

# WH-Movement and the Interpretation of Multiple Interrogation

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## 1. Introduction: WH-Movement and Pair List Reading

Boškovic (1998a, 1998b) argues that there is a correlation between the unavailability of single pair reading in multiple interrogation and WH-movement to [Spec, CP]. See, for instance, the following WH-question:

- (1) Who bought what?

As is observed in Comorovski (1989, 1996), Hornstein (1995), and Wachowicz (1974) among others, multiple WH-questions like (1) require pair list reading. Thus an appropriate answer to it would be something like “Xavier bought a xylophone, York bought a yacht and Zachary bought Zima,” but not a single pair such as “Quentin bought Q-Tips.”

In other words, the above question cannot be felicitously asked, say, in a situation like the following: Tom is in a store and in the distance sees someone buying some item, but does not see who it is and does not see what exactly is being bought. In this situation Tom would not utter (1) to identify the purchaser and the item.<sup>(1)</sup>

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(1) A felicitous way to ask the intended question would be a matching question like “Who bought something, and what was it?”

This obligatoriness of pair list reading is not universal, however. A counterexample can be found in Japanese and Chinese:

(2) a. (Japanese)

Dare-ga nani-o katta no?

who-nom what-acc bought Q

‘Who bought what?’

b. (Chinese)

Shei mai-le shenme?

who buy-ASP what

‘Who bought what?’

Both questions do not necessarily require but allow pair list reading.

One clear difference between English on one hand and Japanese and Chinese on the other is that in the former WH-movement is necessary but not in the latter. Given this parallelism Boškovic provides the following generalization, which can be restated in the table below:

(3) WH-movement forces pair-list reading.

	WH-movement	WH-in-situ
pair list reading forced	yes	no

This generalization is further supported by WH-questions in French. French can employ either the in-situ or the WH-movement strategy in WH-questions. According to Boškovic, single pair answers are possible only with in-situ multiple WH-questions such as (4a), but not the ones like (4b), which require pair list reading:

(4) a. Il a donné quoi a qui?

he has given what to whom

“What has he given to whom?”

- b. Qu’a-t-il      donné a qui?  
what-has-he given to whom

This contrast clearly suggests that WH-movement is the key to the unavailability of single pair answers.<sup>(2)</sup>

## 2. A Problem: Japanese as a WH-Movement Language

Although Boškovic’s generalization is interesting, it faces difficulty if we look at WH-questions more closely. Recall that one of the strong motivations for (4) is the observation that neither languages like Japanese nor Chinese involve WH-movement. This has been questioned by some linguists, however.

There is a general consensus that Japanese displays the WH-island effect while Chinese does not. Consider the following contrast:

- (5) a. (Japanese)  
?? John-wa [Mary-ga nani-o katta ka dooka]  
John-top Mary-nom what-acc bought whether  
shitteiru no  
know Q  
‘What is the thing x such that John knows whether Mary bought x?’
- b. (Chinese)  
ni xiang-zhidao [Akiu mai-bu-mai shenme] (ne)  
you want-know Akiu buy-not-buy what Q<sub>wh</sub>  
‘What is the thing x such that you wonder whether Akiu will buy x?’  
(5b) is taken from Tsai (1999: 60))

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(2) He further observes that pair list reading is obligatory in German and Bulgarian, where WH-movement necessarily takes place, while single pair reading is allowed in Hindi and Serbo-Croatian, neither of which involves the movement of WH-phrase to [Spec, CP] in his analysis.

Note that Japanese patterns with English with respect to the WH-island effect:

- (6) ?? What do you wonder [whether John saw *t*]?  
(Lasnik and Saito (1992: 11))

This similarity makes it tempting to treat Japanese as a language with WH-movement.

This line of inquiry has already been pursued in the literature. One influential approach is provided by Watanabe (1992). He argues that Japanese WH-questions involve the movement of the pure WH-operator originated in [Spec, DP], being subject to certain locality constraints.<sup>(3)</sup> In his system the structure of Japanese WH-phrases is like the following (order irrelevant):

- (7) [DP *Op* D [ ... nani ... ]]

This mechanism helps account for the following contrast:

- (8) a. John-wa [Mary-ga nani-o katta ka dooka]  
John-top Mary-non what-acc bought whether  
dare-ni tazuneta no  
who-dat asked Q  
'Who did John ask [whether Mary bought what]?'  
b. ?? John-wa [Mary-ga nani-o katta ka dooka]  
John-top Mary-non what-acc bought whether  
Tom-ni tazuneta no  
Tom-dat asked Q  
'What did John ask Tom [whether Mary bought *t*]?'

