CHAPTER II

THE SCOPE OF HINDI WH

INTRODUCTION

In recent years, substantive work has been done on question formation in the languages of North India. Hindi question formation strategies has been investigated, for example, by Davison (1984, 1988, 1994), Gurtu (1985), Mahajan (1987, 1990, 1993), Bains (1990) and Srivastav (1990, 1991a , 1991b). Dasgupta (1980) and Bayer (1990, 1993) deal with Bangla questions and Wali (1988) with questions in Kashmiri and Marathi. The primary focus of these studies is to accommodate certain locality effects manifested by wh in-situ in these languages within the principles of universal grammar. In this chapter I look at Hindi wh in-situ, drawing on my own previous work (Srivastav 1990, 1991a) as well revisions and modifications prompted by the work of other scholars. I show that the scope properties of Hindi wh in-situ can be explained in terms of the phrase structure of the language if subjacency is recognized as a constraint on LF movement as well as S-structure movement.

1. HINDI IN THE TYPOLOGY OF WH MOVEMENT

1.1. *Hindi as an In-Situ Language*

Let us begin by seeing where Hindi fits into the typology of wh languages. In general, two language types are recognized with respect to question formation strategies; languages in which the wh word occurs in clause-initial position and those in which it remains in situ. The first is exemplified by English (1a), the second by Chinese (1b):

(1) a. What did Lisi buy?

    b. Lisi mai-le sheme?
       Lisi bought what
       "What did Lisi buy?"

    c. $[_{CP}\text{what}_i\ [_{IP}\text{Lisi buy } t_i]]$

Within the Principles and Parameters framework (1a) is analyzed as the result of S-Structure movement of *what* from an A to an A´

position, specifically to spec of CP. (1b) appears to lack such movement but Huang (1982) argued that, in fact, Chinese and English do not differ in that respect. As he pointed out, wh expressions in any language would have to move to spec of CP in order to ensure interpretation since they are quantificational expressions. While this occurs at S-structure in English it happens at LF in Chinese. The difference between English and Chinese, then, is not in the presence or absence of wh movement but in the level at which such movement takes place. (1a-b), on his account, have distinct S-structure representations but identical LF representations, as shown by (1c).

Of course, languages are not parameterized simply in terms of the level at which wh movement takes place. English, for example, has LF movement of wh in addition to movement at S-structure while Romanian has only S-structure movement:

(2) a. Who$_i$ t_i has seen what?

    b. Cine$_i$ ce$_j$ t_i a   vazut t_j?
       who what   has seen

    c. $[_{CP}\text{what}_j\text{ who}_i\ [\ t_i\text{ has seen } t_j]]$

In an English multiple wh question only one wh moves at S-Structure to spec of CP, the others remain in situ. At LF, however, they move and adjoin to spec of CP in order to be interpreted. This can be compared to the Romanian example in (2b) in which all wh's must move to Spec at S-Structure (Comorovski 1989, Rudin 1988). The option of movement at LF is never exercised in such languages. The LF representations of multiple wh in both languages are the same. The difference between English and Romanian is that English does not allow multiple wh to be present in Spec position at S-structure while Romanian does. There are other languages, such as Italian, in which multiple wh's are disallowed altogether (Calabrese 1984). One might hypothesize a language-specific constraint against the presence of multiple wh in Spec at any level in Italian. Though languages display considerable diversity in question formation strategies it seems possible to have a uniform theory of wh movement based on certain universal principles, namely the necessity for wh elements to move to A´ positions combined with a parameterization of the possibility of cooccurence of multiple wh in Spec of CP.

Turning to Hindi, we see that it belongs with languages like Chinese in disallowing S-structure movement of wh expressions. The examples in (3) show that in simple sentences Hindi wh's do not move to clause-initial position:

(3) a. tum kahaaN jaa rahe ho
        you where go-PROG-PR
        "Where are you going?"

   b. tum kis-ko pasand karte ho
       you who-A like   do-PR
       "Whom do you like?"

   c. tum-ne kis-ko kitaab dii
       you-E who-D book give-P
       "Whom did you give the book to?"

   d. tum-ne us-ko kyaa diyaa
       you-E he-D what give-P
       What did you give him?"

Hindi differs from Chinese, however, in permitting wh expressions to be fronted.[1] Such fronting is not only optional, it is not necessarily to clause-initial positions. (3d), for example, has the following variants:

(4) a. kyaa tum-ne us-ko diyaa
        what you-E him-D give-P

   b. tum-ne kyaa us-ko diyaa
       you-E what him-D give-P

   c. tum-ne us-ko diyaa kyaa
       you-E him-D give-P what

       "What did you give him?"

Overt wh movement in Hindi is therefore generally taken to be an instance of scrambling, not movement to Spec of CP.[2] The general concensus is that typologically, Hindi is an in-situ language.

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[1] There is a weak tendency for wh expressions to occur in preverbal position, as noted by Mahajan (1990) and Bains (1989). There is no fixed position, however, to which wh expressions must move.
[2] See Mahajan (1990), Déprez (1989) and Dayal (1994a) for discussion of the precise nature of scrambling in Hindi.

1.2. *Some Unexpected Effects*

The difference between Hindi and in-situ languages like Chinese surfaces when we examine the behavior of wh inside finite complements. Consider the Chinese example in (5), which is ambiguous between a direct and an indirect question interpretation:

(5)   ni   zhidao ta zuo-le sheme
       you know he did   what
       "What do you know he did?" AND
       "You know what he did."

The ambiguity of (5) is explained in Huang's account by the fact that the wh may move at LF to the embedded spec position or to matrix spec since the matrix verb *zhidao* "know" can select a + or − wh complement.

In English too the verb *know* selects either + or − wh complement, yielding (6a) or (6b):

(6) a. Who$_i$ does John know $[_{CP}t'_i [_{IP}t_i$ will come]]?

   b. John knows $[_{CP}$who$_i [_{IP}t_i$ will come]]

Since wh-movement is obligatory at S-structure and wh movement at LF does not originate from operator positions (Chomsky 1986a), the scope of English wh is transparent at S-structure.

Hindi being an in-situ language, we would expect the Hindi counterpart of (5) to be ambiguous. In point of fact, an example like (7), has only an indirect question reading:

(7)   tum jaante ho [ki us-ne kyaa kiyaa]
       you know-PR that he-E what do-P
       "You know what he did." NOT
       "What do you know he did?"

Since the verb *jaannaa* "know" can select -wh complements and the wh expression is in an A position at S-Structure, it is not immediately clear why matrix scope is blocked. The primary challenge in an analysis of Hindi questions, then, is determining the factors which prohibit matrix scope for Hindi wh in-situ inside finite complements.

A related issue has to do with the strategy employed to get direct question interpretation in structures like (7). It has been noted by Gurtu (1985) and Mahajan (1987) that though Hindi does not

ordinarily have overt wh movement, such movement is used to question out of finite complements:[3]

(8)   kyaa$_i$ tum jaante ho ki   us-ne t_i kiyaa
      what you know-PR that he-E   do-P
      "What do you know that he did?"

The extraction strategy illustrated here is somewhat controversial and we will address the issue of its status in section 3.1. The point to note here is that the paradigm in (7) and (8) is unexpected given the standard view of wh movement. Huang, for example, presents the following evidence to show that LF movement is less restricted than S-structure movement. In (9a) topicalization out of Chinese relative clauses at S-structure is banned while LF wh movement from the same position is perfectly acceptable:

(9)   a.   *Lisi$_i$ ni   zui   xihuan [[wo piping t_i] de wenzhang]
           Lisi you most like   I   criticize   DE article]
           "Lisi is the person such that you like the articles where I criticized him."

      b.   ni   zui   xihuan [[wo piping   she] de wenzhang]
           you most like   I   criticize who DE article
           "Who is the person such that you like the articles where I criticized him?"

In Hindi, on the other hand, LF movement from finite embedded clauses is blocked in (7), while S-structure movement is permitted in (8). This seems to suggest that LF movement may be more restricted than overt movement. A second challenge in the analysis of Hindi questions, then, is to reconcile the possibility of overt extraction out of finite complements with its impossibility at LF. And we need to ensure that whatever account is proposed for Hindi fits in within a universal theory of wh movement.

