NP}$ [$_{CP}$ **weishenme** gongzuo] de ren]?
you most appreciate why work DE person
'What is the reason x such that you appreciate most people who work for x?'
(Stepanov and Tsai 2008: (9b))

(2) a. Mimi-nun [$_{NP}$ [$_{CP}$ **mwe-l** kkay-n] salam]-ul pinanhayss-ni? (Korean)
Mimi-TOP what-ACC break-MOD person-ACC criticized-QUE
'Mimi criticized the person who broke what?'

b. *Mimi-nun [$_{NP}$ [$_{CP}$ **way** kkochpyeng-ul kkay-n] salam]-ul pinanhayss-ni?
Mimi-TOP why vase-ACC break-MOD person-ACC criticized-QUE
'Mimi criticized the person who broke the vase why?'

In both the Chinese and Korean examples, the *wh*-arguments—*shenme* in (1a) and *mwe-l* in (2a)—can occur inside the complex NP island, whereas the reason *wh*-adjuncts—*weishenme* in (1b) and *way* in (2b)—cannot.[1]

To account for such asymmetries in island effects, many researchers (e.g., Tsai 1994a,b; Stepanov & Tsai 2008; Fujii et al. 2014) have argued, under an unselective-binding approach, that the island behaviors of *wh*-in-situ fall under the morphological generalization in (3), which, following Fujii et al. (2014), we refer to as the Noun versus Adverb Generalization.[2]

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[1] The form *mwe-l* is a contracted form of *mwues-ul*.

[2] A *wh*-nominal that introduces a choice function variable can be licensed inside an island by a Q-operator via unselective binding, as illustrated in (ia). On the other hand, a *wh*-adverb is not licensed in-situ, since it does not

(3) *Noun versus Adverb Generalization (NAG)*:
An in-situ *wh*-phrase is island-insensitive iff it is (or contains) a *wh*-nominal. (Fujii et al. 2014: (3))

The NAG gives a straightforward account of the contrasts in (1) and (2): the *wh*-arguments *shenme* and *mwe-l* are island-insensitive since they are *wh*-nominals, whereas the reason *wh*-adjuncts *weishenme* and *way* are island-sensitive since they are pure *wh*-adverbs.

2. Counterexamples to the NAG. Here we show that island (in)sensitivity of in-situ *wh*-phrases in Korean is not properly constrained by the NAG. Before we proceed, however, we would like to briefly introduce two different but similar types of non-standard *wh*-question in Korean, whose island behaviors, as we will see, play a key role in testing whether the NAG is empirically correct or not. Consider (4) and (5).

(4) a. Mimi-nun **mwe-l^{w}** kulehkey manhun nonmwun-ul ilkess-ni?
Mimi-TOP what-ACC so many paper-ACC read-QUE
'Why did Mimi read so many papers?'
b. Mimi-nun **mwe-l** ilkess-ni?
Mimi-TOP what-ACC read-QUE
'What did Mimi read?'

(5) a. John-un **ettehkey^{w}** hankwuk-ey ka-key toyess-ni?
John-TOP how South.Korea-to go-CONN became-QUE
'Why did John go to South Korea?'
b. John-un **ettehkey** kkochpyeng-ul kkayss-ni?
John-TOP how vase-ACC broke-QUE
'How did John break the vase?'

The *wh*-questions like (4a) and (5a) are taken to be non-standard *wh*-questions in the sense that a non-'why' *wh*-phrase receives a 'why'-like interpretation. In (4a), the *wh*-phrase *mwe-l*, which canonically functions as an argument in a sentence as in (4b), behaves like a *wh*-adjunct corresponding to *way* 'why'. In a similar manner, in (5a), the *wh*-phrase *ettehkey*, which is standardly used as a manner or instrumental adjunct as in (5b), is interpreted as a reason *wh*-adverbial when it occurs with a causative *-key toy*-construction with past tense.[3] As indicated in (4a) and (5a), throughout the paper, the superscript ^{w} is used in glossing the non-standard *wh*-items (i.e., reason *mwe-l* and reason *ettehkey*) and distinguishing them from their standard counterparts (*wh*-argument *mwe-l* and manner/instrumental *ettehkey*).

