7 *Wh*-in-situ Languages

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1 A Movement Approach to *Wh*-in-situ

Research on *wh*-movement has occupied a central place in generative grammar since Chomsky (1964) and Ross (1967a), leading to important insights into the nature of transformational operations (see Chomsky 1977, 1986b, Rizzi 1990, in particular: cf. Baltin and Ura, both in this volume). In languages like Chinese and Japanese, however, *wh*-phrases do not have to be displaced in overt syntax, as can be seen from comparison between an English sentence (1) and a Chinese example (2):

(1) John wonders [what$_i$ Mary bought t_i].

(2) Zhangsan xiang-zhidao [Lisi mai-le   shenme]
     Zhangsan wonder   Lisi bought what
     "Zhangsan wonders what Lisi bought."

Huang (1982a, 1982b) has extended the domain of inquiry by treating *wh*-in-situ in terms of LF *wh*-movement. According to Huang's proposal, the *wh*-phrase in (2) undergoes LF movement after mapping to PF to produce the following LF representation:

(3) Zhangsan xiang-zhidao [$_{CP}$ shenme$_i$ [$_{IP}$ Lisi mai-le t_i]].[1]
     Zhangsan wonder   what   Lisi bought

Note that the LF representation (3) is parallel to the structure in (1).

Huang's LF movement approach to *wh*-in-situ in languages like Chinese makes it possible to directly compare *wh*-in-situ languages with English-type languages where *wh*-phrases are overtly displaced. One immediate consequence, Huang argues, is that we can capture the parallelism in scope and selection between English-type languages and *wh*-in-situ languages by looking at the LF representations.

Consider the following Chinese examples:

(4)   a.   Zhangsan yiwei Lisi mai-le   shenme?
           Zhangsan think Lisi bought what
           "What does Zhangsan think Lisi bought?"
      b.   Zhangsan xiang-zhidao Lisi mai-le   shenme.
           Zhangsan wonder   Lisi bought what
           "Zhangsan wonders what Lisi bought."

(4a) must be interpreted as a direct question, whereas (4b) has only the read-ing of an indirect question where the *wh*-phrase takes the embedded scope. The situation is analogous to what we find in English-type languages, as shown in (5):

(5)   a.   What does John think Mary bought *t*?
      b.   *John thinks what Mary bought *t*.
      c.   John wonders what Mary bought *t*.
      d.   *What does John wonder Mary bought *t*?

(5b) is ungrammatical because *think* selects a declarative clause and is incom-patible with a *wh*-phrase in Spec of its complement CP. (5d) is ruled out because *wonder* takes an interrogative clause and requires a *wh*-phrase in Spec of its complement CP. Now, if *wh*-phrases in (4) undergo LF movement, we have the following possibilities to consider:

(6)   a.   [$_{CP}$ shenme$_i$ [$_{IP}$ Zhangsan yiwei [$_{CP}$ [$_{IP}$ Lisi mai-le *t*$_i$]]]]
               what   Zhangsan think   Lisi bought
      b.   Zhangsan yiwei [$_{CP}$ shenme$_i$ [$_{IP}$ Lisi mai-le *t*$_i$]]
           Zhangsan think   what   Lisi bought
      c.   Zhangsan xiang-zhidao [$_{CP}$ shenme$_i$ [$_{IP}$ Lisi mai-le *t*$_i$]]
           Zhangsan wonder   what   Lisi bought
      d.   [$_{CP}$ shenme$_i$ [$_{IP}$ Zhangsan xiang-zhidao [$_{CP}$ [$_{IP}$ Lisi mai-le *t*$_i$]]]]
               what   Zhangsan wonder   Lisi bought

Of these, (6b) and (6d) are ruled out for the same reason as (5b) and (5d) are ungrammatical: violation of selectional requirements. Notice that the LF representations in (6) display the same structural pattern as the visible effects of *wh*-movement in (5). The advantage of the LF movement approach to *wh*-in-situ is that we can state the selectional restrictions as straightforward formal conditions on LF representations, applicable to English-type languages as well as to Chinese-type languages. The two types of language simply differ in whether *wh*-movement takes place in overt syntax or at LF.

   The significance of Huang's proposal is, of course, not limited to the statement of selectional properties. His discussion of restrictions on LF movement gener-ated a series of important works dealing with locality of movement (see Aoun

and Li 1993c, Lasnik and Saito 1984, 1992, for example). This chapter looks at various issues concerning the treatment of *wh*-in-situ in the Chinese–Japanese type of languages. Section 2 considers the possibility that the *wh*-movement posited for *wh*-in-situ languages takes place in overt syntax, contrary to appearances. Section 3 turns to the morphological basis that separates *wh*-in-situ languages from English-type languages, and then takes up the parametric split among *wh*-in-situ languages.

2   LF Movement or Overt Movement?

Huang's proposal has turned *wh*-in-situ into an important tool with which to investigate the locality of movement. At the same time, to the extent that the behavior of *wh*-in-situ mimics the nature of overt movement, the LF movement hypothesis receives further support. Thus, the empirical question is to what extent overt syntactic movement and the postulated LF *wh*-movement behave in the same way. This section explores this question by concentrating on Japanese data.[2]

2.1   *Locality of* **wh**-*movement*

It is well known that overt *wh*-movement cannot extract a *wh*-phrase from an island, as illustrated by English examples in (7):

(7)   a.   ??Who is he reading a book that criticizes *t*?
      b.   ??What do you remember where we bought *t*?

(7a) is an instance of a complex NP island; (7b) a *wh*-island. (See Fukui in this volume for a general discussion of islands.) Both (7a) and (7b) violate Subjacency. When we turn to Japanese, we get a mixed result: the counterpart of (7a) is OK but that of (7b) is not. Consider examples in (8):

(8)   a.   kare-wa [dare-ga   kaita] hon-o   yonde-iru no?
           he-Top   who-Nom wrote book-Acc read-Prog Q
           "Is he reading a book that who wrote?"
      b.   ??[nani-o   doko-de katta   ka] oboete-iru   no?
             what-Acc where-At bought Q   remember-Prog Q
           "What do you remember where we bought?"