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3 The primary strategy for the purpose is scope marking, which we discuss in Chapter III.

2. LF MOVEMENT OF HINDI WH

2.1. *Finiteness vs. Positioning*

Let us consider the scope properties of Hindi wh in-situ first and then turn to overtly moved wh expressions. Towards this end, let us take a closer look at complementation in Hindi. We have seen in (7) that finite complements are scope islands for wh movement. When the complement is non-finite, however, wh movement to matrix Spec is not only possible but necessary. (10) has only a direct question interpretation though an indirect question interpretation would be compatible with the selectional requirements of the verb:

(10)   tum [kyaa karnaa] jaante ho
       you what do-INF know-PR
       "What do you know to do?" NOT
   "You know what to do."

It has been claimed that finiteness is the relevant factor in determining scope (Mahajan (1987) and Davison (1994) for example) but if we look at the data, we notice that in addition to a difference in finiteness, the complements also differ in position. Non-finite complements precede the verb, finite complements follow it. It has to be established, therefore, which is critical in determining scope, finiteness or positioning. I will propose that it is not finiteness but the postverbal position that is directly responsible for blocking matrix scope of wh in-situ.

The crucial example comes from extraposed non-finite clauses. As noted by Davison (1988) sentences like (11b), unlike those in (11a), are not direct questions. Since non-finite clauses in Hindi do not license narrow scope readings, (11b) is simply ungrammatical:[4]

(11)   a. tum [PRO kyaa paRhnaa] caahte ho
         you   what read-INF want-PR
         "What do you want to read?"

       b. *tum t_i caahte ho [$_{XP_i}$PRO kyaa paRhnaa]
          you   want-PR   what read-INF
          "What do you want to read?"

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4 I am not completely sure whether (11b) cannot be redeemed by special intonation. Even if that were possible, the point of the present discussion remains unaffected if we focus on the sharp contrasts that are evident under normal intonation patterns.

One way of describing the scope facts in (11a-b) is the following. The complement originates inside VP, specifically to the left of V, as in (11a) from where extraction of wh is licit. The complement may be optionally scrambled to the right of VP, and adjoined presumably to IP or CP. Extraction from this adjoined position is not possible:

(12) $[_{CP/IP} [_{IP} [_{VP}...t_i...]] [_{XP_i}]]$
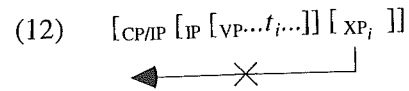
I should point out that extraposition of a non-finite complement does not lead to ungrammaticality, per se. For example, if (11b) contained a referential term like *War and Peace* or an ordinary quantifier like *har kitaab* "every book" instead of a wh expression like *kyaa* "what", the sentence would be completely acceptable. Thus the "what", the sentence would be completely acceptable. Thus the source of the ungrammaticality cannot be the extraposition but the wh expression inside the complement clause.[5] As noted already, Hindi non-finite clauses do not constitute appropriate scope domains for wh expressions, ruling out a narrow scope interpretation. The wide scope reading that was originally possible is now lost, showing that the postverbal adjoined position is a scope island for wh expressions.

Generalizing from cases of non-finite complementation to finite complementation, it seems quite plausible to assume that the complementation, it seems quite plausible to assume that the postverbal position blocks matrix scope reading of wh in-situ in these cases as well. Let us accept for now the descriptive fact that finite clauses always occur postverbally. A legitimate question to consider at this point is whether they are generated in that position or whether they originate preverbally and are then extraposed. Put another way, we might wonder whether finite complements in Hindi have the status of arguments or adjuncts.

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5 There are examples of sentences in which the wh intervenes between the main verb and the aux of the matrix verb and the non-finite verb follows the auxilliary. In these cases, wide scope is not blocked:

(i)   tum caahte   kyaa ho   paRhnaa
         you want-PR what AUX read-INF
         "What do you want to read ?"

I will not deal with such sentences since I think they involve scrambling of a special sort. Perhaps the wh is scrambled out of the non-finite phrase first and adjoined to the right of the verb *caahnaa*. When the verb raises to INFL the wh expression is raised along with it. The rest of the non-finite phrase subsequently adjoins to the right of IP. Here, it suffices to note that the whole complement phrase does not occur postverbally in this case. LF movement of the wh phrase does not have to move out of the postverbal phrase.

Consider (13), a variant of (7), in which an overt DP appears in the preverbal position:

(13)   tum yeh jaante ho ki   us-ne kyaa kiyaa
         you this know-PR that he-E what do-P
         "You know what he did."

Intuitively, *yeh* "this" stands in place of the finite clause. In this sense it is a dummy element (but see section 3.2). Hindi being an SOV language in which case and theta role are assigned to the left, we conclude that the dummy *yeh* in (13) is in argument position and absorbs case and theta role. The actual complement is base generated in adjoined position and is coindexed with the argument position, as shown in (14a). The postverbal position cannot be considered an argument position:

(14) a. $[_{CP/IP} [_{IP} [_{VP}...this_i...]] [_{CP_i}]]$

     b. $[_{CP/IP} [_{IP} [_{VP}...pro_i/t_i...]] [_{CP_i}]]$

On analogy with this, I will suggest that the finite complement in structures where there is no preverbal element is also in adjoined position. (7), for example, may be derived via extraposition or be base-generated in adjoined position and coindexed with a null argument in preverbal position, as shown in (14b). The latter option is quite plausible since Hindi freely allows null arguments. The data so far leave the choice between the two possibilities underdetermined.[6] In either case, the correlation with the non-finite case in (11b) is established. The finite complement is in an adjoined position and the absence of wide scope readings correlates with this fact. Before going into an explanation of how adjunction interferes with matrix scope, however, let us see why finite and non-finite clauses differ with respect to positioning.

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6 As we will see, an extraposition analysis is crucially needed to explain cases of overt wh extraction out of these clauses.

2.2. *Finiteness and Case Resistance*

Hindi, as mentioned earlier, is an SOV language. Thus, ordinary objects occur to the left of the verb and display case-marking (see Mohanan 1990 for an extensive discussion of the Hindi case system):

(15) a. raam aadmii-ko / jaun-ko jaantaa hai
      Ram man-A   John-A know-PR
      "Ram knows the man/John."

    b. raam jaun -ke baare meN jaantaa hai
      Ram John about   know-PR
      "Ram knows about John."

If we take case marking and theta-role assignment to be uniformly to the left in Hindi, an explanation for the apparent SVO order with finite complementation can be given in terms of the Case Resistance Principle (CRP) proposed by Stowell (1981). According to Stowell, the +tense feature located in C^0 is incompatible with case. CP's must therefore be in adjoined positions at S-structure. The CRP predicts that CP's will be barred from the preverbal case position in Hindi. They can only appear adjoined to IP or CP and be linked to an argument position to the left of the verb. The example in (13) displays this in a transparent manner, and a similar analysis for cases like (7) would seem to be the null hypothesis.[7]
    Invoking the CRP in Hindi might seem problematic, at first, for an analysis of non-finite complementation, since CRP also disallows infinitives from appearing in cased positions. As we saw in (10), though, non-finite complements do appear in the canonical object position in Hindi. If the present account is to be maintained Hindi non-finite complements cannot be CP's, as they have generally been taken to be. Subbarao (1984), Mahajan (1987), Davison (1984) and (1994), for example, consider them left branching CPs, an analogue of infinitives. Here I would like to suggest that this approach to non-finite complementation is incorrect. The complements at issue are not infinitives of category CP, but gerundive constructions which are nominalized IP's. The CRP does not bar them from appearing to the left of the verb since gerundive nominalized expressions crucially lack the +tense feature.
    It is easily verified that Hindi non-finite complements have the typical characteristics of gerunds. For example, they behave like

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[7] Details aside, this is a fairly standard view. Bayer (1990) and (1993), however, argues that the finite CP is a bona fide argument of the verb. Mahajan (to appear) also argues for this, following Kayne's (1994) proposal.

noun phrases in terms of distribution and case marking, as demonstrated by the following:

(16) a. raam [ghar jaanaa] caahtaa hai
      Ram [house go-INF] want-PR
      "Ram wants to go home."

    b. raam Ravi-ko [jaane]-ko/ke   liye kahegaa
      Ram Ravi-D [go-INF]-A/for   will say
      "Ram will tell Ravi to go."

    c. raam-ko [kaam karne]-kii ikšaa hai
      Ram-D [work do-INF]-G desire be-PR
      "Ram has desire of doing work."
      ("Ram wants to work.")

    d. raam-ne us-ko [jaane]-kaa hukm diyaa
      Ram-E he-D [go-INF]-G order give-P
      "Ram gave him an order of going"
      ("Ram ordered him to go.")

