

# Anti-Superiority Redux: A Criticism of Relational Approach\*

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I will show that anti-superiority effect can receive a more satisfactory account, given the asymmetric scope taking strategy of the two types of wh-words as claimed by Choi (2002). The relational approach by Watanabe (1992) and Saito (1994) as crucially based on the idea that wh-words in Korean type languages, being like quantifiers, should have their relation as established at some point maintained throughout the derivation is flawed, given that wh-words, unlike quantifiers, have the same scope in the same clause. It will be also shown that there are examples which violate relation preservation but are more or less acceptable, suggesting that the constraint of relation preservation cannot be part of the grammar.

**Key words:** indefinite, quantifier, relation, asymmetric, scope

## 1. Introduction

When it comes to Japanese multiple wh-questions as in (1-2), the particular ordering of wh-words affects their acceptability. Hence when an argument wh-word precedes the adjunct wh-word *naze*(why), the sentences are acceptable as shown in (1a-2a), while with the reversed word order, they are unacceptable as shown in (1b-2b). This contrast in acceptability was first observed by Saito (1982) and dubbed as anti-superiority effect by Watanabe (1992).

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- (1) a. **Dare-ga naze soko-ni itta no?**  
 who-NOM why there-to went Q  
 \*‘Who went there why?’
- b. \***Naze dare-ga soko-ni itta no?**  
 why who-NOM there-to went Q  
 \*‘Why did who go there?’  
 (Saito, 1994, p. 195)
- (2) a. John-ga **nani-o naze katta no?**  
 J-NOM what-ACC why bought Q  
 \*‘What did John buy why?’
- b. \*John-ga **naze nani-o katta no?**  
 J-NOM why what-ACC bought Q  
 \*‘Why did John buy what?’  
 (Saito, 1994, p. 195)

Essentially the same contrast in acceptability in Korean multiple wh-questions has been also observed (Chung, 1996) as shown by the following examples in (3-4):

- (3) a. \***Way nwu-ka ttenass-ni?**  
 why who-NOM left-QM  
 \*‘Why did who leave?’
- b. **Nwu-ka way ttenass-ni?**  
 who-NOM why left-QM  
 ‘??Who left why?’
- (4) a. John-i **nwukwu-lul way manness-ni?**  
 John-NOM whom-ACC why met-QM  
 \*‘Whom did John meet why?’
- b. \*John-i **way nwukwu-lul manness-ni?**  
 John-NOM why whom-ACC met-QM  
 \*‘Whom did John meet why?’;

It has been claimed by Watanabe (1992) and Saito (1982, 1994) that the unacceptability of examples as in (1b-2b) in Japanese is essentially due to the failure in the preservation of the relation at LF between the two wh-words, hence based on the well-known observation that the scope

relation between two QPs cannot be reversed later at LF in Korean type languages (Kuroda, 1970; Hoji, 1985; Kim, 1991). Their approach, which I will categorically call relational approach, is flawed, however, since *wh*-words in the same clause, unlike QPs, have the same scope as indicated by the pattern of answers, given the standard assumption that the scope of a *wh*-word is reflected by the possible answers to the question (Baker, 1970). Moreover, there are examples that violate relation preservation but are more or less acceptable, which indicates that the constraint of relation preservation on *wh*-words is not part of the grammar.

In this paper, I will show that the contrast in acceptability of the Korean examples as in (3-4) can receive a more satisfactory account without resort to the spurious constraint of relation preservation, once the proposal for the asymmetric scope taking strategy of *wh*-words between *way* (why) and the rest of *wh*-words as claimed by Choi (2002) is recognized. Without discussion, I will assume the present proposal can extend to Japanese data too. To be specific, in section 2, the contrast in acceptability as in (3-4) will be shown to receive a better account given the proposal for the asymmetric scope taking strategy of the two types of *wh*-words in Korean. In section 3, I will critically review the relational approach, which is based on the assumption that *wh*-words in Korean type languages are like quantifiers in that the scope relation established at some point should be maintained throughout the derivation. Section 4 is the conclusion.

## 2. Indefinite Wh-words

Choi (2002) claims that *wh*-words other than *way* (why) is an indefinite in the sense of Lewis (1975) and Heim (1982), given that they show quantificational variability and can scope out of a syntactic island. The point is illustrated by the relative clause construction and conditional in (5-6).<sup>1,2)</sup>

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1) I should note that (5a) has another reading, which can be represented by the following informal logical notation: 'for some *x*, *x* an individual, if *x* comes, *x* always visits us.'

2) In Choi (2002), *kkok* and *to* is used instead of *nul* and *lato* as in (5-6).