(8a), which corresponds to (7a), is acceptable. In (8b), on the other hand, the reading in which *nani-o* "what-Acc" takes the matrix scope is very difficult to get.[3] What sense can we make of this situation?
   Nishigauchi (1990), Choe (1987), and Pesetsky (1987) claim that LF movement is also subject to Subjacency, taking (8b) as manifesting a Subjacency

violation in a transparent way. The LF representation for (8b) under the relevant reading is shown below:

(8') b. [$_{CP}$ nani$_i$-o [$_{IP}$ pro$_{you}$ [$_{CP}$ doko-de$_j$ [$_{IP}$ pro$_{we}$ t_i t_j katta] ka]
              what-Acc   where-at   bought Q
        oboete-iru]   no]
        remember-Prog Q

In (8'b), the embedded object *nani-o* "what-Acc" is extracted out of a *wh*-island, just as in (7b). It is (8a) which needs a special treatment. According to Nishigauchi, Choe, and Pesetsky, LF movement is entirely parallel to overt movement, obeying the same constraint. This conclusion thus strengthens Huang's LF movement analysis of *wh*-in-situ. To handle (8a), Nishigauchi, Choe, and Pesetsky propose not that what undergoes LF movement in (8a) is the *wh*-phrase *dare*, but that the entire complex NP *[dare-ga kaita] hon* is pied-piped. According to this proposal, (9) is the LF representation of (8a):

(9) [$_{CP}$ [dare-ga   kaita] hon$_i$-o [$_{IP}$ kare-wa t_i yonde-iru] no]
          who-Nom wrote book-Acc he-Top   read-Prog Q

Since movement of the complex NP itself does not cross an island in (9), (8a) is grammatical. There are languages such as Sinhala (Kishimoto 1992) which have the device of obligatorily indicating the size of *wh*-phrases so that large-scale pied-piping is overtly marked. Cf. Pesetsky's (1987) discussion of a similar (but not obligatory) device in Japanese. See the references cited for further arguments for large-scale pied-piping and von Stechow (1996) for a critical discussion.[4]

   The pied-piping hypothesis has to deal with the fact that certain adjuncts do not allow large-scale pied-piping. This fact is indicated by the ill-formedness of (10):

(10) *kare-wa [John-ga   naze kaita] hon-o   yonde-iru no?
       he-Top   John-Nom why wrote book-Acc read-Prog Q
       "Is he reading a book that John wrote why?"

If large-scale pied-piping were possible, (10) should be grammatical, since there would be no extraction from an island. We are thus led to assume that large-scale pied-piping is not possible with adjuncts like *naze* "why." The strong unacceptability of (10) is attributed to some kind of Subjacency effect. In the framework of Chomsky (1986b) and Lasnik and Saito (1984, 1992), the ill-formedness of (10) has been analyzed as an ECP effect, which is stronger than an ordinary Subjacency violation. The same strong ungrammaticality is incurred by overt adjunct extraction in English illustrated in (11) with the indicated structure:

(11) *Why is he reading [a book [that John wrote *t*]]?

See Lasnik and Saito (1984, 1992), Nishigauchi (1990), and Saito (1994a) for further discussion of the behavior of adjuncts within islands.

   Returning to the locality of LF movement, an interesting question arises when we compare Japanese-type languages and English-type languages. *Wh*-in-situ is not limited to languages like Chinese and Japanese. Multiple questions in English-type languages also involve *wh*-in-situ, as in (12):

(12)   Who bought what?

It is also well known[5] that *wh*-in-situ in languages like English does not display island effects. Consider the sentences in (13):

(13)   a.   Who is reading a book that criticizes who?
       b.   Who remembers where we bought what?

In (13a) and (13b), the *wh*-direct object in the embedded clause can take the matrix clause as its scope, so that (13a) is a direct question asking for a pair of people, and (13b) a pair of a person who remembers and a thing bought.[6] Suppose the LF movement analysis is also applicable to *wh*-in-situ in languages like English. The LF representations for (the relevant readings of) the sentences in (13) are:

(14)   a. $[_{CP}$ who$_j$ who$_i$ $[_{IP}$ t_i is reading a book that criticizes $t_j]]$
       b. $[_{CP}$ what$_j$ who$_i$ $[_{IP}$ t_i remembers where we bought $t_j]]$

We are then faced with a dilemma. When we consider LF movement in languages like English, we have to conclude that it is not subject to Subjacency, behaving differently from overt movement. But if we look at LF movement in Japanese, it obeys the same restriction as overt movement: Subjacency. How can we reconcile these two apparently contradictory conclusions?

   One possibility explored by Watanabe (1992a, 1992b) is to assume that *wh*-questions in Japanese in fact involve movement in overt syntax, not LF movement. According to this hypothesis, part of the *wh*-phrase, which is a phonologically invisible operator, undergoes overt movement, so that (15a) is associated with the representation (15b) in overt syntax:

(15)   a.   Boku-wa $[_{CP}$ $[_{IP}$ John-ga   nani-o   katta]   ka] shiritai.
           I-Top   John-Nom what-Acc bought Q want-to-know
           "I want to know what John bought."
       b.   Boku-wa $[_{CP}$ Op$_i$ $[_{IP}$ John-ga $[t_i$ nani]-o katta] Q] shiritai.

Under this analysis, the absence of an island effect in (8a) is due to generation of the *wh*-operator on the complex NP itself, in which case movement does not cross an island. We will return to the identity of this invisible operator in the next section.

If Watanabe's hypothesis is adopted, it becomes possible to reconcile the facts about English and those about Japanese. The island effects shown by Japanese *wh*-questions no longer are due to LF movement, but should be attributed to overt movement. It is therefore not surprising that Japanese *wh*-questions behave in the same way as overt movement in languages like English, obeying Subjacency, in contrast to LF movement involved in *wh*-in-situ in languages like English. LF *wh*-movement is simply immune to Subjacency, if we continue to assume that LF movement applies to *wh*-in-situ in multiple questions.[7] Watanabe further observes that the parallelism between Japanese and English is strengthened if we look at multiple *wh*-questions in Japanese. The data which are used to show the island-sensitivity of Japanese *wh*-questions are limited to interrogatives which involve single *wh*-phrases. It is therefore interesting to see what happens in multiple questions. Surprisingly, the *wh*-island effect disappears in this context. Consider the contrast in (16):

(16)　a.　??John-wa [Mary-ga　nani-o　katta　kadooka] Tom-ni
　　　　　John-Top　Mary-Nom what-Acc bought whether　Tom-Dat
　　　　　tazuneta no?
　　　　　asked　Q
　　　　　"What did John ask Tom whether Mary bought?"
　　　b.　John-wa [Mary-ga　nani-o　katta　kadooka] dare-ni
　　　　　John-Top Mary-Nom what-Acc bought whether　who-Dat
　　　　　tazuneta no?
　　　　　asked　Q
　　　　　"Who did John ask whether Mary bought what?"