In (16a) the gerundive suffix *-naa* has nominative case, i.e. it has no inflection. In (16b) it can take accusative case marking *-ko* or the postposition *ke liye* and the gerundive suffix itself is in oblique case *-ne*. In (16c-d) the gerund displays genitive case inflecting for gender, in agreement with the noun *ikšaa* or *hukm*. The non-finite suffix *-naa* is consequently in oblique case. An ordinary noun phrase like *laRkaa* "boy" would show identical morphology if it occurred in similar contexts. Even though the natural English translations of the sentences in (16) use an infinitival, the morpheme *-naa* seems to be closer to the nominal suffix *-ing* that we see in gerunds.
    Non-finite clauses also trigger verb agreement, as shown by Butt (1993). In this respect they behave like ordinary noun phrases. Verbs in Hindi agree with the highest nominative argument. In (17) the subject is nominative and the verb agrees in gender and number with it, singular feminine in (17a) and singular masculine in (17b):

(17) a. anu hindii/hisaab nahiiN jaantii hai
      Anu Hindi/math not   know-PR
      "Anu doesn't know Hindi/math."

    b. ravi hindii/hisaab nahiiN jaantaa hai
      Ravi Hindi/math not   know-PR
      "Ravi doesn't know Hindi/math."

(18) is a dative subject construction and agreement is now with the nominative object, singular feminine in (18a) and singular masculine in (18b):

(18) a. anu-ko/ravi-ko hindii nahiiN aatii hai
         Anu-D/Ravi-D Hindi not   come-PR
         "Anu/Ravi doesn't know Hindi."

     b. anu-ko/ravi-ko hisaab nahiiN aataa hai
         Anu-D/Ravi-D math   not   come-PR
         "Anu/Ravi doesn't know math."

In (19) the object is a gerund whose internal agreement is determined by its own argument structure. In (19a) the embedded object is feminine, in (19b) it is masculine. The point of significance here is that this agreement percolates up to the matrix verb because the gerund functions like an object of the matrix verb:

(19) a. mujhe gaRii calaanii   aatii hai
            I-D   car   drive-INF come-PR
            "I know car-driving."

     b. mujhe taaNgaa calaanaa   aataa hai
            I-D   buggy   drive-INF come-PR
            "I know buggy driving."

Finally, overt subjects of Hindi non-finite complements show genitive case, just like gerunds:

(20) a. raam [ramaa-kaa ghar par rahnaa] pasand kartaa hai
            Ram Rama-G   house at stay-INF like   do-PR
            "Ram likes Rama's staying at home."

     b. raam [ramaa-ke aane]   -ke baare meN jaantaa hai
            Ram Rama-G come-INF about   know-PR
            "Ram knows about Rama's coming."

The variation between a controlled PRO, as in the examples in (16), and a genitive overt DP in subject position is typical of gerunds, not and ordinary infinitives. As such, an analysis of Hindi non-finite ordinary infinitives. As such, an analysis of Hindi non-finite complements as gerunds seems fairly plausible. Their occurrence in case marked positions is therefore predicted by the CRP.[8]

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8 It seems that Hindi may not have infinitives at all. For example, the complements of ECM verbs never have verbs:

A consequence of this analysis of non-finite complementation is that the interpretation of wh embedded inside them is explained. Let us assume an analysis of gerunds such as Baker (1985) and Milsark (1988) and take the gerund to be an IP whose head is a +N category. Consider the following:

(21) a. tum [kyaa karnaa] jaante ho
            you what do-INF   know-PR
            "What do you know to do?"

     b. tum [bartan kaise dhonaa] caahte ho
            you dishes how   wash-INF want-PR
            "How do you want to wash the dishes?"

     c. tum [vahaaN kaise jaane]-kii soc rahii ho
            you there   how go-INF-G think-PROG-PR
            "How are you thinking of going there?"

Since gerunds are nominalized IP's, there is no spec position inside the gerund that the wh could move to. In order to be interpreted, then, the embedded wh moves to matrix spec. Note that this movement is licit since the gerund, being in complement position, is L-marked by the verb in the sense of Chomsky (1986a) and does not constitute a barrier for wh extraction. (21a) involves no subjacency violation, as shown in the following LF:[9]

(22) $[_{CP}$what$_i$ $[_{IP}$you $[_{IP}PRO$ t_i doing] know]]

(23) shows further proof that there is no landing site for wh inside the complement:

(i)   ravii [jaun-ko apnaa dost] maantaa hai
         Ravi John-A self's friend consider-PR
         "Ravi considers John his friend."

(ii)   *ravii [jaun-ko apnaa dost honaa] maantaa hai
         Ravi John-A self's friend be-INF consider-PR
         "Ravi considers John to be his friend."

This suggests that the complement must be an adjectival phrase rather than an infinitival.

9 I do not represent, for ease of exposition, the intermediate adjunctions of wh required in the Barriers model. The main point of the argument would be maintained in a full derivation.

(23)   *vo [kyaa karnaa] puuch rahaa thaa
        he what do-INF ask-PROG-P
        "He was asking what to do."

The matrix verb *puuchnaa* "to ask" requires a +wh complement but the complement, being a gerund, does not have a spec position to which the wh can move. The selectional restrictions of the matrix verb are not satisfied and the sentence is ruled out. The impossibility of narrow scope readings for wh's embedded inside non-finite complements, as in (21a) and (23), cannot be accounted for in analyses which represent non-finite complements as CP's but follows straightforwardly under the view that they are gerunds.

To sum up so far, I have shown that there is a systematic correlation between the properties of Hindi phrase structure and the scope of embedded wh in-situ. Non-finite complements being scope gerunds, can appear in the canonical object position to the left of the verb. They yield wide scope readings for wh expressions inside them because this position is L-marked by the verb; narrow scope readings are ruled out because gerunds lack the CP projection. When such complements appear postverbally as a result of scrambling, wide scope interpretations are blocked and the result is ungrammaticality. Finite complements, on the other hand, cannot appear in the canonical object position due to the CRP and must appear right-adjoined to IP or CP, a position from which wh expressions cannot take matrix scope. Since local scope for embedded wh is possible in these cases, indirect question interpretations are available.

2.3. *Adjunction and LF Wh Movement*

While the status of Hindi finite complements as syntactic adjuncts goes some way towards explaining the absence of wide scope interpretations of embedded wh's, a full account of the facts requires further elaboration. To see this, consider the following cases of extraction out of adjuncts in English:[10]

(24) a. *?Which man$_i$ did Bill go home [after he saw t_i]?
     b.   *Why$_i$ did Bill go home [after he saw John t_i]?
     c. $[_{CP_1}$which man$_i$/why$_i$ did $[_{IP_1}$Bill go home
          $[_{CP_2}t'_i$ after $[_{IP_2}$he saw t_i/he saw John t$_i]]]]$

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10   There are differences between adjuncts with respect to the level of ungrammaticality. I abstract away from that here to make a more general point.

The adverbial clause CP_2 in these examples is not L-marked by the verb and therefore constitutes a barrier. Under standard assumptions the movement in (24a) violates subjacency since it crosses the adverbial CP_2 and the matrix IP_1. It does not, however, violate ECP, since the verb *saw* lexically governs the wh trace. The movement in (24b) violates the ECP in addition to subjacency. The trace of the wh is not lexically governed so that antecedent government must hold of the A´ chain created by wh movement. CP_2 being a barrier prevents antecedent government in one link of the A´ chain. The difference between a subjacency violation and an ECP violation is reflected in a perceived difference in the level of ungrammaticality of (24a) and (24b).