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(3) This mechanism would not seem to be just a convenient tool for explaining certain locality effects in Japanese. In fact it has been adopted by some linguists to deal with some island phenomena found in several languages, some of which are hardly related to Japanese. See, for instance, Aoun and Li (1993a, 1993b) for Chinese, Basilico (1998) for Iraqi Arabic and Slave, Cole and Hermon (1998) for Malay, and Terada (1996) for Hindi.

(Watanabe (1992: 12))

In the (a) example the movement of the pure WH-operator takes place from *dare* in the main clause, crossing no islands. In the (b) example, however, the operator movement takes place from *nani* in the embedded clause, crossing the WH-island, leading to deviance.

This is exactly the same as what happens in English:

- (9) a. Who did John ask *t* whether Mary bought what?  
b. ?? What did John ask Tom whether Mary bought *t*?

(Watanabe (1992: 13))

In the good (9a) WH-movement takes place from the argument position in the main clause, crossing no islands. In the marginal (9b) the moved element is *what* in the embedded clause, which results in crossing the WH-island.

It seems fair then to conclude that Japanese involves movement of WH-operator to [Spec, CP].<sup>(4)</sup> Now (3) has to be slightly modified as in the following:

- (3') Movement of the whole WH-phrase forces pair list reading.

	WH-movement		WH-in-situ
	whole phrase	WH-operator	
pair list reading forced	yes	no	no

This poses a question to Boškovic's generalization, but he simply ignores the contrast as well as this WH-operator based account for it, which is a clear threat. In the next section I attempt to provide a solution.

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(4) Similar analyses have been proposed by Hagstrom (1998), Hirata (1998), Maki (1995), and Tonoike (1992), who claim that what moves is the WH-particle *ka*.

### 3. A Solution

In this section I make an attempt to derive the revised generalization in (3'). Let us begin by considering the difference between English and Japanese WH-questions.

In English the element that moves to [Spec, CP] is the whole WH-phrase, whereas in Japanese it is the pure WH-operator. That is to say, the WH-phrase in English, when it WH-moves, carries along with it non-WH items like phi-features and quantificational features, but in Japanese what moves is the mere WH-part and nothing else. The key to the forced pair list reading must lie in the non-WH-part.

To provide a solution, Hornstein's (1995) approach to multiple interrogation would be helpful. He suggests that in questions like (1), where pair list reading is obligatory, the WH-phrase that has moved to [Spec, CP] serves as the generator introducing the list and the in-situ WH-phrase is functionally interpreted in the sense of Chierchia (1991, 1993), the source of pair list reading. Thus under Hornstein's system the structure of (1) is roughly the following:

(1') [CP Who<sub>1</sub> [IP *t*<sub>1</sub> bought [*pro*<sub>1</sub> N]]]

In (1') the WH-moved phrase in [Spec, CP] serves as the generator, and the in-situ WH-phrase is interpreted as containing a pronoun bound by the generator so that functional/pair list reading can be obtained.

In Oguro (1998a), following the idea in Comorovski (1989, 1996) and Kiss (1993) that in English multiple interrogation, WH-moved phrases function as universal quantifiers, I suggested the following structure for (1):

(1'') [CP WH everyone<sub>1</sub> [IP *t*<sub>1</sub> bought [*pro*<sub>1</sub> N]]]

This structure clearly captures the desired effect because it shows that what is responsible for the obligatory pair list interpretation is the generator or universal

quantifier in [Spec, CP]. Important to note here is that this structure is possible only when the entire WH-phrase moves, a strategy unavailable in Japanese and Chinese.

Having seen a case where the whole WH-phrase moves, let us now turn to one where the pure WH-operator moves to [Spec, CP], namely, Japanese WH-questions. Since movement of the entire WH-phrase does not take place, structures like (1'') are not available. With the generator absent, pair list reading is not forced, hence the availability of single pair reading. As for the interpretation of the in-situ WH-phrases, I follow Tsai (1994, 1999) and assume that it is guaranteed with recourse to the WH-operator, which functions as unselective binder in the sense of Nishigauchi (1990) and unselectively binds the in-situ WH-phrases, which does not force pair list reading or disallow single pair reading.

Tsai further claims that the pure WH-operator is also at work not only in Japanese but also in Chinese. This seems to be natural, since Chinese also needs some kind of operator variable relation for questions to be properly interpreted. This approach, however, raises the question as to why Chinese WH-questions do not exhibit the WH-island effects, which Japanese WH-questions do. To answer this question he suggests that while the WH-operator in Japanese moves to [Spec, CP], the Chinese counterpart originates in [Spec, CP]. In this system, the Chinese WH-operator does not move, showing no locality constraints, a simple logic. Let us accept this appealing suggestion.