In (16), the *wh*-phrase *nani-o* "what-Acc" inside the embedded *wh*-clause necessarily takes matrix scope, since it is incompatible with *kadooka* "whether." This ends up as a familiar case of the *wh*-island effect in (16a). (16b) shows that when a second *wh*-phrase is added outside of the island, the sentence improves. The contrast in (16) is essentially the same as what we find in English examples in (17), where *what* in (17b) can take matrix scope:

(17)　a.　??What do you remember where we bought?
　　　b.　Who remembers where we bought what?

The contrast in (16) can be accounted for on the assumption that only one *wh*-element must undergo overt movement in Japanese, an assumption needed for languages like English anyway in view of the ungrammaticality of the examples in (18):

(18)　a.　*I wonder [$_{CP}$ who what [$_{IP}$ *t* bought *t*]]
　　　b.　*I wonder [$_{CP}$ what who [$_{IP}$ *t* bought *t*]]

Returning to the Japanese example (16b), the *wh*-phrase *dare-ni* "who-Dat" launches an operator in overt syntax. Since this movement does not cross an

island, it is legitimate. The *wh*-phrase inside the *wh*-island, *nani-o* "what-Acc," does not have to launch overt movement.

To sum up so far, on the basis of Japanese data, Huang's movement approach to *wh*-in-situ can be strengthened to the idea that *wh*-in-situ involves overt movement, not LF movement, in Japanese-type languages, contrary to appearances. Japanese-type languages and English type-languages are maximally similar, requiring movement of exactly one *wh*-element to Spec of an interrogative CP in overt syntax. Furthermore, overt movement, but not LF movement, is subject to Subjacency.

2.2   *Category movement or feature movement?*

The overt movement analysis of *wh*-in-situ raises questions about the nature of the invisible operator that undergoes overt movement in Japanese interrogative sentences. The intuitive idea is that the essence of a *wh*-phrase is extracted, leaving behind the rest of the phrase. What then is the essence of a *wh*-phrase?

It is interesting to consider this question in light of a recent proposal about the nature of movement put forth by Chomsky (1995a). He claims that the movement operation should raise only the morphosyntactic formal features, if movement in general is driven by morphological considerations. *Wh*-elements such as *who* and *what* consist of a *wh*-feature, an indefinite part, and the [±human] feature.[8] In case of *wh*-movement, only the *wh*-feature needs to be raised, according to Chomsky's (1995a) view. This is not the case in English, however, where the entire *wh*-phrase must be raised. Chomsky calls this effect generalized pied-piping and attributes it to morphophonological requirements. His proposal is that the derivation crashes at PF when parts of a word are scattered. Since LF movement should be free from such requirements, it follows that only features undergo movement in the LF component in general. In Japanese, on the other hand, we can hypothesize that morphophonological considerations allow movement of the *wh*-feature alone even in overt syntax, leaving the rest of the *wh*-feature in situ.[9] The question of morphology is taken up in section 3.

Watanabe (1992a), also based on morphological considerations, proposes a somewhat more conservative approach, according to which the invisible operator originates in Spec of the DP which is a *wh*-phrase such as *nani* "what." Movement of this operator proceeds as in (19):

(19) $[_{CP}$ Op $[_{IP} \dots DP \dots]$ Q$]$
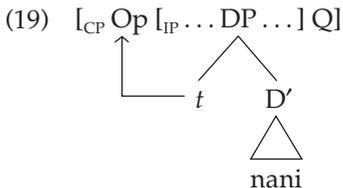
Under this proposal, what undergoes movement is a maximal projection.

Choice between these two approaches at our current level of understanding is difficult, especially in view of uncertainties in the treatment of island effects in the general framework of Chomsky (1995a).[10] The two approaches may eventually converge, the movement in (19) carrying only the *wh*-feature (but not the entire category), if we adopt Takahashi's (1997) suggestion that a null operator undergoes pure feature movement even in overt syntax because it is free from PF considerations. Cf. Bošković (to appear). Here, I put aside this question and consider one important aspect in the treatment of *wh*-in-situ which is significant in evaluating theories of invisible operator movement in overt syntax, in order to spell out a theoretical problem behind the treatment of island effects.

The conclusion of section 2.1 rests on the assumption that *wh*-in-situ in English-type languages undergoes LF movement. It is not obvious, however, that we can justify this assumption. Remember that this hypothesized LF movement is different from overt movement in not obeying Subjacency. Suppose *wh*-in-situ in English-type languages does not undergo LF movement, licensed by some kind of unselective binding instead.[11] The absence of island effects follows as a natural consequence. See Chomsky (1995a) for considerations that lead to this hypothesis, and Reinhart (1997b, 1998) in particular for interpretive problems raised by *wh*-in-situ in English. At the same time, the island sensitivity of *wh*-in-situ in Japanese can be explained if we continue to assume the LF movement analysis of Japanese *wh*-in-situ. To accommodate the range of facts discussed in section 2.1, we only need the assumption that movement obeys Subjacency whether it applies in overt syntax or at LF, and that only one *wh*-feature is required to be raised to Spec of an interrogative CP in Japanese as well as in English. We have to look for further evidence.

The crucial argument that Watanabe (1992a, 1992b) presents for the overt movement treatment of Japanese *wh*-in-situ has to do with the blocking effect that *wh*-clauses have for another type of overt A'-movement, Comparative Deletion. Kikuchi (1987) (see also Ishii 1991) shows that Comparative Deletion is derived by movement in overt syntax. This means that Comparative Deletion displays island effects. Significantly for us, an indirect question constitutes an island for Comparative Deletion. This is illustrated in (20).

(20)   *[Minna-ga   [naze Paul-ga *t* yonda ka] siritagatteiru   yori]
         everyone-Nom why Paul-Nom read   Q   want-to-know than
         John-ga   takusan-no hon-o   yonda.
         John-Nom many-Gen book-Acc read
         "John read more books than everyone wants to know why Paul read."

(20) shows that Comparative Deletion in Japanese is sensitive to a *wh*-island in the same way as in English (Chomsky 1977). If *wh*-in-situ in Japanese is assumed to undergo only LF movement, the embedded question in (20) has the same structure as a declarative clause in overt syntax, so that it cannot

function as a *wh*-island at that stage of the derivation. (20) would be indistinguishable from (21), which is acceptable:

(21)   [Minna-ga   [Paul-ga *t* yonda to] uwasasiteiru yori] John-ga
       everyone-Nom Paul-Nom read   C° rumor   than John-Nom
       takusan-no hon-o   yonda.
       many-Gen book-Acc read
       "John read more books than everyone rumors that Paul read."

If *wh*-in-situ launches an invisible operator in overt syntax, on the other hand, we can expect the *wh*-island effect created by the embedded question. Thus, we are led to conclude that *wh*-questions in Japanese involve overt movement.