- (5) a. [<sub>CP</sub> **Nwu**-ka o-myen] (pro<sub>i</sub>) nul wuli-lul pangmwunhanta.  
 who-NOM come-if always us-ACC visit  
 'for every x, x an individual, if x comes, x visits us.'
- b. Na-nun [<sub>NP</sub>[<sub>CP</sub> **nwu**-ka ssun] chayk]-i-lato ilkkosipta.  
 I-TOP who-NOM wrote book -LATO want to read  
 'for every x, y, x a person, y a book x wrote, I want to read y.'
- (6) a. \* [<sub>CP</sub> John-i **way** o-myen] (pro<sub>i</sub>) nul wuli-lul pangmwunhanta.  
 J-NOM why come-if always us-ACC visit  
 'For every x, x reason, if John comes for x, he visits us (for x).'
- b. \*Na-nun [<sub>NP</sub> [<sub>CP</sub> John-i **way** ssun] chayk]-i-lato ilkkocipta.  
 I-TOP J-NOM why wrote book -LATO want to read  
 'for every x, y, x a reason, y a book John wrote for y, I want to read y.'
- (Choi, 2002, pp. 31-32)

The informal logical notations in (5-6) indicate that unlike *way* (why), *nwu* (who) exhibits quantificational variability in that its interpretation is determined by the external adverbial quantifier, *nul*(always) and that it can scope out of the syntactic island, namely, the Adjunct Island (Huang, 1982). Thus when it comes to the interpretation of wh-questions as in (7), he claims that indefinite wh-word is also interpreted in-situ, hence suggesting that question morpheme (QM, hereafter) as a wh-operator with a [+WH] feature specification unselectively binds and thus marks the scope of the indefinite wh-word at LF, whereas the adjunct wh-word *way*(why), not being an indefinite, should undergo movement into Spec of CP via spec head agreement with the QM, driven by the need for proper interpretation, assuming the minimalist tenet that LF is the only level for semantic interpretation (Chomsky, 1995).<sup>3)</sup>

- (7) a. Ne-nun [<sub>NP</sub>[<sub>CP</sub> **nwu**-ka ssun] chayk-ul ] ilkess-ni?  
 you-TOP who-NOM wrote book-ACC read-Q  
 'Who is the person x such that you read a book x wrote?'
- b. \*Ne-nun [<sub>NP</sub> [<sub>CP</sub> John-i **way** ssun] chayk-ul ] ilkess-ni?  
 you-TOP J-NOM why wrote book-ACC read-QM  
 'What is the reason x such that you read a book John wrote for x?'

3) The idea that a QM marks the scope of a wh-word is an old one, which goes back to as early as Baker (1970). Also see Cheng (1991) for the cross-linguistic research to that effect.

The contrast in acceptability in (7) between the adjunct wh-word *way*(why) and the argument wh-word can be accounted for, given the proposal for the asymmetric mode of scope taking between them, together with the assumption that Subjacency (Chomsky, 1973, 1977, 1986) subsuming islands such as Complex Noun Phrase Island (Ross, 1967) is the locality constraint active at LF: wh-word in (7a) is interpreted in-situ at LF as a wh-interrogative via unselective binding by the QM in the matrix clause that marks its scope, thus vacuously satisfying Subjacency. Meanwhile, the adjunct wh-word in (7b), not being an indefinite, should undergo movement at LF into Spec of CP of the matrix clause, hence subject to Subjacency, and leading to unacceptability.<sup>4)</sup>

Based on the claim laid out by Choi (2002) for the asymmetric scope taking of the two types of wh-words in Korean, I will thus suggest the following as the formal licensing mechanism of wh-words in multiple wh-questions.

- (8) Multiple wh-questions are well-formed iff wh-words are unselectively bound by the QM or enter into spec head agreement with the QM.

With our discussion of the asymmetric scope taking of the two types of wh-words and the base-generation of the adjunct wh-word in IP adjoined position, now let us consider the examples in (3) as repeated below in (9) for a formal account.

- (9) a. \***Way**      **nwu-ka**      ttenass-ni?  
           why      who-NOM      left-QM  
           \*‘Why did who leave?’  
       b. **wu-ka**      **way**      ttenass-ni?  
           who-NOM      why      left-QM  
           ??‘Who left why?’

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4) A reviewer notes that the asymmetry of grammaticality as in (7) may be accounted for in terms of ECP. However, if we can do without ECP, the introduction of an additional constraint is hardly justified. Moreover the fact that another adjunct wh-word *ettehkey* (how) does not show the island effect further undermines the ECP approach, which is based on argument and adjunct dichotomy.

Ne-nun      [John-i      **ettehkey**      kulin      kulim-ul]      coaha-ni?  
 you-TOP      J-NOM      how      painted      painting-ACC      like-QM

‘What is the means x such that you like pictures John drew by x?’