Let us return to the case of Hindi finite complements. Recall that in (7), repeated below as (25a), the wh in-situ is an argument. (25b) shows that the facts hold uniformly for arguments and adjuncts:

(25) a. tum jaante ho ki   us-ne kyaa kiyaa
         you know-PR that he-E what do-P
         "You know what he did."

     b. tum jaante ho ki   us-ne yeh kaam kaise kiyaa
         you know-PR that he-E this work how do-P
         "You know how he did this work."

     c. $[_{CP_1}$what$_i$/how$_i$ $[_{IP_1}$you t_2 know
         $[_{CP_2}t'_i$ $[_{IP_2}$he did t_i/he did the work $t_i]]]]$

The impossibility of matrix scope for the embedded adjunct wh in (25b) is expected under the view that CP_2, the finite complement, is a syntactic adjunct. The explanation would be essentially parallel to that of (24b). CP_2 would block government of t'_i from matrix Spec, leading to an ECP violation. The problem is in explaining the impossibility of matrix scope for the embedded argument wh in (25a). As in the case of (24a), ECP is satisfied since the original trace is lexically governed. Thus the only possible violation here is a subjacency violation. However, it is generally assumed that while ECP applies at S-structure and LF, subjacency applies only at S-structure. This has been argued most forcefully by Huang (1982) on the basis of contrasts like the following in Chinese:

(26) a. [shei xie de shu] zui youqu
         who write DE book most interesting
         "Books that who wrote are most interesting?"

b. *[ta weisheme xie   de shu] zui   youqu
    he why   write DE book most interesting
  "Books that he wrote why are most intersesting?"

Both structures involve LF movement of wh out of a complex DP, a
potential Subjacency violation. (26a) is an acceptable direct question
because the trace of the subject wh is lexically governed in Chinese,
showing that subjacency is not operative at this level. The trace of the
wh in (26b), on the other hand, is not lexically governed. The
unacceptability of this sentence shows that ECP is operative at LF.

The problem that confronts us in the case of Hindi finite
complementation is the fact that LF movement of adjuncts as well as
argument wh expressions are blocked. Let us analyze the implications
of this problem, adopting for concreteness the modification of the
Barriers model proposed in Cinque (1990).[11] Cinque, following Rizzi
(1990), separates two types of relations that wh expressions may enter
into. Binding relations are formed by those wh expressions that are
inherently "referential" and have the potential to belong to a
preestablished set in the discourse. That is, wh expressions that have
the potential to be D-linked, in the sense of Pesetsky (1987).
Government relations, on the other hand, are formed by all wh
expressions. The binding relation correlates with that of successive cyclic
wh movement, the government relation with that of long
wh movement. Under this approach, a single barrier is sufficient to create
a subjacency or an ECP violation but there is a difference between
what counts as a barrier for binding and what counts as a barrier for
government:

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[11] In earlier work (Srivastav 1990, 1991a and 1991b) I had presented an account
of these facts based on adjunction as a debarrierizing operation. See Mahajan
(1994) for arguments against the specifics of that proposal. I have reconsidered
that approach due to some of the arguments given by Mahajan. Also, because in
recent work the use of adjunction as an escape hatch has been shown to be
problematic (Cinque 1990 and Lasnik and Saito 1992). Finally, the earlier
approach does not explain the absence of wide scope readings for wh expressions
in extraposed non-finite clauses. This is because the explanation crucially relied
on a requirement of antecedent government for the complementizer ki that is
found in finite complements. Since there is no such requirement for non-finite
complements, the explanation could not extend to them. I have followed Bayer
(1993) in adopting Cinque's directionality clause to explain the effects.
However, I differ from Bayer in treating the finite complement as a syntactic
adjunct rather than an argument.

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(27) a. Every maximal projection that fails to be (directly or
      indirectly) selected in the canonical direction by a
      category nondistinct from [+V] is a barrier for binding.
   b. Every maximal projection that fails to be directly selected
      by a category nondistinct from [+V] is a barrier for
      government.
   c. A nonpronominal EC must be properly head-governed
      by a head nondistinct from [+V]

For our purposes, an important piece of Cinque's proposal is that
directionality is brought into the picture. Even if the adjoined
complement in Hindi were to be treated as indirectly selected by the
verb, as has been argued for example by Bayer (1990), it would count
as a barrier for binding since it is not in the canonical direction for
Hindi. However, the larger question of the relevance of subjacency at
LF remains unaffected in this proposal. Subjacency effects are here
subsumed under the first clause requiring direct or indirect selection
in the canonical direction. Though the issue is not addressed directly,
this clause is not expected to apply at LF since the scope properties of
wh in-situ in Chinese or English do not show subjacency effects. In
order to incorporate the Hindi facts, we might say that languages
differ with respect to the relevance of subjacency at LF. LF
movement in Hindi, unlike LF movement in Chinese or English,
respects subjacency. This statement is not only somewhat implausible,
but as we will see below, it is also empirically untenable in its simplest
form.

Consider the following, which have wh expressions inside ordinary
adjuncts. Argument wh expressions yield well-formed questions but
adjunct wh expressions are unacceptable:

(28) a. vo [raam-ko dekhne ke baad] ghar gayii
     she Ram-A   see-INF after   home go-P
    "She went home after seeing Ram."

   b. vo [kis-ko dekh-ne ke baad] ghar gayii
     she who-A see-INF after   home go-P
    "Who did she go home after seeing?"

(29)a. us-ne [bas-se jaate samai] us-ko dekhaa
     she-E bus-INS going time   she-A see-P
    "She saw her while going by bus."

   b. *tum-ne [kaise jaate samai] us-ko dekhaa
     you-E how   going time   she-A see-P
    "For what x, you saw her while going in manner x?"

Argument-adjunct asymmetries of this kind, we saw, are generally ascribed to the fact that subjacency, though not the ECP, is inoperative at LF. Given that we have independent evidence that subjacency is operative at LF in Hindi, this explanation cannot be used. To explain the contrast in (28)-(29), I will therefore adopt the proposal in Nishigauchi (1986, 1990) that such apparent long wh movement at LF is, in fact, due to pied-piping of the containing clause.[12] As he demonstrates, there are independent reasons why adjuncts don't trigger the feature percolation needed for pied-piping, resulting in the argument-adjunct asymmetry we see here. But now, note that if such asymmetries can be explained in terms of pied-piping, there remains little reason not to adopt this explanation universally (see also Lasnik and Saito 1992 for comparison between the two approaches).

To sum up this section, I have shown that the unusual scope properties of Hindi wh in-situ follow straightforwardly from its phrase structure and a theory of LF movement sensitive to subjacency. The absence of narrow scope readings for wh inside non-finite complements is due to the fact they lack a CP projection. Wide scope readings for wh inside such complements is possible from the preverbal position where they are directly selected by the verb. Wide scope readings for all wh expressions are lost when the complement is extraposed. Since the postverbal adjoined position is not directly selected by the verb and is not in the canonical direction it is a binding and a government barrier. This adjunction, which is optional in the case of non-finite complements, is obligatory for finite complements due to CRP. Thus finite complements always behave as strong islands at LF. They contrast with ordinary adjuncts in Hindi which allow arguments but not adjuncts inside them to be questioned. Given that subjacency must be recognized at LF in Hindi, we take these cases to involve pied-piping of the whole adjunct, not long wh movement in violation of subjacency.

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[12] For a solution to the semantic issues that remain open in Nishigauchi's analysis, see von Stechow (to appear). Note that Hindi non-finite relatives precede the head and allow for direct question interpretations, as in (i):

(i)   tum-ko kis-kii likhii   kitaabeN pasand haiN
        you-D who-G write-PCPL books   pleasing be-PR
    "Books written by who are pleasing to you?"

Though I do not discuss such constructions, I assume an analysis along the lines of Nishigauchi for the possibility of direct question interpretations for them.

3. OVERT MOVEMENT OF HINDI WH

3.1. *Extraction as Long-Distance Scrambling*

Let us turn now to cases of overt extraction out of finite complements. The relevant example in (8) is repeated below as (30a):

(30) a. kaun$_i$ tum socte ho ki t_i aayegaa
        who   you think-PR that   come-F
        "Who do you think will come?"

    b. kaun$_i$ tum jaante ho ki   anu-ko t_i pasand aayegaa
        who   you know-PR that Anu-D   be-pleasing-F
        "Who do you know that Anu will like?"

    c. kyuuN$_i$ tum samajhte ho ki   anu t_i nahiiN aayii
        why   you believe-PR that Anu   not   come-P
        "For what x, you believe that Anu didn't come due to x?"