Now let us examine whether or not the NAG correctly predicts island (in)sensitivity of

introduce a variable subject to unselective binding and, therefore, relies on local binding with subsequent covert movement to its scope position, in which case it induces island effects when it occurs inside an island, as illustrated in (ib). See Tsai (1994a) and Stepanov & Tsai (2008) for detailed discussion of unselective binding.

unselective binding

(i) a. LF: [$_{CP}$ Q-Op$_i$ C$_{[wh]}$ [$_{Island}$ ... wh$_i$ ...]]

covert movement

b. *LF: [$_{CP}$ wh$_i$ C$_{[wh]}$ [$_{Island}$ ... t$_i$ ...]]

[3] See Yeo (2019) for discussion of causative *-key toy*-constructions.

(non-)standard *wh*-in-situ in Korean. If the NAG is on the right track, then it is expected that manner/instrumental *ettehkey* is island-sensitive, since it is a *wh*-adverb; however, as shown in (6), it is island-insensitive in that it can occur inside a complex NP island or an adjunct island (Chung 2000, 2005).

(6) a. Mimi-nun [$_{NP}$ [$_{CP}$ Kim-i **ettehkey** yoliha-n] umsik]-ul mekess-ni?
Mimi-TOP Kim-NOM how cook-MOD food-ACC ate-QUE
'Mimi ate the food that Kim cooked how?'

b. Mimi-nun [$_{CP}$ Kim-i **ettehkey** umsik-ul yolihay-se] hwakanass-ni?
Mimi-TOP Kim-NOM how food-ACC cook-because got.upset-QUE
'Mimi got upset because Kim cooked the food how?'

In dealing with the island insensitivity of manner/instrumental *ettehkey*, Chung (2005) offers an interesting proposal under an unselective-binding approach. On his view, manner/instrumental *ettehkey* can be decomposed into four sub-parts, [$_{DP/NP}$ *e-tte*]-*h-key* 'Det-CNP-do-adverbializer': the first part *e* is a determiner which combines with the common noun phrase *tte* that follows it, the third part *h(a)* is a transitive verb that takes the preceding DP/NP, and the final part *key* is an adverbializer. Based on this morphological structure, Chung explains that the insensitivity of manner/instrumental *ettehkey* to strong islands is because it contains the nominal element *tte* that introduces a variable subject to unselective binding: that is, its island behavior is captured by the NAG. If Chung's nominal analysis is on the right track, then it is expected that reason *ettehkey* is island-insensitive, since its morphological form is the same as its standard counterpart; however, that is not the case, as evidenced by the ungrammatical examples in (7) where reason *ettehkey* cannot occur inside a complex NP island and an adjunct island, just like *way*.

(7) a. *Mimi-nun [$_{NP}$ [$_{CP}$ Kim-i {**ettehkey^{w}/way**} yoliha-key toy-n] umsik]-ul
Mimi-TOP Kim-NOM how/why cook-CONN become-MOD food-ACC
mekess-ni?
ate-QUE
'Mimi ate the food that Kim cooked why?'

b. *Mimi-nun [$_{CP}$ Kim-i {**ettehkey^{w}/way**} umsik-ul yoliha-key toy-se]
Mimi-TOP Kim-NOM how/why food-ACC cook-CONN become-because
hwakanass-ni?
got.upset-QUE
'Mimi got upset because Kim cooked the food why?'

Contra Chung's proposal, although we treat both manner/instrumental and reason *ettehkey* as pure *wh*-adverbs, the NAG still has difficulty accounting for the asymmetry between the two variants of *ettehkey* in island contexts: since the two variants are *wh*-adverbs, they both must be island-sensitive according to the NAG, contrary to fact.

The NAG may also have difficulty explaining the asymmetry between reason *mwe-l* and its standard counterpart (i.e., *wh*-argument) in island effects. Under the NAG, reason *mwe-l* is predicted to be island-insensitive, since it is a *wh*-nominal; however, the prediction is not borne out, as seen in (8) where reason *mwe-l* is sensitive to a complex NP island, as in (8a), and an adjunct island, as in (8b).

(8) a. *Mimi-nun [$_{NP}$ [$_{CP}$ {**mwe-l^{w}/way**} kulehkey manhun nonmwun-ul ilk-un]
Mimi-TOP what-ACC/why so many paper-ACC read-MOD

salam]-ul pinanhayss-ni?
person-ACC criticized-QUE
'Mimi criticized the person who read so many papers why?'

b. *Mimi-nun [$_{CP}$ Kim-i {**mwe-l^{w}/way**} kulehkey ilccik ttena-se]
Mimi-TOP Kim-NOM what-ACC/why so ealy leave-because
hwakanass-ni?
got.upset-QUE
'Mimi got upset because Kim left so early why?'