At this point, let us return to the choice between the *wh*-feature movement analysis and Watanabe's (1992a) original proposal. To solve this question, it is important to consider exactly what induces the *wh*-island effect. In the traditional account, the *wh*-island effect arises from the configuration in (22), where YP tries to move across XP, which occupies Spec of CP:[12]

(22)   . . . [$_{CP}$ XP C° [$_{IP}$ . . . YP

This movement is ruled out by the Relativized Minimality of Rizzi (1990) or by the Minimal Link Condition (MLC) of Chomsky and Lasnik (1993). Cf. Ura in this volume.

In the framework of Chomsky (1995a), MLC is incorporated into the definition of the movement operation, and furthermore, movement is characterized in terms of attraction. A somewhat simplified definition of Attract is given in (23):[13]

(23)   K attracts F if F is the closest feature that can enter into a checking relation with K.

The movement of YP in (22) is blocked by this definition only if XP has the closest feature that can enter into a checking relation with the head that is supposed to check the relevant feature of YP. In the interaction of Comparative Deletion with a *wh*-question in (20), it is doubtful whether the *wh*-feature can enter into a checking relation with the complementizer that triggers Comparative Deletion. The problem is not limited to *wh*-in-situ, however, because Comparative Deletion is blocked by a *wh*-island even in languages like English.

Let us now consider the *wh*-feature movement analysis. Chomsky (1995a) argues that feature movement necessarily results in adjunction to a head. The configuration for the *wh*-island should be something like (24):

(24)   . . . [$_{CP}$ C°+wh [$_{IP}$ . . . YP

First of all, the Relativized Minimality of Rizzi (1990) or the MLC of Chomsky and Lasnik (1993) cannot handle the island effect in (24) because Spec of CP is not filled. In this sense, the blocking effect in (20) is an argument for Watanabe's (1992a) proposal of invisible operator movement under the framework which assumes the Relativized Minimality of Rizzi (1990) or the MLC of Chomsky and Lasnik (1993), as long as Comparative Deletion involves movement of a maximal projection. On the other hand, it does not matter for Attract in (23) whether the *wh*-feature is located in Spec or the head. The *wh*-feature in (24) is certainly closer to K than the feature in YP. Still, the same problem remains: the *wh*-feature cannot enter into a checking relation with the trigger of Comparative Deletion. Thus, to the extent that the Attract approach can be modified to handle the interaction between *wh*-question movement and Comparative Deletion (or more generally, two types of A'-movement), we do not have grounds on which to choose between the *wh*-feature movement analysis or the invisible operator movement analysis. Future research has to address this issue.

To summarize the discussion, an independent argument is presented for the idea that *wh*-in-situ in Japanese-type languages involves movement in overt syntax. The identity of the entity that undergoes this overt movement is also discussed. Two possibilities are considered, namely that it is a *wh*-feature and that it is an operator that originates in Spec of DP.

3   Morphology and the Typological Perspective

It is mentioned in section 2.2 that morphological considerations are significant in determining whether *wh*-in-situ is allowed. This section pursues this question in some detail. This discussion is also related to fine-grained differences among *wh*-in-situ languages.

3.1   Factors that allow **wh-*in-situ***

There is an interesting property that characterizes *wh*-in-situ languages like Chinese and Japanese. The quantificational system in these languages builds on expressions that are used in *wh*-phrases. Thus, it is well known (Huang 1995) that in Chinese, *shenme* can be interpreted as a *wh*-phrase, a universal quantifier, a negative polarity item, or an existential quantifier, depending on the context in which it appears:

(25)   a.   ni   xiang mai shenme (ne)?
            you want buy what   Q
            "What do you want to buy?"
       b.   wo shenme   dou mai.
            I   everything all   buy
            "I want to buy everything."

  c. wo bu xiang mai shenme.
      I   not want buy anything
      "I don't want to buy anything."
  d. ta dagai   mai-le   shenme   le.
      he probably buy-Perf something-Part
      "He probably bought something."

See Cheng (1991, 1995), Cheng and Huang (1996), and Li (1992) for detailed discussions of the licensing conditions on non-*wh* readings in Chinese. In Japanese, too, *wh*-expressions can be used as quantificational expressions, but only when a particle is attached, as illustrated in (26):[14]

(26) a. dare-ga   ringo-o   tabeta no?
          who-Nom apple-Acc ate   Q
          "Who ate an apple?"
      b. dare**mo**-ga   ringo-o   tabeta.
          everyone-Nom apple-Acc ate
          "Everyone ate an apple."
      c. dare**mo** ringo-o   tabe-nak-atta.
          anyone apple-Acc eat-Neg-Past
          "No one ate an apple."
      d. dare**ka**-ga   ringo-o   tabeta.
          someone-Nom apple-Acc ate
          "Someone ate an apple."

The syntactic and semantic roles of these particles have received a lot of attention in generative studies of Japanese since Kuroda (1965). See Aoyagi and Ishii (1994), Brockett (1994), Hasegawa (1991), Kawashima (1994), and Nishigauchi (1990), among many others, for discussion. See also Haspelmath (1997) for typological patterns in the use of these particles.

  Watanabe (1992a) claims that this morphosyntactic property, namely, the existence of indeterminate elements which receive various quantificational interpretations governed by morphosyntactic environments, allows *wh*-in-situ in these languages. Cheng (1991), on the other hand, observes that *wh*-in-situ languages tend to have overt question particles as complementizers (*ne* in Chinese *wh*-questions and *no*/*ka* in Japanese questions in general), and argues that the presence of an overt particle in CP obviates the need of moving an overt *wh*-element, allowing *wh*-in-situ and forcing *wh*-in-situ because of Economy (see Baltin in this volume), since a particle is sufficient to indicate that the clause is a question. Kayne (1994) pursues yet another possibility that links word order with *wh*-in-situ. Kayne claims that when the complementizer is clause final, IP is raised into Spec of CP, using up the potential landing site for a *wh*-phrase. It follows that *wh*-in-situ is the only option for languages with clause final complementizers.

Each of these positions has its own empirical problems because they are not based on exception-free generalizations. One point worth mentioning here is that Takahashi (1993, 1994a) argues that Japanese allows overt *wh*-movement of an entire DP in addition to *wh*-in-situ. If his analysis is on the right track, we also need to explain why both options coexist in a single language.[15] Further research may show that all the three positions above point to a deeper, single property that is common to all *wh*-in-situ languages,[16] or it may turn out that *wh*-in-situ languages are not uniform after all and that each of these proposals deals with different types of *wh*-in-situ languages. In the next section, it will be shown that Chinese and Japanese (and perhaps Korean) contrast in some crucial respects, suggesting that *wh*-in-situ languages are indeed not uniform. At the same time, I do not want to deny the need to search for a deeper account of the factors that contribute to *wh*-in-situ.