Let us summarize the discussion so far. English multiple WH-questions require pair list reading because the entire WH-phrase moves to [Spec, CP] and functions as the generator introducing the list so that in-situ WH-phrases can be properly interpreted. In the case of Japanese, the moved element is the pure WH-operator, which is not a generator, so pair list reading is not obligatory and single pair reading is allowed. The same thing can be said of Chinese questions except that the operator is originated in [Spec, CP], with no movement involved. Therefore the modified generalization in (3') is derived.

#### 4. Another Type of WH-Phrase in [Spec, CP]

In the previous section I provided the reason why the modified generalization in (3') holds. Specifically, I suggested that the obligatoriness of pair list interpretation depends on the movement of the entire WH-phrase, not just the WH-part, because the entire phrase is the source of pair list reading, functioning as the generator introducing the list, or universal quantifier.

Recall that Boškovic's original generalization cares about movement. We have seen, however, that movement of an item to [Spec, CP] does not necessarily force pair list reading and that the obligatoriness of this reading requires the entire WH-phrase to be in that position.

Now a question emerges. What kind of reading do we get if the entire WH-phrase is originated in [Spec, CP]? Boškovic would predict that single pair list reading is possible since movement does not take place. Our approach predicts the contrary because we know that movement itself is not the key and there seems to be nothing that would keep the entire WH-phrase from functioning as the generator or universal quantifier.

In this section I attempt to answer this question. The discussion has to do with the behavior of resumptive pronouns.<sup>(5)</sup>

Resumptive pronouns are instances of pronouns appearing in a position normally occupied by a gap. As extensively discussed in Sells (1984), resumptive pronouns are productive in languages such as Swedish, Hebrew, Irish and Welsh.<sup>(6)</sup> In the case of English, the distribution of these pronouns are extremely restricted. Some speakers do not accept them at all. Here let us focus on the dialect which does allow

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(5) The following argument is based on Oguro (1998b).

(6) Sells (1984) claims that English resumptive pronouns are quite different from those employed in other languages like Swedish, Hebrew, Irish and Welsh. In fact he refers to the English pronouns in question as not resumptive but intrusive pronouns. I will continue to call them resumptive pronouns for expository purposes, however.



their occurrences.

In the relevant dialect of English, resumptive pronouns are prototypically utilized to save cases which would otherwise yield an island violation. Observe the following contrast:

- (10) a. \* Which guys did you say that you didn't know whether \_ were gonna be there or not?  
b. ? Which guys did you say that you didn't know whether *they* were gonna be there or not?  
(Kayne (1983: 240))

In the (a) example WH-movement of a subject takes place from a WH-island, hence the severely degraded status. The (b) example involves a resumptive pronoun instead of a gap, thereby canceling the island effect. The lack of the island effect, which is a sign of movement, indicates the lack of movement, which in turn entails that the WH-phrase binding the resumptive pronoun is originated in [Spec, CP].<sup>(7)</sup>

With this in mind, let us see whether or not single pair reading is allowed in such an environment. The result is somewhat surprising:

- (11) \* Who were you wondering whether *he* bought what?  
(Pesetsky (1995: 26))<sup>(8)</sup>

Even to those who accept resumptive pronouns this example is seriously degraded. This contrast seems to suggest that the whole WH-phrase originated in [Spec, CP], unlike the moved counterpart, is incompatible with multiple interrogation, which

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(7) The story might not be so simple, if we consider Selayere, an Austronesian language which has null resumptive A'-dependencies. According to Finer (1997), in this language a WH-element binding the null resumptive pronoun is originated in an A'-position and then moves to [Spec, CP], which is supported by the morphological considerations regarding agreement and the absence of the expected island effects. Since there is no such morphological differences, I assume that the WH-phrase in (10b) is originated in [Spec, CP].

(8) Pesetsky leaves the deviance in this example as a puzzle to his system.

neither of the two views predicts.

One might claim that the deviance found in the example above comes from the combination of the occurrence of resumptive pronouns, unusual elements in English, and multiple interrogation, which are rather marked phenomena. That is to say, (11) is simply much too unusual and complicated to process or judge. There is, however, evidence against this seemingly plausible claim. The two marked situations can coexist in a certain environment, as shown by the acceptability of the following:

(12) Who were you wondering where *he* bought what?