The question raised by such examples is whether the postverbal position is a scope island for S-structure movement. Put another way, we want to know whether subjacency constrains movement at S-structure. In this section I will propose that the extraction strategy involves long-distance scrambling as opposed to movement to Spec of CP. I will show that scrambling in Hindi respects subjacency and therefore cannot take place from the postverbal position. The movement seen in (30a), I argue, takes place at a point in the derivation when the finite clause is not yet a scope island. As such, the extraction strategy does not require any adjustment in the view of subjacency that we have adopted in connection with Hindi wh in-situ.

Before presenting the analysis of overt extraction as scrambling, let me make a clarification about the status of the extraction strategy in Hindi. This strategy, first discussed by Gurtu (1985) and later by Mahajan (1987), is somewhat controversial and often native speakers do not accept the data. I agree with Gurtu and Mahajan, however, that this strategy is available in Hindi but it is clearly not the primary strategy for questioning out of embedded finite clauses. In normal contexts, a scope marking structure is used for the purpose but let us leave that aside until Chapter III and focus on the extraction strategy for now. The acceptability of the examples in (30) has much to do with intonation. If read with normal intonation, they usually sound bad but there is a dramatic improvement when proper emphasis is used. For example, stress on the matrix subject renders them all

completely acceptable. In order to understand what is at issue, let us get a sense of what such questions mean.

These questions are not simple requests for information but have a contrastive meaning. An accurate translation for (30a), for example, would be something like *Who do you (as opposed to others) think will come?* It is possible that the questioner already has some information with regard to the value of *who*; it is not the new information being sought. (S)he is interested in the value of *who* with respect to the opinion the addressee holds — hence the focus on *you* rather than on *who*. In this sense, (30) does not represent the standard procedure for forming direct questions. While its meaning is that of a direct question, there is also a contrastive aspect to its meaning, indicated by stress.

I propose that the questions in (30) involve long-distance scrambling of the embedded wh. While ultimately the wh must move into Spec position in order to be interpreted, at S-structure the wh moves from the lower clause and adjoins to the matrix IP. Adjunction to IP for wh expressions may not be standard but proposals have been made to this effect for other languages. For example, S-structure adjunction of wh has been claimed for some of the Slavic languages, namely Serbo-Croatian, Polish and Czech (Rudin 1988) as well as for Chinese (Tang 1988). Tang, for example, shows that though Chinese wh typically remains in situ, it may move at S-structure as an instance of topicalization. She argues that the semantic and syntactic properties of such movement are distinct from those of LF movement and claims that it is not to Spec of CP but to an IP-adjoined position. The possibility of wh topicalization, apparently, is not typologically unusual. I agree with Gurtu and Mahajan, then, that Hindi wh may be extracted but I differ from them in the characterization of such movement. I do not consider it the normal or standard procedure for forming direct questions but a strategy with special discourse properties.

An interesting consequence of this approach is that though further movement into matrix Spec position is required in order to get a direct question interpretation, such movement is not forced. LF movement can undo scrambling and it may still be possible to get an indirect question reading. (30a), for example, could be interpreted as *You wonder who will come.*[13] For example, suppose that I am trying to guess what you are thinking, I might say (30a) with this intended meaning. This fits in with an analysis of overt extraction as long-

13 I would like to thank J. Abe for pointing out this possibility. Incidentally, Hindi *socnaa* can be translated as *wonder* since it can take +wh complements too.

distance scrambling rather than movement to Spec since the former but not the latter can be undone at LF (Saito 1985).

Another advantage of treating extraction as scrambling is that we can get the right order for wh and complementizer, noted in Mahajan (1987):

(31) a. ravi soctaa hai ki   kaun$_i$ tum soctii ho ki t_i aayegaa
         Ravi think-PR that who you think-PR that come-F
         "Ravi wonders who you think will come"

     b. *ravi soctaa hai kaun$_i$ ki   tum soctii ho ki t_i aayegaa
         Ravi think-PR who that you think-PR that come-F

Here, the complementizer *ki* "that" in the intermediate clause occurs before the extracted wh. This is to be expected if the wh is IP-adjoined but in an analysis where extraction is standard long distance wh movement, some further explanation is needed.

Mahajan (1987) suggests that in Hindi *ki* "that" is in pre-Spec position. The possibility of a complementizer preceding·Spec has been proposed by Suñer (1991) for Spanish. Thus it may be possible that Hindi, like Spanish, has the following structure C′ [C⁰ [$_{CP}$ Spec C′]] with *ki* occuring in the higher C⁰. Another possibility is that *ki* is not a complementizer at all, but a quotative particle of some kind, as has been argued by Dwivedi (1994). Certainly, it does have some unusual properties. For example, in a finite complementation structure a pause can intervene quite naturally after *ki* and before the subordinate clause. It is much less natural between the matrix clause and *ki*. Further, it does not lend itself to regular co-ordination as shown below:

(32) a. *vo jaantii hai ki   anu aayii   aur ki ravii gayaa
         she know-PR that Anu come-P and that Ravi go-P
         "She knows that Anu came and that Ravi left."

     b. vo jaantii hai ki   anu aayii   aur ravii gayaa
         she know-PR that Anu come-P and Ravi go-P
         "She knows that Anu came and Ravi left."

The ungrammaticality of (32a) shows that no maximal projection may intervene between a matrix and a *ki* clause. One might speculate here that right adjoined clauses in Hindi are licensed by being in a canonical government configuration with a g-projection of the preverbal element with which it is coindexed, in the sense of Kayne (1983). This is satisfied in the case of IP co-ordination subordinated under *ki* as in (32b), but not with regular CP co-ordination as in

(32a).[14] Admittedly, though, this is a rather unusual property for complementizers.

There is, however, one piece of evidence suggesting that *ki* may be a complementizer after all. Anticipating our discussion of Hindi relative clauses here, let me note that wh elements tend to move overtly and occur next to the head noun. Normally, there is no complementizer but it is possible to get sentences in which the two cooccur. Unlike (31), however, the wh precedes the complementizer in these cases:

(33) a. vo baat jo   ki anu jaantii hai vo nahiiN kah saktii
        that matter which that Anu know-PR she not   say can-PR
     "The thing which Anu knows she cannot say."

   b. ek laRkii jis-ko ki ravi soctaa hai ki sab cuneNge
      a girl   who-A that Ravi think-PR that all choose-F
     "A girl whom Ravi thinks everyone will choose."

If *ki* were to precede elements in Spec (33a-b) should be ungrammatical, as in the case of (31b). The facts can be explained, however, if we take the wh element in relative clauses to move to Spec at S-structure in order to satisfy the adjacency requirement between head and wh that is specific to relativization.[15] I will therefore take Hindi to have a regular CP projection, with *ki* in C^0 and wh elements moving at LF to a Spec position preceding it.

In this subsection I have tried to place in perspective the possibility of overt movement in Hindi. The central claim I have advanced is that such extraction is an instance of long-distance scrambling, not wh movement. And I have argued that special properties of the Hindi complementizer notwithstanding, the order of extracted wh and complementizer is compatible with such an analysis. Let us consider now whether long-distance scrambling of Hindi wh takes place out of the postverbal position, in violation of subjacency.

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[14] Note that it is possible to conjoin two *ki* clauses if a the preverbal pronoun is repeated in the second conjunct:

   (i)   us-ne kahaa ki anu aayii   aur yeh bhii ki ravi gayaa
           she-E say-P that Anu come-P and this too that Ravi go-P
         "She said that Anu came and also that Ravi left."

[15] The order *ki jo* is not completely unacceptable, presumably because the need for *jo* to be next to the head is only a tendency, not a strict requirement.

3.2. *Finite Complements at D-Structure*

In order to assess the role of subjacency in overt extraction, let us bring into the picture structures like (13) in which there is an overt pronominal in preverbal position. There is a clear contrast between them and bare finite complementation with respect to extraction. In this section I want to look closely at both structures with a view to getting a better understanding of movement phenomena.

yeh complements, as I will refer to finite complements co-indexed with pronouns in preverbal positions, do not allow wh scrambling. This is shown by the contrast between (30a) and (34) below:[16]

(34)   *kaun$_i$ tum yeh$_j$ socte ho [$_{CP_j}$ ki t_i aayegaa]
         who   you this think-PR   that come-F
       "Who do you think will come?"