3.2   Types of **wh**-*in-situ language*

So far, we have proceeded on the pretense that Chinese and Japanese *wh*-questions behave in the same way. It is now time to compare these two languages more closely.

3.2.1   *Chinese vs. Japanese*
Aoun and Li (1993a, 1993b) and Tsai (1994a) have recently proposed that Chinese *wh*-in-situ does not undergo movement, contrary to Huang's original proposal. Among the empirical considerations that lead to this conclusion are a number of differences between Chinese and Japanese in the behavior of *wh*-in-situ and quantificational expressions. Here, I will discuss some of these.

We have seen in section 2.1 that *wh*-in-situ in Japanese is sensitive to *wh*-islands. The relevant example (8b) is repeated here:

(8)   b.   ??[nani-o doko-de katta   ka] oboete-iru   no?
            what-Acc where-At bought Q   remember-Prog Q
            "What do you remember where we bought?"

Interestingly, the *wh*-island effect is absent in Chinese, as originally noted by Huang (1981/2). Compare (8b) with (27):

(27)   ni   xiang-zhidao [wo weishenme mai shenme]?
       you wonder   I   why   buy what
       "What do you wonder why I bought?"

Wh-movement in Japanese is subject to another type of blocking created by a c-commanding quantifier, an observation originally due to Hoji (1985), whereas there is no such effect in Chinese:

(28) a. *?daremo-ga   nani-o   katta   no?   (Japanese)
          everyone-Nom what-Acc bought Q
      b. nani-o daremo-ga *t* katta no?
      c. meigeren dou mai-le   shenme?   (Chinese)
          everyone all   buy-Perf what
          "What did everyone buy?"

The contrast in the *wh*-island effect is explained by the hypothesis that *wh*-movement takes place in Japanese, but not in Chinese. Recall from section 2.2 that the *wh*-island effect arises from the nature of movement. If movement is not responsible for the *wh*-dependency in the Chinese example (27), the absence of the *wh*-island effect is not surprising. How, then, does the *wh*-phrase get interpreted in Chinese? Aoun and Li (1993a, 1993b) and Tsai (1994a) both claim that Chinese makes use of unselective binding in the sense of Heim (1982). In particular, Tsai (1994a) develops a comprehensive theory of operator-variable binding according to which Chinese generates unselective binders at the clausal level while Japanese does so at the DP level. Thus, Chinese *wh*-questions have the following schematic representation base generated directly:

(29) $[_{CP} Op_X [_{IP} \ldots wh(x) \ldots]]$

The operator-variable pair in (29) is immune to the *wh*-island effect because it is not created by movement.

The contrast with respect to blocking by QP in (28) should receive a similar account if the blocking effect is due to movement.[17] That is, a c-commanding QP *daremo-ga* blocks *wh*-movement in (28a), yielding ill-formedness. If the *wh*-phrase is scrambled over the QP, the sentence becomes grammatical, as in (28b). Since *wh*-movement does not take place in the first place in the Chinese counterpart (28c), no such blocking takes place, on the assumption that unselective binding is not blocked by an intervening quantified expression.[18] We return to interaction with QP in section 3.2.3.

The next question is why *wh*-in-situ gets interpreted via unselective binding in Chinese and involves movement in Japanese. At this point, the morphological difference in the quantificational system, noted in section 3.1, becomes relevant. Recall that Japanese uses special particles to build various quantificational expressions out of indeterminate elements, while Chinese does not employ particles. Aoun and Li (1993b) claim that this morphological difference reflects a syntactic difference in the quantificational system. The use of particles indicates that the language allows an operator to be base generated with the DP which it is associated with and be subsequently moved away from that DP. Chinese places unselective binders elsewhere, namely, at the clausal level.[19]

This morphosyntactic characterization of the difference between Chinese and Japanese meshes well with the possibility of large-scale pied-piping in Japanese, which we have reviewed in section 2.1 above. Remember that the

pied-piped phrase is a DP, the type of category which can be associated with the operator that undergoes movement. At the same time, as in the case of large-scale pied-piping, the non-movement characterization of Chinese must be modified somewhat, again, in order to accommodate the behavior of adjuncts. (27) above shows that Chinese lacks *wh*-island effects, but this holds only for arguments. A certain class of adjuncts systematically exhibits *wh*-island effects, as shown in (30):

(30) ni xiang-zhidao [wo weishenme mai shenme]?
　　　you wonder　　　I　why　　　buy what
　　a. What is the thing x such that you wonder why I bought x?
　　b. *What is the reason x such that you wonder what I bought for x?

(30) allows the reading (a) in which the argument *shenme* can take the matrix scope, but not the reading (b) where the adjunct *weishenme* is extracted over a *wh*-island. Reinhart (1998) claims that the same class of English adjuncts lacks a nominal head which provides a variable. Extending this idea to Chinese, we can say that these Chinese adjuncts resist unselective binding due to lack of a variable to be bound and therefore must undergo movement, subject to Subjacency. The (b) reading of (30) is hence blocked. See Lin (1992) and Tsai (1994a, 1994b) for discussion.

　　The idea that certain adjuncts resist unselective binding also explains their inability to undergo large-scale pied-piping in Japanese (see (10) above). In our discussion of semantics of large-scale pied-piping in n. 4, we have seen that pied-piping of a complex NP yields a kind of multiple question interpretation. This is another instance of unselective binding, as Nishigauchi (1990) originally claims. But then, these adjuncts will be excluded from large-scale pied-piping, correctly.

3.2.2　Scope marking strategy

Let us turn to another type of *wh*-in-situ language, represented by Hindi and Iraqi Arabic.[20] A very remarkable characteristic of *wh*-in-situ in these languages is stricter locality. Compare the Chinese and Japanese examples in (31) with those of Hindi and Iraqi Arabic in (32):

(31) a. Zhangsan yiwei [Lisi mai-le shenme]?　　　　　(Chinese)
　　　　　Zhangsan think Lisi bought what
　　　　　"What does Zhangsan think Lisi bought?"
　　b. John-wa [dare-ga　　kita　to] omotteiru no?　　　(Japanese)
　　　　　John-Top who-Nom came that think　　Q
　　　　　"Who does John think came?"

(32) a. *raam-ne socaa　[ki　kOn aayaa hE]?　　　　　　(Hindi)
　　　　　Ram-Erg thought that who come has
　　　　　"Who did Ram think had come?"[21]

b.   *Mona tsawwarit [Ali ishtara sheno]?   (Iraqi Arabic)
     Mona thought   Ali bought what
     "What did Mona think Ali bought?"