Consider (9a) first. For the adjunct, I will crucially assume it is base-generated, presumably in IP adjoined position (Hoji, 1985; Saito, 1985; Cheng, 1997).<sup>5)</sup> Given the asymmetric scope taking strategy of the two types of *wh*-words, the QM in (9a) that should have its *wh*-feature discharged for proper interpretation at LF can do so in either of the following two ways, i.e., unselective binding, or spec head agreement. Suppose it enters spec head agreement with the adjunct *wh*-word *way*(*why*) that is raised into SpecCP at LF from IP adjoined position where it is base-generated to have the *wh*-feature of the QM checked off. The LF representation will be the following in (10):<sup>6)</sup>

(10) [<sub>CP</sub> Why<sub>i</sub> [<sub>C</sub> QM<sub>j</sub> [<sub>IP</sub> t<sub>i</sub> [<sub>IP</sub> WH-NOM [<sub>I'</sub> t<sub>i</sub> [<sub>VP</sub> V ]]]]]]

The problem is that the QM, now devoid of the *wh*-feature cannot license the indefinite *wh*-word via unselective binding, hence leading to unacceptability. Alternatively, suppose now the opposite situation where the QM discharges its *wh*-feature via unselective binding of the indefinite *wh*-word. The LF will be the following in (11) under this situation:

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5) The following example in (ia) may serve as an argument for the base-generation of the adjunct *wh*-word in sentence initial position:

- (i) a. Way ne-nun [ CPJohn-i hakkyo-ey kassta-ko saynkakha-ni?  
 why you-TOP John-NOM school-to went-COMP think-QM  
 'What is the reason *x* such that for *x* you think John went to school?'  
 #'What is the reason *x* such that you think John went to school for *x*?'  
 b. Why do you think John went to school?  
 'What is the reason *x* such that for *x* you think John went to school?'  
 'What is the reason *x* such that you think John went to school for *x*?'

The adjunct *wh*-word is construed with respect to the matrix clause only, which sharply contrasts with the corresponding English example below, where the adjunct can be construed with respect to either embedded or matrix clause as illustrated by the informal logical notations. If the adjunct *wh*-word in sentence initial position in Korean is the result of overt movement, that is, from its base-position somewhere in the embedded clause, one cannot account for why it cannot have embedded construal unlike English counterpart.

6) Choi (2002) suggests that QM is base-generated in the head of IP, essentially following Kim (1991), crucially based on the fact that the QM is part of the verbal morphology and hence does not project CP, given the strong projectionist hypothesis by Chomsky (1995) and Pollock (1989) viewing the IP system as an extension of the VP system, with each inflectional morpheme of the verbal morphology heading a separate functional projection within the system. Hence the QM in the head of CP in the LF representation hereafter should be understood as the result of its LF movement from the head of IP, either to bind the indefinite subject *wh*-word or to enter into a spec head agreement relation with the adjunct *wh*-word.

(11) [<sub>CP</sub> Why<sub>i</sub> [<sub>C</sub> QM<sub>j</sub> [<sub>IP</sub> t<sub>i</sub> [<sub>IP</sub> WH<sub>J</sub>-NOM [<sub>r</sub> t<sub>j</sub> [<sub>VP</sub> V ]]]]]]

The problem now is the adjunct wh-word will not be able to check off its wh-feature, hence leading to unacceptability. Hence under either of the two situations, the sentence is correctly predicted to be unacceptable. Now consider the sentence in (9b). Suppose QM enters spec head agreement with the adjunct wh-word *way* (why) that is raised into Spec of CP at LF to have its wh-feature checked off. The LF representation will be the following in (12) in this situation:

(12) [<sub>CP</sub> Why<sub>i</sub> [<sub>C</sub> QM<sub>j</sub> [<sub>IP</sub> WH<sub>J</sub>-NOM [<sub>r</sub> t<sub>j</sub> [<sub>VP</sub> t<sub>i</sub> V ]]]]]]

The result will be the failure in the licensing of the indefinite wh-word in the subject position whose wh-feature should be checked off to be properly interpreted at LF.<sup>7)</sup> Suppose now that the QM in the head of CP has its wh-feature discharged by licensing the indefinite wh-word in the subject position via unselective binding, hence discharging its wh-feature. The LF under this situation will be the one below in (13).

(13) [<sub>CP</sub> Why<sub>i</sub> [<sub>C</sub> QM<sub>j</sub> [<sub>IP</sub> WH<sub>J</sub>-NOM [<sub>r</sub> t<sub>j</sub> [<sub>VP</sub> t<sub>i</sub> V ]]]]]]

In the above LF, the adjunct wh-word cannot have its wh-feature checked off via spec head agreement with the QM since the latter is devoid of the wh-feature by now. Thus ultimately in our system the sentence in (9b) will also be predicted to be unacceptable, which is not correct, however. There is a way to get out of the problem, however. That the acceptability of sentences with an adjunct wh-word within a syntactic island improves when an argument wh-word precedes the adjunct wh-word within the island has been well observed by Nishigauchi (1986, p. 119), and Saito (1994, pp. 204-205). The following examples are from Saito (1994, pp. 204-205):

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7) A reviewer notes that since the wh-feature of a wh-word is [+ interpretable] it may not be a problem even when the wh-feature of the subject wh-word is not checked in (12). It should be noted, however, that [+ interpretable] means its feature is not completely erased after feature checking such that it can enter into feature checking relation more than once.

