The A/A-BAR DISTINCTION AND MOVEMENT THEORY

by

ANOOP KUMAR MAHAJAN

D.E.A., UNIVERSITY OF PARIS
(1986)

M.PHIL., UNIVERSITY OF DELHI
(1982)

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Signature of Author _____
Department of Linguistics and Philosophy
August 13,1990

Certified by _____
Noam Chomsky
Institute Professor

Accepted by _____
Wayne O'Neil
Head, Department of Linguistics and Philosophy

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ABSTRACT

This thesis argues for a reformulation of the A/A-bar
distinction in the theory of syntax. In the first part of this
thesis, it is shown that this reformulation is forced by both
theoretical considerations raised by VP internal subject
theories and also certain empirical considerations relating to
scrambling operations in Hindi. Evidence for the
reformulation includes locality constraints on movement, weak
crossover phenomena, reconstruction effects and binding
properties associated with movement. This evidence also leads
to a new approach to the study of scrambling phenomena. It is
suggested that scrambling operations that move NPs may belong
to two different kinds of syntactic operations - an operation
that involves substituting the scrambled element into a SPEC
of a functional projection internal to IP (with properties
similar to a rule like Passive) and an operation that adjoins
the scrambled NP to a maximal projection (with properties
similar to a rule like QR). The approach developed here yields
a framework that seems to be promising for the study of
variation found with respect to scrambling phenomena in
natural languages.

The second part of this thesis argues that a language that
does not have overt wh-movement at s-structure may not have
wh-movement to SPEC CP at LF either. It is argued that in a
language like Hindi, the wh-phrases simply undergo QR at LF.
This operation adjoins a wh-phrase to the nearest IP. We show
that this approach yields a number of consequences that are
desirable in Hindi, a language that at first glance seems to
be mixed between a language with overt wh-movement in syntax
as well as wh-in-situ. We discuss some aspects of wide scope
quantification in Hindi and some other languages and show that
the absence of wh-movement to SPEC CP at LF yields certain
effects that would be surprising under the approaches that
permit wh-movement to SPEC CP at LF.

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Organization of the thesis

This thesis examines certain aspects of movement theory as they relate to two general processes - substitution and adjunction. A detailed examination of scrambling in Hindi reveals that certain instances of clause internal scrambling should be analyzed as substitution into the specifier of a functional projection. This substitution operation, which is called argument shift, has properties similar to operations such as Passive and Raising. On the basis of this, it is suggested that a subpart of scrambling belongs to the general class of NP movement operations. However, not all instances of scrambling fall into this class. It is shown that long distance scrambling out of finite clauses and some instances of short distance scrambling must be classified as adjunction operations with properties similar to rules such as wh-movement and QR. Once we make a distinction between these two types of scrambling rules, it becomes easier to understand the general nature of scrambling in natural languages. This is the topic of chapter 1 of this dissertation. Chapter 2 argues that an instance of argument shift is responsible for argument-verb agreement in Hindi. I develop a theory of Case that distinguishes between the roles structural and lexical Case play in syntax. I also suggest that there is a correlation between specificity and structural Case assignment by AGR to an NP in its specifier. This correlation helps us understand why specific objects fail to show agreement in Hindi. This fact is further shown to be correlated with scrambling.

Chapter 3 suggests that wh-movement in Hindi involves adjunction of a wh-phrase to IP. It is argued that wh-in-situ QRs at LF. This explains a number of properties that wh-constructions in Hindi have. I explore the consequences of such an approach for languages like English and Japanese and argue that even in these languages the syntax of wh-movement at LF does not involve movement to SPEC CP but simply involves adjunction to IP. This is shown to have some desirable consequences involving wide scope questions in English. The discussion in this chapter touches on a number of theoretical questions such as the role of subjacency at LF and the validity of a derivational approach to syntax.

This thesis does not have an introductory chapter. In the beginning of each chapter, I outline the theoretical background and the issues that will be addressed in that chapter. The relevant background information about Hindi syntax is also provided in each chapter. However, for a detailed background, the reader is referred to works such as Chomsky (1981,1986) and the references cited throughout this thesis.

CHAPTER ONE

SCRAMBLING

1.0 Introduction: Free Word Order and Scrambling

In generative grammar, notions such as 'free word order' and 'scrambling' have been problematic. The problems arise mainly because within generative syntax locality of Case assignment and theta role assignment require some condition of adjacency between Case/theta role assigners and the recipients. Movement rules such as Passive, Raising and wh-movement disturb these adjacency relations. However, studies within generative syntax in the last three decades have shown that these movement rules are driven either by Case requirements (A-movement) or by other requirements (eg. selection and scope for wh-movement). Since 'scrambling' did not fit neatly within the typology of movement phenomena characterizable by the theory of generative syntax, it has remained an enigma over the years. This term has been applied to different kinds of mechanisms that alter word order in one way or the other. Scrambling has been treated as a PF rule (hence not subject to syntactic constraints) or derived by a modified X-bar theory (cf. Hale,1983). In recent years, however, it has been shown that certain kinds of scrambling phenomena have syntactic consequences that cannot be derived under the view that

scrambling is a PF rule and cannot be accommodated within the theory by a modification of X-bar theory (see among others, Saito,1985; Hoji,1987; Saito and Hoji,1983).