That the contrast is not restricted to wh extraction can be shown by testing with other expressions that clearly originate in the embedded clause. Consider, for example, an indefinite like *koii-bhii*. As shown in (35), *bhii* is like English *any* in requiring the presence of negation or modality (see also Davison 1978 and Dayal 1995a):

(35) a. koii-bhii laRkii jaa saktii hai
        some-PSI girl   go can-PR
      "Any girl can go."

   b. koii-bhii laRkii nahiiN gayii
      some-PSI girl   not   go-P
     "No girl went."

   c. *koii-bhii laRkii gayii
      some-PSI girl   go-P
     "Any girl went."

Given this fact, we know that the topicalized expression in (36a) must originate in the embedded clause and move at S-structure to the matrix. As shown by the ungrammaticality of (36b), the presence of the preverbal pronoun blocks such movement:

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[16] The parallels with complementation in Dutch and German which have preverbal elements are very striking but I defer any explicit comparison until Chapter III.

(36) a. koii-bhii laRkii$_i$ ravi kahtaa hai ki t_i nahiiN aayii
       some-PSI girl   Ravi say-PR   that not   come-P
       "No girl, Ravi says came."

   b. *koii-bhii laRkii$_i$ ravi yeh kahtaa hai ki t_i nahiiN aayii
       some-PSI girl   Ravi this say-PR   that not   come-P
       "No girl, Ravi says it that came."

Any explanation for overt wh extraction that takes the complement to be transparent at S-structure must contend with the difference made by the presence of the pronoun. Clearly a constraint like subjacency must constrain S-structure movement in Hindi in these cases.
   Further proof that Hindi S-structure movement respects subjacency comes from relative clauses, which also do not allow extraction:[17,18]

(37) a. *kisii bacce-ko$_i$ [vo laRkaa
       some child-A   that boy
       [jis-ne t_i maaraa]] yahaaN hai
       who-E   hit   here   be-PR
       "The boy who hit some child is here."

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17 Dwivedi (1994) notes that it is possible for referential NP's, but not quantifiers or wh expressions, to be extracted from relative clauses. She calls this type of extraction *referential NP topicalization* and demonstrates that its properties are distinct from the kinds of extraction under discussion here. Note, incidentally, that referential NP topicalization is also possible in finite complement structures with preverbal pronouns:
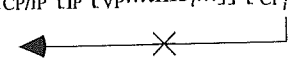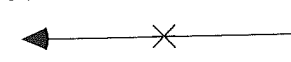
   (i)   anu-ko tum jaantii ho ki
          Anu-A you know-PR that
          [vo laRkaa [jis-ne *pro*$_i$ maaraa]] yahaaN rahtaa hai
          that boy   who-E   hit   here   lives
          "Anu, you know that the boy who hit her lives here."

   (ii)   anu-ko tum yeh jaantii ho ki   ravi-ne *pro*$_i$ maaraa
          Anu-A you this know-PR that Ravi-E hit-P
          "Anu, you know that Ravi hit her."

18 Dwivedi (1994) questions the validity of (37b) as a relevant example since the corresponding structure with the wh left in situ is ungrammatical. This, under the present account, is due to the directionality clause of subjacency, which we have identified as operative at LF. Note that if it were possible to extract wh at S-structure or LF, an acceptable interpretation could be defined. The intended meaning is given in the translation.
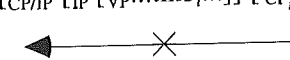
---

   b. *kis   bacce-ko$_i$ tum jaantii ho ki   [vo laRkaa
       which child-A   you know-PR that that boy
       [jis-ne t_i maaraa]] yahaaN hai
       who-E   hit   here   be-PR
       "Which child is such that you know that the boy who hit her/him is here?"

It is clear that the explanation for extraction out of bare finite complements cannot be that S-structure movement in Hindi is in violation of subjacency. As we will see, a straightforward explanation that maintains standard constraints on movement is available.
   Recall that in section 2.1 it was left open whether the finite complement is base-generated in postverbal position or moves to that position at S-structure. Under either derivation the right adjoined position is a barrier for binding and government chains formed by wh movement at LF. The presence or absence of a preverbal element is irrelevant as shown schematically in (14), repeated below:

(38) a. [$_{CP/IP}$ [$_{IP}$ [$_{VP}$...this$_i$...]] [$_{CP_i}$]]

   b. [$_{CP/IP}$ [$_{IP}$ [$_{VP}$...*pro*$_i$/t_i...]] [$_{CP_i}$]]

Turning to S-structure movement, we can represent the extraction possibilities as in (39):

(39) a. [$_{CP/IP}$ [$_{IP}$ [$_{VP}$...this$_i$...]] [$_{CP_i}$]]

   b. [$_{CP/IP}$ [$_{IP}$ [$_{VP}$...*pro*$_i$/t_i...]] [$_{CP_i}$]]

I take the presence of an overt pronoun to indicate that the finite complement is base-generated in adjoined position. No movement can take place out of such complements because it would be in violation of subjacency. In the case of bare finite complementation, however, we may hypothesize that it originates in the preverbal position which, being selected by the matrix verb, freely allows extraction. Subsequent to extraction, the complement must extrapose in order to satisfy the CRP. All further movement is blocked once

extraposition occurs, hence the impossibility of wh in-situ to get wide scope.

Supporting evidence for this explanation of wh extraction is that non-finite complements show similar behavior. (40a) shows that overt extraction is compatible with extraposition:

(40) a. kis-se$_i$ anu t_j pasand kartii hai
         who-INS Anu   like   do-PR

         [$_{CP_j}$ ravi-kaa t_i baat karnaa]
              Ravi-G   talk do-INF

         "Who is such that Anu likes Ravi's talking to him?"

   b. *anu t_j pasand kartii hai
         Anu   like   do-PR

         [$_{CP_j}$ ravi-kaa kis-se   baat karnaa]
              Ravi-G who-INS talk do-INF

         "Who is such that Anu likes Ravi's talking to him?"

Since non-finite complements typically occur in preverbal position, it seems entirely reasonable to suggest that extraction occurs prior to extraposition in (40a). Recall that the preverbal position was shown in section 2 to allow wide scope readings for wh in-situ. Once extraposition takes place, however, extraction is blocked, as shown in (40b).

A question that remains to be settled is the relationship between the elements in preverbal position and the CP in adjoined position in finite complementation structures. We know that extraposed constituents are standardly interpreted in their base positions. I assume this is done by lambda abstracting over the trace and inserting the meaning of the moved constituent by lambda conversion at the adjunction point.[19] Turning to *yeh* complements, one possibility is to treat *yeh*, the pronoun in preverbal position, semantically as a spell-out of a trace. Another is to treat it as an expletive that is replaced by the CP at LF. In either case, complete semantic uniformity between structures with or without the preverbal pronoun is predicted. In point of fact, the presence of a preverbal pronoun has a clear, if subtle, effect on the meaning of the sentence. This suggests a different relationship between the two.

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[19] Syntactic reconstruction leaves open the possibility of extraction after reconstruction, incorrectly predicting wide scope readings for wh in-situ. I therefore adopt what one might call semantic reconstruction of extraposed elements.

In order to give a sense of the difference between the two structures, I draw on the discussion in Rothstein (1995) of English structures where pronouns are coindexed with right adjoined phrases:

(41) a. It$_i$ seems [$_{CP_i}$ that we are all going to be late].

   b. It$_i$ was widely believed [$_{CP_i}$ that the earth was flat].

(42) a. I regretted (it$_i$) [$_{CP_i}$ that he was late].

   b. They never mentioned (it$_i$) to the candidate [$_{CP_i}$ that the job was poorly paid].