3. Correlations between island (in)sensitivity and base positions of (non-)standard *wh*-in-situ. In the previous section we have demonstrated that the NAG fails to capture the island (in)sensitivity of some (non-)standard in-situ *wh*-phrases in Korean. Here, as an attempt to provide a (potential) alternative view to the NAG, we suggest that island (in)sensitivity of in-situ *wh*-phrases may correlate with their base-generated positions, not with their categorial status (i.e., noun versus adverb), by showing that an in-situ *wh*-phrase base-generated in the CP domain (Spec-CP) is island-sensitive, while an in-situ *wh*-phrase base-generated below CP/TP is island-insensitive.

3.1. TWO DIAGNOSTIC TESTS FOR IDENTIFYING *wh*-PHRASES BASE-GENERATED IN THE CP DOMAIN. Korean is well-known as exhibiting an asymmetry between *way* 'why' and other *wh*-operators with respect to the Intervention Effect: unlike the latter, the former does not exhibit the Intervention Effect when c-commanded by a Scope Bearing Element (SBE) like *amwuto* 'anyone' or *man* 'only' (Beck & Kim 1997; Beck 2006; Ko 2005, 2006).[4] Consider (9).

(9) a. *amwuto **mwe-l** ilk-ci ahn-ass-ni?
anyone what-ACC read-CONN not-PST-QUE
'What did no one read?'

b. *amwuto Mary-eytayhay **ettehkey** malha-ci anh-ass-ni?
anyone Mary-about how talk-CONN not-PST-QUE
'How was no one talking about Mary?' (adapted from Choi (2007): (1d))

c. amwuto **way** nonmwun-ul ilk-ci ahn-ass-ni?
anyone why paper-ACC read-CONN not-PST-QUE
'Why did no one read the paper?'

As illustrated here, unlike the *wh*-argument *mwe-l* and the manner/instrumental *ettehkey*, the *wh*-adjunct *way* can follow the SBE *amwuto*.

To account for the peculiar behavior of *way* in terms of the Intervention Effect, i.e., its ability to be preceded by an SBE, Ko (2005) assumes that *way* in an interrogative clause is externally merged in its checking position, Spec-CP (CP-Modifier Hypothesis), while other *wh*-phrases undergo LF movement to Spec-CP for feature checking. This is illustrated in (10).

(10) a. [$_{CP}$ way C$_{[+Q]}$ [$_{IP}$ ...]]

b. [$_{CP}$ wh$_i$ C$_{[+Q]}$ [$_{IP}$ ... t$_i$ ...]]

In addition, she proposes the Intervention Effect Constraint, where at LF a *wh*-phrase cannot move across an SBE to its checking (scope) position, as illustrated in (11) (cf. Beck and Kim 1997).

[4] SBEs also include *anh* 'not', *pakkey* 'only' (NPI), *to* 'also', *nwukwunka* '(non-specific) someone', and *nwukwuna* 'everyone'. See Ko (2005) for relevant examples.

(11) [... $C_{[+Q]}$ **SBE** wh ...]

On Ko's analysis, the ungrammaticality of (9a) and (9b) is simply because the SBE *amwuto* blocks LF movement of the given *wh*-phrase to Spec-CP, as illustrated in (12).

(12) a. [$_{CP}$ $C_{[+Q]}$ [$_{IP}$ **amwuto** mwe-l ...]] (LF for (9a))

b. [$_{CP}$ $C_{[+Q]}$ [$_{IP}$ **amwuto** ... ettehkey ...]] (LF for (9b))

Meantime, the well-formedness of (9c) is because the *wh*-adjunct *way* is licensed in its base position (i.e., Spec-CP) and, therefore, does not move across the c-commanding SBE which has undergone overt scrambling over the *wh*-phrase:

(13) [$_{CP}$ ... **amwuto$_i$** way $C_{[+Q]}$ [$_{IP}$ ... t_i ...]]

As noted by Ko (2005), the external merge of *way* at Spec-CP is supported by the fact that it always takes wide scope over negation in an interrogative clause:

(14) John-un **way** Mary-lul cohaha-ci-anh-ni?
John-TOP why Mary-ACC like-CI-not-QUE
'What is the reason x such that John does not like Mary? (Reason $\gg$ Not)'
'*What is not the reason x such that John likes Mary for x? (Reason $\ll$ Not)'
(Ko 2005: (55))

Since the reason *wh*-adjunct *way* is base-generated in the CP domain, it is impossible for it to be interpreted under the negation in IP.