- (14) a. ?John-wa [[**nani-o naze** katta hito-o]] sagasiteru no?  
 J-TOP what-ACC why bought person-ACC looking for Q  
 Q John is looking for [the person [that bought what why]]  
 b. \*John-wa [[**naze nani-o** katta hito-o]] sagasiteru no?  
 J-TOP why what-ACC bought person-ACC looking for Q  
 Q John is looking for [the person [that bought what why]]
- (15) a. ?John-wa [[Mary-ga **nani-o naze** katta] kara] okotteru no?  
 J-TOP M-NOM what-ACC why bought since angry Q  
 Q John is angry [because Mary bought what why]  
 b. \*John-wa [[Mary-ga **naze nani-o** katta] kara] okotteru no?  
 J-TOP M-NOM why what-ACC bought since angry Q  
 Q John is angry [because Mary bought what why]

Essentially the same observation was made by Chung (1996, p. 149) with respect to a Korean example. I also see that there exists a contrast in acceptability in the following examples involving various islands:<sup>8)</sup>

- (16) a. ?John-i [<sub>NP</sub>[<sub>CP</sub>**nwu-ka way** ssun] chayk-ul ] ilkess-ni?  
 J-NOM who-NOM why wrote book-ACC read-QM  
 ‘What is the person x and the reason y such that John read a book that x wrote for y?’  
 b. \*John-i [<sub>NP</sub>[<sub>CP</sub>**way nwu-ka** ssun] chayk-ul ] ilkess-ni?  
 J-NOM why who-NOM wrote book-ACC read-QM  
 ‘What is the person x and the reason y such that John read a book that x wrote for y?’
- (17) a. ?[<sub>NP</sub>[<sub>CP</sub>**Nwu-ka way** John-ul manna-se]  
 who-NOM why J-ACC met-because  
 Mary-ka hwanass-ni?  
 Mary-NOM got angry-QM  
 ‘What is the person x and the reason y such that that x came late for y angered Mary?’

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8) It should be noted that Chung (1996) observes that in Korean the acceptability of sentences with an adjunct wh-word within a syntactic island improves with an argument wh-word preceding the former. However, his paradigm does not include examples with the reversed word order between the two wh-words.

- b. \*<sub>[NP]<sub>[CP</sub> **Way** nwu-ka John-ul manna-se]</sub>  
       why who-NOM J-ACC met-because  
 Mary-ka hwanass-ni?  
 Mary-NOM got angry-QM  
 ‘What is the person x and the reason y such that that x came  
 late for y angered Mary?’

It was shown that the contrast in acceptability in the sentences in (7), repeated below in (18) follows from the asymmetric scope taking of the two types of *wh*-words: Unlike the argument *wh*-word in (18a) the adjunct *wh*-word *way* (why) in (18b) has to undergo movement into matrix Spec of CP to have its *wh*-feature checked off, hence subject to Subadjacency.

- (18) a. Ne-nun [<sub>[NP]<sub>[CP</sub> **nwu-ka** ssun] chayk-ul] ilkess-ni?  
       you-TOP who-NOM wrote book-ACC read-Q  
       ‘Who is the person x such that you read a book x wrote?’  
 b. \*Ne-nun [<sub>[NP</sub> [<sub>[CP</sub> John-i **way** ssun] chayk-ul] ilkess-ni?  
       you-TOP J-NOM why wrote book-ACC read-QM  
       ‘What is the reason x such that you read a book John wrote for  
       x?’</sub>

The improved acceptability in (16a-17a) thus indicates that the adjunct *wh*-word does not move all the way up to the matrix Spec of CP to check off its *wh*-feature. What is the mechanism responsible for the *wh*-feature checking of the adjunct *wh*-word in (17a-18a)? What I want to suggest is that the adjunct *wh*-word can be licensed somehow by being adjoined to the host argument *wh*-word in a structurally higher position. Let us call this indirect unselective binding in the present terms.<sup>9)</sup> With the mechanism of indirect unselective binding responsible for the *wh*-feature checking of the adjunct *wh*-word, one may safely believe that the same mechanism may also be at work for the sentence in (9b) where the argument *wh*-word is followed by the adjunct *wh*-word like (17a-18a). The LF representation for the sentence in (9b) will be the following in

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9) The idea that the licensing of the adjunct *wh*-word via the argument *wh*-word is not new but have been proposed in the literature although the specific analysis adopted varies (Saito, 1994; Chung, 1996; Sabel, 2001; Grewendorf, 2001)

(19); 10)

(19) [<sub>CP</sub> [<sub>C</sub> QM<sub>ij</sub> [<sub>IP</sub> [<sub>WH<sub>i</sub>-Adjunct</sub> [<sub>WH<sub>j</sub>-NOM</sub>]]<sub>ij</sub> [<sub>T</sub> t<sub>j</sub> [<sub>VP</sub> V t<sub>i</sub> ]]]]]]

The adjunct wh-word *way* (why) in (19) hence needs to resort to the indirect unselective binding mechanism as a last resort, since otherwise the LF will crash. Thus the prediction is that whenever a sentence has an indefinite wh-word followed by the adjunct wh-word *way* (why) with the same scope, it necessarily needs to resort to the indirect unselective binding mechanism as a last resort to save the LF from crash. The indirect unselective binding further predicts that once an island does not intervene between the indefinite wh-word and the adjunct wh-word, the sentence is acceptable, which is confirmed by the example below in (20).<sup>11)</sup>

(20) ?**Nwu**-ka [<sub>CP</sub>Mary-ka **way** chayk-ul sassta-ko] malhayss-ni?  
 who-NOM M-NOM why book-ACC bought-COMP said-QM  
 ‘\*Who said that Mary bought books why?’