The *wh*-phrase in the embedded clause can take the matrix scope in Chinese
and Japanese without any trouble, but not in Hindi nor in Iraqi Arabic. The
wh-in-situ strategy itself is legitimate as long as the *wh*-phrase appears in the
clause where it takes scope, as shown in (33):

(33) a.   raam-ne puuchaa [ki   mohan-ne   kis-ko dekhaa]   (Hindi)
           Ram-Erg asked   that Mohan-Erg who   saw
           "Ram asked who Mohan saw."
      b.   Mona se?lat Ali [Ro?a ishtarat sheno]   (Iraqi Arabic)
           Mona asked Ali Ro?a bought what
           "Mona asked Ali what Ro?a bought."

In other words, *wh*-in-situ in Hindi and Iraqi Arabic only allows a clause
bound *wh*-dependency.[22]
   One way of expressing the intended readings of (32) is to raise the *wh*-
phrase into the matrix clause, as in (34):

(34) a.   kOn raam-ne socaa [ki *t* aayaa hE]?   (Hindi)
           "Who did Ram think had come?"
      b.   sheno tsawwarit Mona [Ali ishtara *t*]?   (Iraqi Arabic)
           "What did Mona think Ali bought?"

Mahajan (1990) and Dayal (1996) argue that the movement in question is scram-
bling in Hindi, whereas Wahba (1991) assumes that the preposed *wh*-phrase is
placed in Spec of CP in Iraqi Arabic.
   Another way of expressing the intended readings is to place a special scope
marker, glossed as SM, in the matrix clause, as in (35):

(35) a.   raam-ne kyaa socaa   [ki   kOn aayaa hE]?   (Hindi)
           Ram-Erg SM   thought that who come has
      b.   sh-tsawwarit Mona [Ali ishtara sheno]?   (Iraqi Arabic)
           SM-thought   Mona Ali bought what

The scope marking strategy finds its counterpart in overt *wh*-movement lan-
guages such as German, where the *wh*-phrase moves at least to Spec of an
intermediate CP and takes the matrix scope indicated by the marker *was*, as
in (36):

(36)   Was glaubt Hans [$_{CP}$ mit   wem [$_{IP}$ Jakob jetzt spricht]]?
       SM believe Hans   with whom   Jakob now speak
       "With whom does Hans think that Jakob is now talking?"

The scope marker tends to use the *wh*-form corresponding to "what" cross-linguistically.[23] The scope marking strategy of the German kind is also employed by children learning English at some point during the acquisition process. See Thornton (1990) and McDaniel et al. (1995).

The scope marking strategy displays the clause bounded nature, too, as illustrated by the Hindi example in (37):

(37)   raam-ne *(kyaa) socaa   [ki   ravii-ne *(kyaa) kahaa
       Ram-Erg SM   thought that Ravi-Erg SM   said
       [ki   kOn sa aadmii aayaa thaa]]]?
       that which   man   came
       "Which man did Ram think that Ravi said came?"

Notice that when there is an additional clause between the matrix and the *wh*-phrase, every such intervening clause must contain a scope marker.[24] This very strict locality requirement holds even with multiple questions, as in Hindi example (38):

(38)   kis-ne *(kyaa) socaa   [ki   siitaa-ne kis-ko dekhaa]?
       who-Erg SM   thought that Sita-Erg who   saw
       "Who thought that Sita saw whom?"

The presence of a *wh*-phrase in the matrix clause is not sufficient to license the *wh*-phrase in the embedded clause. The scope marker has to be added to satisfy locality. This contrasts with the movement strategy, which affects only one of the *wh*-phrases that take the same scope, so that the locality holds only for the one that is affected by movement. The relevant examples in English and Japanese are repeated here:

(13)   a.   Who is reading a book that criticizes who?
       b.   Who remembers where we bought what?

(16)   a.   ??John-wa [Mary-ga   nani-o   katta   kadooka] Tom-ni
            John-Top   Mary-Nom what-Acc bought   whether Tom-Dat
            tazuneta no?
            asked   Q
            "What did John ask Tom whether Mary bought?"
       b.   John-wa [Mary-ga   nani-o   katta   kadooka] dare-ni
            John-Top Mary-Nom what-Acc bought   whether   who-Dat
            tazuneta no?
            asked   Q
            "Who did John ask whether Mary bought what?"

The *wh*-in-situ in English can occur within an island, as in (13). The *wh*-island effect disappears in the Japanese example (16b), once another *wh*-phrase is

added outside the island to take the same scope. The Hindi multiple question in (38) behaves rather differently in this respect.[25]

This contrast between the movement strategy and the strictly local scope marking strategy can be found within a single language. According to McDaniel (1989), the *wh*-in-situ in German multiple questions does not require a local scope marker, as shown in (39a):

(39) a. Wer glaubt [dass ich meinte [dass Jakob mit wem gesprochen
          who believe that I   thought that Jacob with whom spoken
          hat]]?
          has
    b. *Wer glaubt [dass ich meinte [mit wem Jakob gesprochen hat]]?
          who believe that I   thought with whom Jacob spoken   has
    c. Wer glaubt [was ich meinte [mit wem Jakob gesprochen hat]]?
          who believe SM I   thought with whom Jacob spoken   has

Once the embedded *wh*-phrase moves to Spec of the lowest CP as in (39b, c), however, the intermediate clause must host a scope marker.

One of the major issues in the literature on the scope marking strategy is how the *wh*-dependency is formed at LF. One possibility (Bayer 1996, Beck 1996, McDaniel 1989, Müller and Sternefeld 1996) is to assume that the *wh*-phrase undergoes LF movement to replace the scope marker. Challenging to this approach are syntactic and semantic differences between the direct movement strategy and the scope marking strategy. Rizzi (1992), for example, observes that the scope marking strategy is blocked by negation whereas full movement is not:

(40) a. Mit wem glaubst du nicht [dass Hans gesprochen hat]?
          with whom believe you not   that Hans spoken   has
    b. *Was glaubst du nicht [mit wem Hans gesprochen hat]?
          SM   believe you not   with whom Hans spoken   has
          "Who don't you think that Hans has talked to?"

The same blocking is found in Hindi, too, according to Dayal (1994, 1996). The putative LF movement must be blocked by negation. Bošković (1997, to appear) argues that the similar clause-boundedness of *wh*-in-situ in French should be captured in terms of LF feature movement. See also Beck (1996) as well as Rizzi (1992).