Adopting Ko's ideas, we assume that if a *wh*-phrase (i) does not show the Intervention Effect when c-commanded by an SBE in an interrogative clause and (ii) takes obligatory wide scope over negation, then it is taken to be base-generated in the CP domain (Spec-CP).

3.2. EXTERNAL MERGE OF NON-STANDARD *wh*-IN-SITU IN THE CP DOMAIN. Reason *mwe-l* is assumed to originate in the CP domain given that, like *way*, it can be preceded by an SBE, as in (15a), and takes wide scope over negation in an interrogative clause, as in (15b).

(15) a. Mimi-man {**mwe-l^w/way**} kulehkey manhun nonmwun-ul ilkess-ni?
Mimi-only what-ACC/why so many paper-ACC read-QUE
'Why did only Mimi read so many papers?'

b. John-un {**mwe-l^w/way**} kulehkey swipkey cichi-cito anh-ni?
John-TOP what-ACC/why so easily get.tired-CONN not-QUE
'What is the reason x such that John does not get tired so easily (Reason $\gg$ Not)'
'*What is not the reason x such that John gets tired so easily for x?
(Reason $\ll$ Not)'

Reason *ettehkey* also behaves like *way* in regard to the Intervention Effect and scopal interactions with negation, as illustrated in (16), indicating that it is base-generated in the CP domain.

(16) a. amwuto **ettehkey^w/way** nonmwun-ul ilk-ci anh-key toyess-ni?
anyone how/why paper-ACC read-CONN not-CONN became-QUE
'Why didn't anyone read papers?'

b. John-un **ettehkey^{w}/way** hankwuk-ey ka-ci anh-key toyess-ni?
John-TOP how/why South.Korea-to go-CONN not-CONN became-QUE
'What is the reason x such that John didn't go to South Korea? (Reason ≫ Not)'
'*What is not the reason x such that John went to South Korea for x?
(Reason ≪ Not)'

Meantime, manner/instrumental *ettehkey* is assumed to be base-generated below NegP (in IP) in that it is subject to the Negative Island Effect, where negation blocks extraction of certain (*wh*-)phrases (Rizzi 1990; Tsai 2008; Shlonsky & Soare 2011). Consider the contrast in (17).

(17) a. Mimi-nun **way** cha-lul kochi-ci ahn-ass-ni?
Mimi-TOP why car-ACC fix-CONN not-PST-QUE
'Why didn't Mimi fix the car?'
b. *Mimi-nun **ettehkey** cha-lul kochi-ci ahn-ass-ni?
Mimi-TOP how car-ACC fix-CONN not-PST-QUE
'How didn't Mimi fix the car?'

As observed in (17a), the reason *wh*-adjunct *way* is not sensitive to negation in the clause with which it is construed. This can be explained by Ko's (2005) analysis that assumes that *way* is base-generated in the CP domain (above NegP). On the other hand, the ungrammaticality of (17b) can be accounted for by assuming that manner/instrumental *ettehkey* originates in a structurally lower position below negation and that its LF movement to Spec-CP is blocked by the negator, inducing the Negative Island Effect. Notice that, as can be seen in (16), reason *ettehkey* is exempt from the Negative Island Effect, just like *way*, which supports the claim that reason *ettehkey* is base-generated in the CP domain.

3.3. ISLAND-SENSITIVE, NON-STANDARD *wh*-IN-SITU. Taken together, we have seen that the non-standard in-situ *wh*-phrases, which are base-generated in the CP domain (Spec-CP), are island-sensitive (see (7) and (8)), while their standard counterparts (*wh*-argument and manner/instrumental *wh*-adjunct), which are base-generated below CP/TP, are island-insensitive (see (2a) and (6)).

3.4. ISLAND (IN)SENSITIVITY AND BASE POSITIONS OF OTHER IN-SITU *wh*-PHRASES. The other in-situ *wh*-phrases that we have not examined so far, such as *nwukwu* 'who' and 'low' *wh*-adjuncts like *encey* 'when' and *eti* 'where', are all island-insensitive. For instance, examples in (18) show that they are insensitive to a complex NP island.

(18) a. John-un [$_{NP}$ [$_{CP}$ **nwu-ka** yoriha-n] umsik-ul] mek-ess-ni?
John-TOP who-NOM cook-MOD food-ACC eat-PST-QUE
'John ate the food that who cooked?'
b. John-un [$_{NP}$ [$_{CP}$ Mimi-ka **encey** yoriha-n] umsik-ul] mek-ess-ni?
John-TOP Mimi-NOM when cook-MOD food-ACC eat-PST-QUE
'John ate the food that Mimi cooked when?'
c. John-un [$_{NP}$ [$_{CP}$ Mimi-ka **eti-se** yoriha-n] umsik-ul] mek-ess-ni?
John-TOP Mimi-NOM where-LOC cook-MOD food-ACC eat-PST-QUE
'John ate the food that Mimi cooked where?'