The adjunct wh-word can adjoin to the host indefinite wh-word across the embedded clause, hence having matrix scope interpretation with the indefinite wh-word. Our prediction now is that if the adjunct wh-word *way*(why) occurs inside the island, with the indefinite wh-word in the matrix clause, the sentences will not improve in acceptability. This indeed seems to be confirmed by the paradigm below in (21).

(21) a. \***Nwu**-ka [<sub>NP</sub>[<sub>CP</sub>Mary-ka **way** ssun] chayk-ul] ilkess-ni?  
 who-NOM M-NOM why wrote book-ACC read-QM  
 ‘What is the person x and the reason y such that x read a letter that Mary wrote for y?’

10) One may wonder whether the adjunct wh-word so adjoined to the host argument wh-word in (19) does not violate proper binding condition (May, 1977) in case c-command is construed in the sense of Reinhart (1976). Assuming the index of the adjunct wh-word is percolated into the whole wh-phrase, one may suggest it does not necessarily constitute proper binding condition violation since the whole wh-phrase with the composite index *i* and *j* can serve as a possible antecedent for the trace of the adjunct wh-word, which I should admit is rather unconvincing.

11) Saito (1994) observes that a Japanese example similar to (20) is marginal. The intuition as reported regarding (20) is not uncontroversial. A reviewer notes that the sentence is marginal.

- b. \***Nwu**-ka [<sub>CP</sub>Mary-ka Tom-ul **way** manna-se] hwanass-ni?  
 who-NOM M-NOM T-ACC why met-because got angry-QM  
 ‘What is the person x and what is the reason y such that x got angry because Mary met Tom for y?’

The unacceptability in the above sentences in (21) is attributed to the fact that the adjunct wh-word cannot be licensed via indirect unselective binding across an island, namely, adjunct island (Huang 1982). Our account can also extend to the examples in (4) as repeated in (22) below.

- (22) a. John-i                **nwukwu**-lul                **way**                mannass-ni?  
 John-NOM                whom-ACC                why                met-QM  
 \*‘Whom did John meet why?’  
 b. \*John-i                **way**                **nwukwu**-lul                mannass-ni?  
 John-NOM                why                whom-ACC                met-QM  
 \*‘Why did John meet whom?’

*Way* (why) in (22a) can be licensed via indirect unselective binding, i.e., by being adjoined to the host indefinite wh-word, while the option is not available in (22b) given that the host wh-word is structurally lower than the former.<sup>12)13)</sup> Now let us turn to critically review the past proposals by Saito (1994) and Watanabe (1992), which are crucially based on the assumption that wh-words in Korean type languages are like quantifiers

12) It is fair to mention the proposal in Chung (1996), albeit briefly. He claims that wh-words are wh-interrogatives underlyingly, contrary to the current proposal. Moreover, he crucially relies on the assumption that clause internal scrambling is cost free and thus completely optional. Furthermore, he takes the position that the wh-feature of the QM is accessible for spec head agreement, even after it discharges its wh-feature via binding, which is spurious, indeed, given the standard assumption that the wh-feature of the QM is not accessible once its wh- feature is checked off (discharged) (see Chomsky, 1995). To the extent that he also suggests that the adjunct wh-word can be licensed by being adjoined to the host argument wh-word at LF, his proposal, however, is similar to the proposal as in Nishigauchi (1990) and Saito (1994), including the present one. His proposal, however, is not convincing, since one cannot really make sure whether the LF movement of the adjunct wh-word into Spec of CP in (22b) to check off its wh-feature or that of the adjunct wh-word into the host argument wh-word in (22a) is more economical, given that the economy measurement is not defined rigorously in his proposal.

13) A reviewer wonders why the indefinite wh-word does not undergo scrambling such that the adjunct wh-word can adjoin to the indefinite wh-word as a result of which the adjunct wh-word can be licensed via indirect unselective binding. I do not have a good answer for this. It should be noted, however, that scrambling is an overt operation (Chung, 1996).

in that the scope relation established at some point should be maintained throughout the derivation, that is, till at LF.

### 3. Relational Approach

#### 3.1. LF Wh-movement Hypothesis

Saito (1994) assumes that *wh*-words undergo LF movement across the board, following Huang (1982). He accounts for the contrast in acceptability as in (1-2), repeated below in (23-24) in terms of relation preservation between the two types of *wh*-words, which as he claims should be maintained throughout the derivation, essentially following Saito (1982).