Arguing against Postal and Pullum (1988) and Authier (1991), Rothstein makes a crucial distinction between the pronominal elements in (41) and (42). According to her, the pronouns in (41) are pleonastics with no semantic content and must be replaced by the CP at LF. Pleonastics only appear in case-marked theta-bar positions. The pronouns in (42), on the other hand, are case-marked as well as theta-marked pronouns and have semantic content. As such, they are not subject to expletive replacement. The LF representations of (42a)-(42b) differ depending on the presence of the pronoun. The syntactic difference corresponds to a semantic difference. The pronouns in these cases are free and denote specific entities recoverable from discourse, the adjoined phrase being licensed via predication. According to her the pronoun contributes an aspect of specificity to the sentence since it refers to "some fact already broached" (Bolinger 1977). (43a), for example, is appropriate as a report of the fact that John and Mary made an announcement that is new to the speaker. (43b) is more appropriate if the speaker is reporting that John and Mary have made a public announcement of an event that she already knew to have occured:

(43) a. John and Mary have announced that they have got married.

   b. John and Mary have announced it that they have got married.

Returning to the Hindi cases, we have analyzed the prenominal position to be case-marked and theta-marked on the basis of extraction facts. A pronoun in that position therefore would not be considered a pleonastic in Rothstein's terms but would be expected to have semantic content. The Hindi counterparts of the sentences in (43) show the same difference in meaning that Rothstein identifies and we may assume that distinctions similar to the ones in English

apply to the Hindi cases. Interestingly, English shows similar effects to Hindi with respect to extraction. The versions without the pronoun allow extraction but not those with it:[20]

(44) a.   Who$_i$ don't you believe Mary will marry t_i?

     b.   *Who$_i$ don't you believe it that Mary will marry t_i?

There is another respect in which the Hindi and English cases are similar. Consider the following contrasts:

(45) a.   I don't believe John has been here in weeks.

     b.   *I don't believe it that John has been here in weeks.

(46) a.   maiN nahiiN samjhtii huuN ki   koii-bhii   aayaa hai
         I   not   believe-PR   that some-PSI come-PRF-P
         "I don't believe anyone has come."

     b. *maiN yeh nahiiN samajhtii huuN
         I   this not   believe-PR
     ki   koii-bhii   aayaa hai
     that some-PSI come-PRF-P
     "I don't believe it that anyone has come."

English *in weeks* is a polarity sensitive item that needs negation to license it, as does Hindi *bhii*. This is shown by the fact that the adjoined CP's in (45a) and (46a) are ungrammatical as root clauses. The sentences also become unacceptable when matrix negation is deleted. Note now that negation in these sentences is crucially interpreted in the embedded clause, enabling PSI licensing to take place. That is, a Neg-raised interpretation is needed in (45a) and (46a).[21] The question then becomes why neg-raising is blocked by the presence of a pronominal in (45b) and (46b).

Under one view neg-raising is syntactic movement of negation from a lower to a higher position. When movement takes place from a CP that is in adjoined position subjacency is violated. In the analysis presented here the presence of a pronoun indicates base-generation of

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[20] The extraction facts have also been noted by Cardinaletti (1990) for parallel examples in German.

[21] Dwivedi (1994) finds polarity sensitive items in bare complementation structures like (46a) to be less robust than I do. This may be because neg-raised readings are easily affected by the choice of lexical items, as discussed at length by Horn (1989).

the CP in adjoined position and neg-raising is expected to be impossible in (45b) and (46b). It is not clear, however, whether neg-raising involves movement. Horn (1989) argues argues against this position, suggesting that negation is generated in the matrix clause but gets a lower clause construal. This construal is conditional on the nature of the difference between matrix negation and embedded clause negation. Rothstein's view that the pronoun in these cases refers to a proposition recoverable from discourse suggests a substantive enough difference to rule out the possibility of a lower clause construal for negation, in Horn's sense. Thus the facts in (45) and (46) are explained even if movement of negation is not at issue.

In this section I have argued that overt wh extraction out of Hindi finite complements occurs prior to extraposition. Support for this view comes from the fact that extraction is blocked in the case of *yeh* complementation. The finite complement in these cases is analysed as base-generated in adjoined position. The contrast in extraction possibilities depending on the presence of a preverbal pronominal shows that appearances notwithstanding, wh movement at S-structure respects subjacency. Subjacency, then, is a principle that is relevant in Hindi at S-structure as well as LF.

4. ALTERNATIVES TO SUBJACENCY AT LF

4.1. *Hindi as an SVO Language*

My goal in the sections above has been to show that the behavior of Hindi wh fits in with known properties of wh movement and phrase structure. However, the investigation lead to one conclusion that is not standard. I have argued that if argument-adjunct asymmetries out of ordinary adjuncts are due to long-distance LF movement of wh expressions, subjacency must be operative at LF in Hindi since all extraction out of postverbal complements is blocked at this level. In this section I want to briefly note two proposals that have been made in the literature that obviate the need for appealing to subjacency at LF. Before doing so, however, I want to address a challenge to the fundamental premise of my account that Hindi is uniformly an SOV language and the postverbal finite complement a syntactic adjunct.

Kayne (1994) has proposed that all languages are underlyingly SVO and apparent SOV order is a result of DP movement to Spec of higher projections (see, however, Hartmann and Büring (1994) and Rohrbacher (1994) for arguments against such a view). Kayne's proposal, if correct, would turn the discussion of Hindi complementation around so that finite complementation would instantiate the base order and non-finite as well as ordinary DP

complementation the derived order. Mahajan (to appear), following Kayne, argues that Hindi is underlyingly SVO. He bases his discussion primarily on ordinary DP's, not clausal complements but the implications for wh movement are obvious.[22] The finite complement, being directly selected by the verb, could no longer be considered a government or a binding barrier.[23] This would be a welcome enough result as far as overt movement goes, but the question that has been central in the discussion of Hindi wh is the status of the finite complement for LF movement. Under a proposal where Hindi was underlyingly SVO, current notions about wh movement would have to be modified in order to ensure that Hindi wh in-situ do not take wide scope. One such modification is suggested by Mahajan (1990 and 1994) and Kim (1991) who argue that wh movement is an instance of QR, in some if not all languages.

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[22] One of the issues Mahajan discusses is variable binding of elements in the postverbal position:

   (i)   har   aadmii (yeh) soctaa hai ki   vo tez   hai
            every man   (this) think-PR   that he smart is
            "Every man thinks that he is smart."

The bound variable reading of the embedded pronoun is accounted for under the present proposal in the following way. In the case of complements generated in the preverbal position, pronouns bound by c-commanding DP's at D-structure are allowed to be semantically reconstructed. For *yeh*-complements, I assume that the proposition each man stands in the *think* relation to is indeed fixed. However, it is the character rather than the content of the proposition, in the sense of Kaplan (1977), that comes into play. The reference of *yeh* varies with each man and can be identified with different propositions, depending on which individual the pronoun is mapped onto.

[23] Dutch and German show the same SOV-SVO alternation that Hindi does but wh expressions are obligatorily fronted. Since wh movement is possible out of finite complements, they are standardly taken to be arguments (Cinque 1990). Proposals adopting Kayne's approach to complementation, such as van Gelderen (1994) or Haider (1993), fit in with this perspective. However, two current papers arguing against Kayne's proposal are Hartmann and Büring (1994) and Wiltschko (1993). Hartmann and Büring, in particular, argue for an analysis of German that is strikingly similar to the one developed here for Hindi. They too claim, for example, that wh movement out of finite complements occurs prior to extraposition.

4.2. *Wh Movement as Quantifier Raising*

Mahajan (1990, 1994) suggests that Hindi wh expressions are quantificational expressions that undergo QR instead of movement to Spec of CP. Under this view, since QR is a strictly local operation, the locality effects in the scope of Hindi wh in-situ follow without reference to constraints on long-distance movement. While I am in general sympathy with the idea of bringing locality into LF, I do not think that wh movement at LF and regular QR can be conflated. The thesis I am exploring in this book is that wh movement at LF is to the most local Spec CP position but such movement is constrained by subjacency (as well as the ECP). This view is akin, but not identical, to the view of wh movement as QR. In particular, it maintains distinctions necessary to account for two crucial differences between wh movement and QR. One, wh movement in embedded contexts is sensitive to the selectional properties of the embedding verb while QR is impervious to it. Two, wh expressions are more restricted in the domain over which they can take scope than quantifiers. The first needs no illustration but it might be worthwhile to demonstrate the second in relation to Hindi.