It is worth mentioning that expletive replacement in the *there*-construction displays a similar blocking. Chomsky (1991) observes that *many* takes narrow scope in (41a), in contrast to the ordinary transitive clause (41b), which allows scope ambiguity:

(41) a. There aren't many linguistics students here.
    b. I haven't met many linguistics students.

One might say that movement of the quantificational feature is blocked by negation in (41a), in a way analogous to (40b). This blocking leads to direct ungrammaticality in (40b) because the interrogative reading requires the existential quantificational feature. Movement of the Case and phi-features alone will do in (41a), on the other hand, so that the quantificational feature can be left behind. To the extent that the *there*-construction involves LF movement of the postcopular NP, the contrast in (40) in fact supports the LF movement approach to the scope marking strategy.

Another approach (Dayal 1994, 1996) is to interpret structures with a scope marker like (36) directly, without moving the *wh*-phrase to the scope position. This means that *wh*-in-situ moves only to the local CP in Hindi. The scope marker binds a propositional variable, whose content is supplied by the clause headed by a *wh*-expression. The contrast in (40) is not surprising from this perspective, since (40a) and (40b) involve different processes, but the contrast itself remains to be accounted for. Dayal (1996) claims that the clause-boundedness in Hindi *wh*-questions comes from the islandhood of the complement clause, arguing that finite complement clauses are extraposed in Hindi. Mahajan (1994a) and Ouhalla (1996a) observe, however, that a rather strong unacceptability induced by the absence of a scope marker in (32) and (38) is qualitatively different from ordinary island violations found in these languages, which are much milder. If so, the source of the strict locality must be sought somewhere else.

Yet another possibility (Mahajan 1990) is to adjoin to the scope marker the clause that contains the *wh*-phrase which also undergoes clause internal raising, thereby bringing the *wh*-phrase close enough to the scope position. Mahajan (1990, 1994a) proposes that *wh*-phrases in Hindi are essentially quantifier phrases, lacking the movement ability of familiar *wh*-phrases. As a result, they can only undergo QR, which is clause bound. The scope marker is therefore needed to extend the scope of *wh*-phrases.

Ouhalla (1996a) points out, however, that *wh*-phrases in Hindi and Iraqi Arabic do not allow any quantificational readings other than as *wh*-interrogatives, unlike their Chinese counterparts. It is unclear why *wh*-phrases in Hindi and Iraqi Arabic do not have uses as non-*wh* quantifiers, if their movement is analogous to QR, movement of quantifiers.[26] Ouhalla (1996a) instead proposes that unselective binding is parametrized so that a certain kind of *wh*-phrase, exemplified by those in Hindi and Iraqi Arabic, must be bound within the smallest finite clause.

The discussion in the literature is inconclusive, leaving many questions open. Horvath (1997) claims that the scope marking strategy is not uniform across languages after all. Much further work is needed for proper understanding of the scope marking strategy.

3.2.3   *Interaction with QP*

Lastly, let us take up interaction between *wh*-in-situ and QP again. Recall from section 3.2.1 above that Japanese and Chinese contrast in whether a

wh-phrase can be c-commanded by a QP. The relevant examples are repeated here:

(28) a. *?daremo-ga   nani-o   katta   no?   (Japanese)
           everyone-Nom what-Acc bought Q
      b. nani-o daremo-ga *t* katta no?
      c. meigeren dou mai-le   shenme?   (Chinese)
           everyone all   buy-Perf what
           "What did everyone buy?"

There is a further parametric difference worth noting in this connection. As discussed in detail by Aoun and Li (1993c), the Chinese question (28c) allows a pair-list answer like (42), which is rendered in English:

(42) John bought beer, Mary a bottle of wine, . . .

In this respect, Chinese is parallel to English, which also allows a pair-list answer for a question like (43), a phenomenon first discussed in depth by May (1985). See also Lasnik and Saito (1992), Chierchia (1993), Dayal (1996), Beghelli (1997), and Szabolcsi (1997a):

(43) What does every student buy?

In Japanese, on the other hand, not only is (28a) unacceptable (at least for some speakers) but also the acceptable (28b) lacks a pair-list reading, as originally observed by Hoji (1985, 1986). Even those who find (28a) acceptable do not get the pair-list reading. Dayal (1996: 114) briefly mentions that Hindi also allows a pair-list answer for questions with the scope marking strategy, as in (44):

(44) a. jaun kyaa soctaa hai [har   bacca kaun kitaab khariidegaa]
           John SM   think-Pres every child which book   buy-Future
           "Which book does John think that every child will buy?"
      b. jaun soctaa hai [ki   ravi laal phuul khariidegaa aur raam godaan
           John think-Pres that Ravi laal phuul buy-Future   and Ram godaan
           khariidegaa]
           buy-Future
           "John thinks that Ravi will buy laal phuul and Ram will buy godaan."

The possibility of pair-list answers in case of *wh*-QP interaction seems to suggest that among *wh*-in-situ languages, Hindi and Chinese should be treated in a similar way, in contrast to Japanese. It is interesting to observe that the scope marking strategy in German as in (45) allows a pair-list answer in *wh*-QP interaction, according to Beck (1996):[27]

(45)   Was glaubt jeder   wen   Karl gesehen hat?
       SM believes everyone whom Karl seen   has
       "Who does everyone believe that Karl saw?"

It should be noted, at the same time, that English and Japanese, both of which are assumed to involve movement, contrast in the availability of the pair-list reading.

   Recent attempts (Saito 1994b, 1997, Watanabe 1997) to explain the absence of the pair-list reading in the Japanese questions in (28) appeal to a parametric difference in the quantificational system of a particular language. Saito (1997) points to the use of the domain-widening particle *mo* (Kadmon and Landman 1993, Kawashima 1994) in the universal quantifier as causing a pragmatic problem in case of the pair-list answer, while Watanabe (1997) suggests that the type of absorption found in languages like English, which is crucial in obtaining the pair-list reading (cf. Chierchia 1993), is absent in Japanese. It is an important question for future inquiry whether an approach based on systematic analysis of particular languages' quantification system produces fruitful results in wider crosslinguistic contexts.

NOTES

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1 Throughout this chapter, it is assumed that *wh*-movement fills Spec of CP unless indicated otherwise, though Huang's proposal antedates widespread use of the CP system.

2 Chinese and other in situ languages are taken up in section 3.

3 (8b) has another reading where the indirect question asks for the thing bought and the place of purchase. This reading does not involve *wh*-movement out of a *wh*-island, and therefore is irrelevant.