- (23) a. **Dare-ga**      **naze**      soko-ni      itta no?  
           who-NOM    why        there-to    went Q  
           \*‘Who went there why?’  
       b. \***Naze**    **dare-ga**      soko-ni      itta no?  
           why      who-NOM    there-to    went Q  
           \*‘Why did who go there?’
- (24) a. John-ga      **nani-o**      **naze**      katta no?  
           J-NOM      what-ACC    why        bought Q  
           \*‘What did John buy why?’  
       b. \*John-ga      **naze**      **nani-o**      katta no?  
           J-NOM      why        what-ACC    bought Q  
           \*‘Why did John buy what?’

Saito (1994) crucially assumes that the sentence in (24a) is derived via scrambling from (24b) with the crucial assumption that an adjunct *wh*-word is not scrambled, following Saito (1982) (also see Hoji, 1985).<sup>14</sup> The sentences in (23) are all canonical sentences with no scrambling, according to him. His claim for the relation preservation for canonical *wh*-questions is based on the well-known scopal fact involving sentences

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14) Saito (1994) assumes that the adjunct *wh*-word in (24b) is base-generated, as it appears at the surface. Otherwise the sentence will also be predicted to be acceptable. See Saito (1994, p. 234 fn.14) and also see Saito (1985) and Hoji (1985).

with QPs. The scope relation at S structure in a canonical sentence as in (25a-26a) cannot be reversed in Korean type languages, while the scope relation of the QPs in the scrambled sentences in (25b-26b) can be reversed. (Hoji, 1985; Kim, 1991; Aoun & Li 1993).

- (25) a. Dareka-ga            daremo-o            aisiteiru  
           someone-NOM everyone-ACC    love  
            $\exists > \forall$ ,  $*\forall > \exists$
- b. Daremo-o            dareka-ga            aisiteiru  
           someone-ACC    someone-NOM    love  
            $\exists > \forall$ ,  $\forall > \exists$
- (26) a. Nwukwun-ka            motun salam-ul        chotayhassta.  
           someone-NOM        everyone-ACC        invited  
            $\exists > \forall$ ,  $*\forall > \exists$
- b. Motun salam-ul        nwukwun-ka            chotayhassta.  
           everyone-ACC        someone-NOM        invited  
            $\exists > \forall$ ,  $\forall > \exists$

Hence according to him, the relation between the two wh-words in scrambled wh-question in (24a) is free in principle with either one of the two wh-words can precede the other at LF. However, ECP requires the adjunct wh-word to move into comp first such that the constraint is not violated, given the comp indexing mechanism as in Aoun, Hornstein and Sportiche (1980) he is tacitly assuming.<sup>15</sup> When it comes to the canonical sentence in (24b) with no scrambling, where the relation preservation thus should be maintained, the argument wh-word should move first into comp to the effect that the subsequent movement of the adjunct wh-word does not violate relation preservation at LF. As a result, this leads to the ECP violation, since the trace of the adjunct wh-word cannot be antecedent governed, given comp indexing mechanism.

The proposal for relation preservation between wh-words in canonical sentences as in (24b) is flawed, however. As one can notice, the scope of the two wh-words in (27) is the same, as can be confirmed by the pattern of answer in (28), given the standard assumption that the scope

15) Comp indexing mechanism according to Aoun Hornstein and Sportiche (1980, p. 80) is the following: [COMP Xi ]  $\rightarrow$  [COMP<sub>i</sub> Xi ] iff COMP dominates only i-indexed category.

of a *wh*-word is indicated by the answer to it (Baker, 1970). Hence, the reasoning behind the proposal that *wh*-words are like quantifiers and that the relation of *wh*-words should be maintained till at LF is unmotivated, indeed.

- (27) **Dare-ga naze** okurete kita ka?  
 who-NOM why late came Q  
 'who came late why?'

- (28) John-ga juutaino seide okurete kita  
 J-NOM heavy traffic due to late came  
 'John came late due to heavy traffic.'

Moreover, according to Saito (1994), the improved acceptability of the sentence in (16a) as compared with the one in (16b), repeated in (29ab) respectively should be attributed to the adjunction of the adjunct *wh*-word to the host argument *wh*-word such that the whole *wh*-expression that is now an argument *wh*-word, can undergo LF movement into matrix *comp*, voiding ECP violation in (29a), while this option is not available in (29b) since the host *wh*-word is structurally lower than the adjunct *wh*-word. Given that (29a) (as well as (29b)) is a canonical sentence according to him, the adjunction of the adjunct *wh*-word in (29a), however, constitutes an outright violation of relation preservation.

- (29) a. ?John-i [<sub>NP</sub>[<sub>CP</sub>**nwu-ka way** ssun] chayk-ul ] ilkess-ni?  
 J-NOM who-NOM why wrote book-ACC read-QM  
 'What is the person x and the reason y such that John read a book that x wrote for y?'  
 b. \*John-i [<sub>NP</sub>[<sub>CP</sub>**way nwu-ka** ssun] chayk-ul ] ilkess-ni?  
 J-NOM why who-NOM wrote book-ACC read-QM  
 'What is the person x and the reason y such that John read a book that x wrote for y?'