As we saw in section 2.2 non-finite complements, being gerunds, are not of the right category for wh expressions to take scope over them. They are, however, appropriate scope domains for quantifiers. This is shown in (47):

(47) a. koii   laRkii [ravi-kaa har   laRke-se
        some girl   Ravi-G   every boy-INS
        baat karnaa] pasand kartii hai
        talk do-INF like   do-PR
        "Some girl likes Ravi's talking to every boy."

     b. anu [ravi-kaa kis-se   baat karnaa] pasand kartii hai
        Anu Ravi-G   who-INS talk do-INF like   do-PR
        "Who is such that Anu likes Ravi's talking to him?"

The universal cannot take scope over the existential in (47a). This shows that QR of *har laRkaa* "every boy" to the matrix is blocked, and further, that QR to the complement is possible. This contrasts with (47b) which has a direct question interpretation, showing movement of wh from embedded position to matrix Spec. One way of maintaining the view that wh movement is an instance of QR would be to say that all movement at LF is to the closest scope position. Recall, however, that when the complement is extraposed as in (40b), the closest scope position for the wh expression is still the matrix clause. But the structure is unacceptable, showing that an otherwise

possible movement is blocked. This can only be explained if constraints that take into account the syntactic status of the adjoined position are operative at LF.

4.3. *Complementation as Co-Ordination*

A very different proposal that also does away with the need to refer to constraints on LF movement in Hindi is made by Dwivedi (1994). Briefly, she argues that finite complements in Hindi are not subordinate structures at all. Instead, they represent a special kind of asymmetric co-ordination. The key idea here is that Hindi *ki* "that" is not a genuine complementizer but a co-ordinator that combines CP's. What is traditionally known as the matrix clause is, in reality, the first conjunct of this co-ordinator and what is traditionally known as the embedded clause, its second conjunct:

(48)
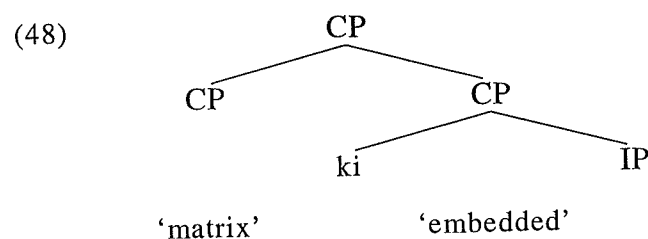
A consequence of this is that wh in-situ inside the second conjunct is forced to take scope over its own clause. Movement to matrix Spec is ruled out since the embedded Spec position is not c-commanded by the matrix spec position. The question of whether subjacency regulates wh movement at LF would therefore be moot.

Let me note here that Dwivedi's account is not incompatible with the proposal made in sections 2 and 3. As far as I can see, there are two crucial differences. One, I assume an argument position inside the matrix clause. Two, I allow the embedded clause to adjoin to any (maximal) projections higher than I^0. This is in the spirit of proposals such as Guéron (1980) and Guéron and May (1984) and May (1985). The possibility of adjunction at the level of CP carries exactly the same implications for wh movement as Dwivedi's proposal given in (48). Long-distance movement is blocked by general principles and subjacency need not be invoked. The issue of the relevance of subjacency only comes in if adjunction to IP is allowed. It seems to me that the facts discussed in section 3.2 constitute fairly strong evidence that IP-adjunction must be allowed. For example, we saw that PSI *bhii* in (36a) originates in the embedded clause and moves

out as an instance of long-distance scrambling. Its landing site must be higher than its site of origin, so that it can c-command its trace:[24]

(49)
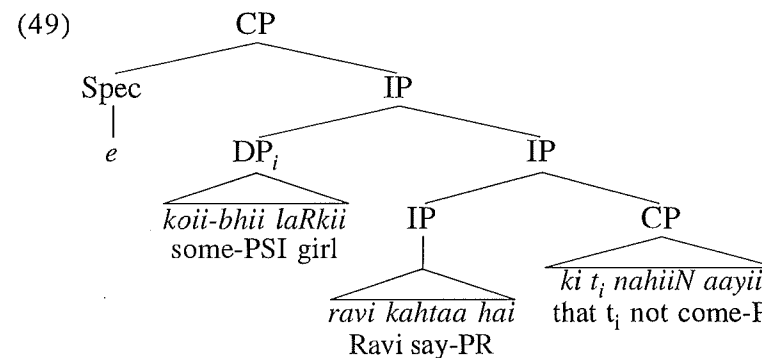
But then, wh movement out of the embedded clause to the matrix Spec should also be possible since the Spec position too would c-command the site of origin. A constraint like subjacency that takes into account the status of the adjoined position must be responsible for blocking such movement at LF.[25]

To sum up this section, I have mentioned two proposals that would not require a modification of the view espoused by Huang and Chomsky that LF wh movement is immune to subjacency. While I do not pretend to have done full justice to these proposals, I hope to have pointed out what I consider to be key problems with them. It is quite possible that the basic proposals could be preserved if alternatives are developed for tackling the problems pointed out here. My main goal, though, has been to show that the scope properties of Hindi wh in-situ in right adjoined positions can be accounted for within standard assumptions if subjacency is brought into the picture at LF.

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[24] Recall that extracted wh expressions do yield direct question interpretations (cf. 30), showing that extraction is to a position lower than Spec of the matrix CP.

[25] Recall from Chapter I that in Hindi wh in-situ inside finite relative clauses do not yield direct question interpretations. An explanation along the lines suggested by Dwivedi would not extend to such cases.

CONCLUSION

To conclude this chapter, I have provided an account for the scope properties of embedded wh in terms of the phrase structure of Hindi. Non-finite complements, being gerunds, typically appear in positions directly selected by the verb and yield wide scope readings. Finite complements may be generated in the preverbal argument position from which extraction is possible. However, they must appear right adjoined to IP or CP at S-structure due to the CRP. Neither successive cyclic nor long wh movement is possible from these positions. Successive cyclic movement is blocked because adjoined positions are barriers for government, as standardly assumed. The impossibility of long wh movement, however, forces us to recognize that subjacency is operative at LF in Hindi. In the next two chapters I look at two cases in which wh in-situ inside finite complements appear to have matrix scope. Taking the facts discussed in this chapter as a guide I argue that locality in scope assignment must be maintained and provide alternative accounts of the facts considered there.

CHAPTER III

LOCALITY IN SCOPE MARKING

INTRODUCTION

We saw in Chapter II that Hindi finite complements constitute strong islands for wh extraction at LF. In this chapter I want to turn to scope marking, a structure which seems to defy this generalization. Briefly, a scope marking structure contains a wh in the matrix clause and a wh in the embedded clause but answers to the question specify values only for the embedded wh. It is generally believed that an answer specifies values for a wh expression only if it has matrix scope. Answers to scope marking structures are therefore taken to indicate that the scope of the embedded wh is extended by the matrix wh. Under this view the LF representation of scope marking is identical, in essential respects, to that of extraction. In this chapter I point out that the facts of Hindi preclude a syntactic analysis of scope marking in terms of extraction. I also show that scope marking and corresponding extraction structures are semantically distinct. The analysis I develop maintains the syntactic distinction between the two structures at all levels of syntactic representation. The matrix wh in a scope marking structure is interpreted as a regular wh quantifier and the embedded wh is interpreted in its own clause. The two are connected by the fact that the embedded clause serves as the restriction for matrix quantification. The considerable overlap in meaning between scope marking and extraction structures is captured without losing crucial distinctions. This approach to scope marking suggests that the diagnostic of using specification of values in the answer as an indicator of matrix scope is flawed.[1]

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[1] The analysis of scope marking structures I present here is essentially that of Dayal (1994b). It, however, includes new data and discussion of subsequent analyses. I would like to thank Christiane Fellbaum and Beatrice Santorini for discussion of the German data in Dayal (1994b). I am also grateful to Josef Bayer, Peter Hook, Anna Szabolcsi and two NALS reviewers for comments on an earlier draft of that paper. Thanks also to Dana McDaniel for some very important questions and to Miriam Butt and Sigrid Beck for an extensive set of comments. I am grateful to have had so much feedback in such a short time.