4 von Stechow (1996) claims that large-scale pied-piping is problematic from the viewpoint of semantic interpretation. Assuming with Hamblin (1973) and Karttunen (1977) that the meaning of a question is a set of propositions which determines answerhood, von Stechow claims that the LF representation (9) should be interpreted as (i):

(i) $\lambda p \exists x \exists y [\text{person}(x) \wedge \text{book}(y) \wedge \text{wrote}(x, y) \wedge p = {}^{\wedge}\text{reading (he, y)}]$

Since the form of the propositions which can be used as answers is "he is reading y" according to (i), it is wrongly predicted that answers like "he is reading *War and Peace*" would be appropriate, contrary to fact.

   Von Stechow's claim is based on Nishigauchi's (1990: 111) remark

that the pied-piped part is interpreted as "which x, y, x a person, y a book that x wrote." At another place (1990: 52), however, Nishigauchi observes that a question like (8a) is after the identity of books in terms of the person who wrote them. I would like to claim that there is a better way of cashing in on Nishigauchi's latter observation. Let us suppose that questions involving large-scale pied-piping call for functional answers, as in Engdahl's (1986) analysis of the question–answer pair in (ii). Cf. also Chierchia (1993):

(ii)   a.   Who does every boy love?
       b.   His mother.

Informally, then, (8a) is interpreted as something like "which f, x, x a person and f(x) a book that x wrote, he is reading f(x)." More precisely, this interpretation is expressed by (iii):

(iii) $\lambda p \exists f \exists x [person(x) \wedge book(f(x))$
        $\wedge\ wrote(x, f(x)) \wedge p =$
        $^\wedge reading\ (he, f(x))]$

Note that answers like "he is reading *War and Peace*" are not appropriate for the question in (iii) because *War and Peace* does not count as an appropriate function that the question is after. (iii) also captures native speakers' intuition, discussed by Nishigauchi (1990) in detail, that an appropriate short answer to (8a) includes the description of the book as well as its author, as in (iv):

(iv)   Austen-ga   kaita   hon   desu.
       Austen-Nom wrote book be
       "It's a book Austen wrote."

This intuition is missed if we simply assume that the effect of pied-piping is not reflected in the interpretation, as von Stechow does.

Veneeta Dayal has independently come up with the same proposal about the semantics of large-scale pied-piping. See Dayal (in preparation) for details.

5   The observation goes back to Baker (1970) and Chomsky (1973).

6   (13b) has another reading where the embedded clause is a multiple indirect question asking for a pair of a place and a thing bought. This reading is irrelevant for the present purposes.

7   See Richards (1997) for a theory that tries to explain why overt movement and LF movement contrast in this way with respect to Subjacency.

8   This idea goes back to Chomsky (1964).

9   See Maki (1995) for an attempt to account for various properties of *wh*-questions in Japanese in terms of LF *wh*-feature movement. Below, we will turn to evidence that seems to favor overt movement over LF movement, whether it is *wh*-feature movement or not.

10   But see Fukui (1997) and Takahashi (1994a) for important discussions.

11   Below, I discuss the proposal that Chinese *wh*-in-situ employs unselective binding.

12   We represent the head-initial structure in which IP follows the C° head, but nothing in our account hinges on this point.

13   Modified from Chomsky (1995a: 297). I abstract away from further elaborations.

14   Korean is closer to Japanese than to Chinese in making use of particles, but there are also some differences. See Choe (1995) and Kim (1991).

15   Coexistence of movement and *wh*-in-situ options may be found in other languages. According to Cole and Hermon (1994), Ancash Quechua is such a language.

16   See Fukui and Takano (1998)
for an attempt to unify the latter
two approaches. Haspelmath
(1997) considers the typological
correlation between word order and
indeterminate elements, though
the relation with *wh*-in-situ is not
explored.

17   See Watanabe (1997) for a
Minimalist account of this
phenomenon. It should also be
mentioned that there are speakers
who find (28a) acceptable.

18   This assumption may be too
simplistic. See Li (1992) for a
detailed discussion of interaction
between *wh*-construals and licensers
of other readings of indeterminate
elements.

19   Cole and Hermon (1994) analyze
wh-in-situ in Ancash Quechua as
involving unselective binding.
Ancash Quechua, nevertheless, uses
a particle to build quantificational
expressions out of indeterminate
elements, as in Japanese. It should
be pointed out, though, that Cole
and Hermon do not discuss
wh-islands.

20   The Hindi examples in this chapter
are mostly taken from Mahajan
(1990). The Iraqi Arabic examples
come from Wahba (1991) and
Ouhalla (1996a).
     Bengali (Bayer 1996) and
Hungarian (Horvath 1997, Marácz
1988) also display essentially the
same grammatical properties.

21   The Hindi verb *socaa* is ambiguous
between "think" and "wonder."
I ignore the latter reading.

22   Bošković (1997a, to appear)
observes that *wh*-in-situ in French,
which is allowed only for root
questions, is clause bound and is
also blocked by negation. See the
text discussion below for blocking
of the scope marking strategy by
negation.

23   The Iraqi Arabic *sh-* is a contracted
form of *sheno* "what." Dayal (1994,
1996) claims, on the basis of the
evidence from Warlpiri, that a more
precise characterization is that the
scope marker is a *wh*-form
quantifying over propositions.

24   German behaves in the same way
according to McDaniel (1989). Dayal
(1996) and Müller and Sternefeld
(1996) report, however, that there
are dialects which do not require a
scope marker in the intermediate
clause. Thus, (ib) is unacceptable for
some speakers, but sounds good for
others:

(i)   a.   Was glaubst du [was Peter
           SM believe you SM Peter
           meint [mit wem Maria
           think   with whom Maria
           gesprochen hat]]?
           spoken   has
      b.   (*)Was glaubst du [dass
           SM   believe you that
           Peter meint [mit wem
           Peter think   with whom
           Maria gesprochen hat]]?
           Maria spoken   has
           "Who do you believe that
           Peter thinks that Maria has
           talked to?"

This could be just a matter of
morphological realization. But see
also Bayer (1996), Dayal (1996), and
the papers in Lutz and Müller (1995)
for further differences between
Hindi and German.

25   Iraqi Arabic patterns with Hindi.
Wahba (1991) notes that a clause
boundary in a multiple question
leads to ungrammaticality, as in (i):

(i)   *sh-i'tiqdit   Mona [meno
       SM-believed Mona who
       tsawwar [Ali sa'ad   meno]]?
       thought   Ali helped who
       "Who did Mona believe thought
       Ali helped who?"

26 It should also be noted that the existence of QR itself is called into question in the recent literature. See Hornstein (1995), Kitahara (1996), Pica and Snyder (1995), and Watanabe (1997) for some discussion.

27 Beck (1996), however, claims that a single answer reading is disallowed for (47). This restriction is not found in Chinese or in Hindi.