The acceptability of the example in (29a), although it violates relation preservation between the two *wh*-words, strongly indicates that the constraint of relation preservation cannot be part of the grammar.

### 3.2. Two Level Movement Hypothesis

Watanabe (1992) argues that *wh*-phrase uniformly undergoes movement at S structure cross-linguistically, in contrast to Huang (1982), who argues that *in situ wh*-words undergo movement at LF exactly the way the *wh*-phrase overtly undergoes movement as in English. Thus *wh-in-situ* languages like Japanese are hypothesized to have a null operator movement at the overt syntax with the remnant *wh*-phrase left behind undergoing movement at LF immune to Subadjacency. One of the main motivations for the overt null operator movement for Japanese is what he calls anti-superiority effect. The terminology ‘anti-superiority’ is based on his two level movement hypothesis for *wh*-questions in Japanese. As shown in (30), the acceptability of the multiple *wh*-questions in English improves when there is a *wh*-word, which cannot c-command the trace of a *wh*-word that underwent movement at S structure.

- (30) a. Who<sub>i</sub> did you persuade t<sub>i</sub> to give what books to Bill?  
 b. \*?What books<sub>i</sub> did you persuade who to give t<sub>i</sub> to Bill?  
 c. ?What books<sub>i</sub> did you persuade who to give t<sub>i</sub> to whom?

Thus this contrast in (30) may lead one to the generalization in (31), according to Watanabe (1992, p. 79).

(31) Superiority

A multiple question is well formed in English only if at S-structure there is a *wh*-phrase that does not c-command the trace of the *wh*-phrase moved into the target Spec of CP.

Assuming that a *wh*-word in Japanese has null operator movement at S-structure and that the null operator of the adjunct *wh*-word should move into the Spec of CP first for ECP reason, given the comp indexing mechanism as in Aoun, Hornstein and Sportiche (1980) Watanabe is assuming, the contrast in acceptability as in (23-24) in Japanese may lead to the generalization in (32).

(32) Anti-superiority

A multiple question is well formed in Japanese only if at S structure there is a *wh*-phrase which is not c-commanded by the *wh*-phrase from which the pure *wh* is already moved into the target Spec of CP.

Thus what is stated in (31) is essentially the mirror image of what is stated in (32): The trace of a *wh*-word in English should *c-command* another *wh*-word for the multiple question to be well formed. A *wh*-word should *c-command* the trace of a null operator of another *wh*-word in Japanese for the multiple *wh*-question to be well formed, hence leading to his terminology 'anti-superiority' for sentences in (23-24) for Japanese. According to him, once anti-superiority is violated, a multiple *wh*-question cannot be well formed in Japanese. Watanabe (1992) thus accounts for the contrast in acceptability in Japanese as in (23-24) in terms of two level movement hypothesis: null operator movement at S structure and subsequent raising of the *wh*-words at LF. The generalization in (32) follows from ECP and two other constraints, which he claims to be part of universal grammar: relation preservation and well formedness condition on *wh*-phrase at LF, as stated in (33-34), respectively.

(33) Relation Preservation

A relation established at certain point in the derivation must be maintained throughout (Watanabe, 1992, p. 94).

(34) Condition on a Well-Formed *Wh*-Phrase at LF

A pure *wh*-operator and the associate indeterminate phrase alone must form a category in order to function as a *wh*-phrase.  
(Watanabe, 1992, p. 96)

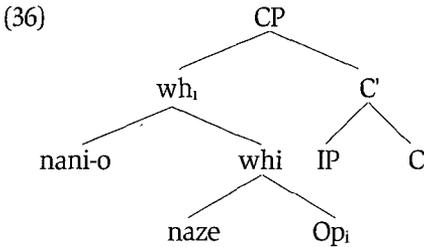
To mention briefly the reasoning behind the two constraints, the constraint in (33) essentially says the scope relation at S-structure should be maintained throughout in a language like Japanese.<sup>16)</sup> The relation between the two *wh*-words is expressed in terms of segment-command and is defined in (35) (Watanabe, 1992, p. 92).

(35)  $\alpha$  segment-commands  $\beta$  iff  $\alpha$  does not dominate  $\beta$  and every segment that dominates  $\alpha$  dominates  $\beta$  where  $\alpha$  and  $\beta$  are categories.

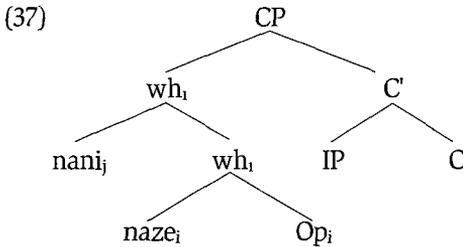
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16) It should be noted that the relation preservation in Watanabe (1992) is slightly different from the one in Saito (1994) in that relation preservation established at S structure should be maintained throughout the derivation in the former, while the relation as established at D structure should be maintained throughout the derivation in the latter.