(The judgement is due to David Pesetsky (personal communication))

This example is fine. Notice, however, that it is acceptable only on the reading in which the in-situ WH-phrase takes embedded scope. In other words, a felicitous answer to (12) would be “John” and the question cannot be interpreted as being paired with *who*, which binds the resumptive pronoun. It does not have the reading where *what* has same scope as *who*, which originates in [Spec, CP] and binds the resumptive pronoun. It might seem then that these two sentences under consideration have nothing useful to tell us about our question regarding the (un)availability of single pair, since the WH-phrase base generated in [Spec, CP] disallows occurrences of in-situ WH-phrases taking the same scope.

These examples, however, can be taken to support our view over the original one. Let us see what kind of structures these questions have according to the analysis provided in the previous section. The structure of (11) would be something like the following:

(11') \* WH everyone<sub>1</sub> were you wondering whether *he*<sub>1</sub> bought [*pro*<sub>1</sub> N]

A rough structure of (12), under the disallowed reading where the in-situ phrases takes matrix scope, is given below:

(12') \* WH everyone<sub>1</sub> were you wondering where *he*<sub>1</sub> bought [*pro*<sub>1</sub> N]

In these structures the resumptive pronouns are bound by the universal quantifier in operator position.

It has been independently observed that resumptive pronouns cannot be bound by universal quantifiers:

(13) a. I'd like to meet the linguist that Mary couldn't remember if she had seen *him* before

b. \* I'd like to meet every linguist that Mary couldn't remember if she had seen *him* before

(Sells (1984: 11-12))

Thus the examples in (11) and (12) indicate that the WH-phrase in [Spec, CP] necessarily function as universal quantifier in multiple interrogation, even if it is base generated in that position. This means that pair list reading is forced, which happens to be blocked due to the interpretive requirement of the resumptive pronoun. We have an additional argument for our view, and we may have the following generalization, which is a modification of (3'):

(3'') The presence of the whole WH-phrase in [Spec. CP] forces pair list reading.

	whole WH-phrase		WH-operator	
	movement	base generation	movement	base generation
pair list reading forced	yes	yes	no	no

## 5. Japanese Revisited

In this section we turn to Japanese and see what the generalization just obtained in (3") can say about Japanese WH-questions. So far we have assumed, following Watanabe (1992), that in Japanese WH-questions [Spec, CP] is occupied by the pure WH-operator. It has been suggested, however, that there are cases where an entire WH-phrase rather than its WH-part can occupy [Spec, CP]. Let us see what kind of cases they are.

Takahashi (1993) notes the following contrast:

- (14) a. John-wa [<sub>CP</sub> Mary-ga nani-o tabeta ka]  
John-top Mary-nom what-acc ate Q  
shiritagatteiru no?  
wants to know Q  
'Does John want to know what Mary ate?' or  
'What does John want to know whether Mary ate?'
- b. Nani<sub>I</sub>-o John-wa [<sub>CP</sub> Mary-ga *t*<sub>1</sub> tabeta ka]  
shiritagatteiru no?  
'What does John want to know whether Mary ate?'
- (Takahashi (1993: 657))

According to Takahashi in the (a) example the WH-phrase *nani* can either take matrix or embedded scope, as shown by the translations. (The embedded scope is preferred, though.) This ambiguity disappears in the (b) example, where the WH-phrase is long-scrambled to the initial position of the matrix clause. It only has the reading where the scrambled WH-phrase takes matrix scope. This is inconsistent with the general property of scrambling, since normally scrambled phrases can be "reconstructed" in that they may behave as if they were scrambled back to their original position.

Note that this loss of “reconstruction effect” is quite reminiscent of the property of WH-movement. Consider the following:

(15) ?? What do you know [who ate *t*]?

This question is necessarily interpreted as a WH-question but not as a *yes/no* question, which indicates the impossibility of the relevant reconstruction effect in true WH-movement. Given this he claims the following:

(16) Movement of a WH-phrase to the initial position of a clause headed by a [+WH] COMP counts as WH-movement in Japanese.

(Takahashi (1993: 659))

A natural question here is what this statement has to say about what we have seen in the previous sections.

If the statement is correct, then it must be that if a WH-phrase is scrambled to the initial position of an interrogative clause, the entire WH-phrase ends up in [Spec, CP]. Then our analysis predicts that in multiple interrogation with a WH-phrase scrambled to the initial position, single pair reading disappears. Let us see if this is so:

(17) Dare-ni kimi-wa [John-ga *t* nani-o ageta to]  
who-dat you-top John-nom what-acc gave comp  
omou no?  
think Q

‘To whom do you think that John gave what?’

Despite the expectation, this question allows single pair reading and pair list reading is not necessarily required. Under our analysis this fact strongly suggests that the scrambled WH-phrase does not occupy [Spec, CP]. Now the question is how this discrepancy is circumvented.