All these island-insensitive *wh*-phrases presented here are known as being base-generated below CP/TP. This is consistent with the proposed view that an in-situ *wh*-phrase is island-sensitive

iff it is base-generated in the CP domain.

4. Summary. The correlations between island (in)sensitivity and base positions of (non-)standard in-situ *wh*-phrases in Korean we have examined so far are summarized in Table 1.

	***wh*-phrases**	**categories**	**island (in)sensitivity**	**base positions**
standard	*mwe-l/mwues-ul* 'what'	NP	insensitive	below CP/TP
	nwukwu 'who'	NP	insensitive	below CP/TP
	ettehkey 'how'	AdvP	insensitive	below CP/TP
	encey 'when'	NP/PP	insensitive	below CP/TP
	eti 'where'	NP/PP	insensitive	below CP/TP
	way 'why'	AdvP	sensitive	in the CP domain
non-standard	reason *mwe-l*	NP	sensitive	in the CP domain
	reason *ettehkey*	AdvP	sensitive	in the CP domain

Table 1. Correlations between island (in)sensitivity and base positions of (non-)standard in-situ *wh*-phrases in Korean

The table shows that an in-situ *wh*-phrase base-generated below CP/TP is island-insensitive, whereas an in-situ *wh*-phrase base-generated in the CP domain (Spec-CP) is island-sensitive, regardless of whether the given *wh*-phrase is a *wh*-nominal (e.g., reason *mwe-l*) or a *wh*-adverb (e.g., manner/instrumental *ettehkey*), a standard *wh*-phrase or a non-standard *wh*-phrase.[5]

5. How about other *wh*-in-situ languages?. Our preliminary literature review, which is summarized in Table 2, indicates that the proposed correlation between island (in)sensitivity and base positions of *wh*-in-situ may also hold for Chinese and Japanese.

lg.	***wh*-phrases**	**island (in)sensitivity**	**base positions**	**references**
Chinese	reason *weishenme* 'why'	sensitive	in the CP domain	Lin 1992, Ko 2005
	purpose *wei(-le) shenme* 'for what'	insensitive	below CP/TP	Stepanov & Tsai 2008
	causal *zenme* 'how'	sensitive	in the CP domain	Tsai 2008, Jin 2016
	manner *zenme* 'how'	insensitive	below CP/TP	Jin 2016, Murphy 2017
	other *wh*s ('who', 'what', 'when', 'where')	insensitive	below CP/TP	
Japanese	*naze* 'why'	sensitive	in the CP domain	Ko 2005, (Ochi 2014)
	donna riyuu-des 'for what reason'	insensitive	below CP/TP	Ko 2005, Fujii et al. 2014
	doo (yatte) 'how'	insensitive	below CP/TP	Fujii & Takita 2007
	other *wh*s ('who', 'what', 'when', 'where')	insensitive	below CP/TP	

Table 2. Correlations between island (in)sensitivity and base positions of *wh*-in-situ in Chinese and Japanese

[5] In a similar vein, Murphy (2017) proposes that island sensitivity of in-situ *wh*-adverbs correlates with their adjunction height: that is, *v*P-adjuncts are island-insensitive, while TP-adjuncts are island-sensitive. This proposal is based on an operator binding approach. See Murphy (2017) for detail discussion.

6. Concluding remarks and further work. In this paper we have demonstrated that the NAG—the well-accepted generalization in accounting for island (in)sensitivity of *wh*-in-situ—is not enough to capture the island behaviors of some (non-)standard in-situ *wh*-phrases in Korean. Alternatively, we have suggested that the island (in)sensitivity of (non-)standard in-situ *wh*-phrases may correlate with their base positions, by showing that an in-situ *wh*-phrase is island-sensitive iff it is base-generated in the CP domain. However, there remain many important issues to be addressed to confirm the crosslinguistic validity of the generalization and to explain the resulting pattern. We need to do further work to see whether the proposed correlation is applicable over a wide range of *wh*-in-situ languages and to provide theoretical support. Although we leave the crucial issues unresolved here, we hope the (potential) proposed correlation between island (in)sensitivity and base positions gives researchers new insights into understanding various asymmetries in island effects in *wh*-in-situ languages.

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