The constraint in (34) has to do with the observation that the null operator and the remnant wh-phrase should eventually form a single unit at an abstract level, i. e. at LF, thus leading to the LF pied-piping version in Japanese of the overt pied-piping in English which requires the overt movement of the null operator together with the remnant wh-word for PF convergence. Let us see how the two constraints in (33-34) with the ECP conspire to account for the contrast of acceptability of the two sentences in (24) for example. The null operator of the adjunct wh-word in (24a) should move first to satisfy ECP at S structure with subsequent movement of the adjunct wh-word followed by the argument wh-word into Spec of CP (or comp). As one can see, the segment command relation between the two wh-words in (36), which is the relevant LF comp configuration for (24a) is that *nani* (what) segment-commands *naze*(why) at LF. The former segment-commands the latter since the first segment dominating *nani*, the higher *whi* also dominates *naze*. However the latter cannot segment command the former since the lower *whi* which dominates *naze* does not dominate *nani*. Thus the relation established at S structure is maintained at LF too. Moreover, ECP is satisfied since the comp indexing mechanism allows the antecedent government by *naze* of its own trace.



Now consider the LF comp configuration in (37) for (24b). The structure results in the violation of relation preservation, since *nani* (what) segment-commands *naze* (why) at LF with the segment-command relation established at S structure reversed, hence ungrammaticality.



To maintain the segment c-command relation, the position of the two wh-words should be changed, which however leads to the violation of ECP. Several nontrivial problems, however, arise in Watanabe's proposal, which leads one to doubt the validity of two level movement hypothesis for the multiple wh-questions.

Conceptually, relation preservation in Watanabe (1992) is based on the idea that the scope relation between the two wh-words established at S structure cannot be reversed, hence treating wh-words as if they were quantifiers, essentially following the proposal in Saito (1982), which we already showed is problematic.

Empirically, as shown in section 2, when an argument wh-word is added before the adjunct wh-word inside the island, the sentences improve considerably in acceptability as shown by the contrast in acceptability in (14-17), with Korean examples repeated in (38-39).

- (38) a. ?John-i [<sub>NP</sub>[<sub>CP</sub>**nwu-ka way** ssun] chayk-ul ] ilkess-ni?  
 J-NOM who-NOM why wrote book-ACC read-QM  
 'What is the person x and the reason y such that John read a book that x wrote for y?'  
 b. \*John-i [<sub>NP</sub>[<sub>CP</sub>**way nwu-ka** ssun] chayk-ul ] ilkess-ni?  
 J-NOM why who-NOM wrote book-ACC read-QM  
 'What is the person x and the reason y such that John read a book that x wrote for y?'
- (39) a. ?[<sub>NP</sub>[<sub>CP</sub>**Nwu-ka way** John-ul manna-se]  
 who-NOM why J-ACC met-because  
 Mary-ka hwanass-ni?  
 Mary-NOM got angry-QM  
 'What is the person x and the reason y such that that x came late for y angered Mary?'

- b. \*<sub>[NP]<sub>CP</sub></sub>
- |          |             |          |             |
|----------|-------------|----------|-------------|
| Way      | nwu-ka      | John-ul  | man-na-se]  |
| why      | who-NOM     | J-ACC    | met-because |
| Mary-ka  | hwanass-ni? |          |             |
| Mary-NOM | got         | angry-QM |             |
- ‘What is the person x and the reason y such that that x came late for y angered Mary?’

It seems that Watanabe (1992) cannot give an adequate account for this contrast as in (38-39): In Watanabe’s system, the DP including the relative clause, regardless of how many wh-words the relative clause contains counts as a single wh-word. Hence relation preservation does not say anything for these sentences, which indicates that relation preservation cannot be the right generalization for the above examples in (38-39). What is more, given the null operator from Spec DP at S structure into comp with subsequent movement of the whole DP where it undergoes absorption with the null operator, Watanabe predicts the examples in (38-39) should be unacceptable since the DP includes the relative clause with an adjunct wh-word, which will prevent absorption eventually at LF. However, as shown by the contrast in acceptability, the order between the two wh-words within the relative clause crucially counts, meaning that not the whole DP including the relative clause with wh-words but individual wh-words inside the relative clause counts, further suggesting that null operator movement approach cannot be the right generalization for the data in (38-39).

#### 4. Conclusion

In this paper, I tried to show that the so called anti-superiority effect can receive a better account, once the asymmetric scope taking strategy of the two types of wh-words in Korean as claimed by Choi (2002) is recognized. It was demonstrated that the relational approach by Watanabe (1992) and Saito (1994) as crucially based on the idea that the wh-words, being like quantifiers, have their relation established at some point maintained throughout the derivation is flawed, given that wh-words in Korean type languages, unlike quantifiers, have the same scope in the same clause. It was also shown that there are some examples which violate relation preservation but somehow are acceptable,

which strongly suggests that relation preservation cannot be part of the grammar.

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