Recently Takahashi’s analysis has been questioned by researchers, and there

seems to be a consensus that the scrambled WH-phrase has in fact not reached [Spec, CP], which lends support to our analysis. Here I give two such critical approaches.

One has to do with the judgement regarding (14b). Maki and Ochi (1998) disagree with Takahashi (1993) and claim that the question is in fact ambiguous. Then the scrambling does not count as WH-movement. The WH-phrase never occupies the Spec of the matrix CP.

Another position is to assume that while the judgement is correct, the scrambled WH-phrase never reaches the Spec. This possibility is explored by Kuwabara (1998), who argues that the scrambled WH-phrase only adjoins to IP, and the movement of the WH-part takes place from that position. Under this approach, the scopal unambiguity is guaranteed, while [Spec, CP] is not occupied by the entire phrase.<sup>(9)</sup> To be concrete, (14b) would be schematized as follows:

- (14') b. [<sub>CP</sub> Op<sub>1</sub> [<sub>IP</sub> [<sub>DP</sub> t<sub>2</sub> Nani<sub>1</sub>]-o [<sub>IP</sub> John-wa [<sub>CP</sub> Mary-ga t<sub>1</sub> tabeta ka] shiritagatteiru no]]]

This view is supported, for instance, by the following example:

- (18) Sono hon-o dare-ni kimi-wa [John-ga ageta  
the book-acc who-dat you-top John-nom gave  
to] omou no?  
comp think Q  
'To whom do you think that John gave the book?'

If the scrambled phrase has to move to [Spec, CP], then so does the non WH-phrase “the book,” a situation that must be avoided. No problem arises if the movement to [Spec, CP] does not take place in the first place. Thus what is to blame is the very

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(9) See Kuwabara (1998) for detailed analysis.

assumption that WH-scrambling counts as WH-movement.

To summarize, our approach tells us that the availability of single pair reading in (17) indicates that scrambled WH-phrases do not occupy [Spec, CP], despite Takahashi's (1993) claim. Recent studies, though they differ from each other in several respects, suggest that the present analysis should be on the right track.<sup>(10)</sup>

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(10) The situation is exactly the same in Korean. It is well known that the syntax of Korean is remarkably similar to that of Japanese. The availability of scrambling is no exception. In fact WH-scrambling in Korean has been examined in the literature. As far as I know, there are two approaches, and interestingly enough, both of them are exactly like Japanese counterparts.

Kang and Muller (1996), just like Maki and Ochi (1998), suggest that WH-scrambling can be undone, on a par with other usual scrambling cases. They find (ia) ambiguous with respect to the scope of the scrambled WH-phrase and claim that it can mean either (ib) or (ic):

- (i) a. Nuku-rûl<sub>1</sub> Shin-Sook-ûn [CP Suna-ka t<sub>1</sub> sungbae ha-nûn-chi]  
 who-acc Shin-Sook-nom Suna-nom admire Q-  
 a-ni?  
 know-Q  
 b. Who does Shin-Sook know whether Suna admires *t*?  
 c. Does Shin-Sook know who Suna admires *t*?  
 (Kang and Muller (1996: 274))

This naturally suggests that scrambled WH-phrases never occupy [Spec, CP]. On the other hand, Nishiyama, Whitman, and Yi (1995) cite the following example and claim that it only has the interpretation in (iic), where the scrambled WH-phrase takes matrix scope:

- (ii) a. [Nwukwu-lul]<sub>1</sub> Chelswu-nun [Swuni-ka t chohaha-nya-ko]  
 who-acc Chelswu-top Swuni-nom like-Q-comp  
 mul-ess-na-yo  
 ask-past-Q-pol  
 b. \* Did Chelswu ask who Swuni likes?  
 c. Who did Chelswu ask whether Swuni likes *t*?  
 (Nishiyama, Whitman, and Yi (1995: 378))

However, they argue that there is no positive evidence that the scrambled WH-phrase occupies [Spec, CP] and suggest the possibility that it is adjoined to the matrix IP. Thus, whichever approach is taken, it would be fair to say [Spec, CP] is not occupied by the scrambled WH-phrase, exactly like we have seen in Japanese cases.

## 6. Conclusion

In this paper, I dealt with Bošković's generalization regarding the interpretation of multiple interrogation and presented a modified version. Specifically I claimed that the presence of WH-phrases in [Spec, CP] forces pair list reading. In doing so, I examined several types of WH-questions across languages.

\* I am grateful to Warren Elliott for carefully reading an earlier version of the present paper. Needless to say, any remaining responsibilities are solely mine.

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