In this chapter, I will put forward a theory of scrambling that treats this phenomenon as a systematic syntactic operation which is subject to regular syntactic principles. In that respect, this study supports views such as Saito, 1985; Hoji,1987; Saito and Hoji,1983. However, I will depart from these studies by showing that 'scrambling' is not a unitary phenomena, i.e., it is not simply an instance of A-bar movement

The first step that I take is to abandon the term 'scrambling' since it has various undesirable connotations. I suggest that the operations that this term was supposed to characterize be broken up into three distinct operations:

(i) **Argument shift**: a rule with properties similar to rules such as Passive

(ii) **Adjunction to XP**: a rule with properties similar to rules such as Topicalization/wh-movement/Focussing

(iii) **X° shift**: a rule of head movement

These three rules, suitably characterized , would yield what used to be called 'scrambling' or 'free word order'.[1] These rules are regular syntactic operations and are therefore subject to regular syntactic constraints. In this chapter I will be concerned mainly with Argument shift and Adjunction shift. X° shift or 'head movement' has been studied in detail in Travis (1984), Baker (1985) and Yafei (1990) and it has become quite clear that it is subject to well defined syntactic constraints. As for 'argument shift', I will assume that an extension of this operation will include Passive and Raising -- two of the familiar NP movement rules. It will also include a movement operation that yields subject and object agreement in Hindi (the topic of study in chapter 2). I suggest that Germanic object shift also falls in this class. Adjunction to XP may include, under a suitable extension, an operation that derives wide scope questions in Hindi (the topic of study in chapter 3) and certain operations such as Topicalization, Heavy NP shift and other similar rules. Summing up: Dividing scrambling into pieces that fit into better understood movement operations will not only yield a conceptually simpler account of the phenomenon but will help us understand what kind of word order permutations are allowed with what kind of syntactic consequences. It will also help us

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[1]This characterization of 'free word order' excludes PF operations that may further alter word order. Whether or not word order changing PF rules exist in addition to syntactic operations mentioned above remains an open question.

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make typological sense out of the variation in word order possibilities found across different languages.

1.1 THEORETICAL ASSUMPTIONS:

I will assume following some recent suggestions by Chomsky that the typology of positions includes at least the following two types of positions:[2]

L-related positions: Specifier and complement positions of a lexical item and functional heads projected from it. Within the clausal system it includes SPEC and Complement positions of V, AGR and T.

Non L-related positions: All other positions including SPEC CP and adjunction positions.

Based on German scrambling (cf. Webelhuth,1989), Chomsky suggests a distinction between **narrowly L-related positions**

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[2]Chomsky(1989b) defines L-related as:
x is L-related to y, if y is a lexical category and x is related to a projection of y.
We will assume that 'relate' can be equated to 'included in a projection of' in the X-bar theoretic sense. Furthermore, T(ense) and AGR are assumed to be projections of V. This has the consequence that all complements and specifiers of V, AGR and T come out as L-related while specifier and complement of C are not L-related. This system also has implications for other lexical categories that we will not be concerned with in this paper.

In Mahajan(1988), I suggested a notion of 'potential Case positions' that was intended to include the SPEC positions of AGR and T. The idea of an A position being a theta position or a potential Case position comes out roughly equivalent to the new system adopted here. For some other related proposals see Sportiche(1988b), Vanden Wyngaerd(1989) and Deprez(forthcoming).

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(our L-related positions above) and **broadly L-related positions** which correspond to adjunction positions that I have included under our typology in the second category. I will show that the distinction between narrowly L-related and broadly L-related is not required. The mixed positions that this distinction is supposed to characterize do not exist. The relevant data comes from some Hindi and German facts.

The main aim of this chapter is to show that the scrambling operations that we have identified above correspond to movement to an L-related position or to an non L-related position, more specifically:

ARGUMENT SHIFT = MOVEMENT TO AN L-RELATED POSITION

ADJUNCTION TO XP = MOVEMENT TO A NON L-RELATED POSITION

Since I identify the distinction in terms of substitution into an L-position (to be understood here as a SPEC L-related position) vs adjunction, the system predicts that there are no mixed positions, i.e., it comes out as a consequence of the contradiction involved between substitution and adjunction within the type of X-bar system that I am assuming.[3]

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[3]Other approaches may be possible but I will ignore them for the purpose of the discussion here. Furthermore, the evidence that I present here may be taken to justify the distinction between syntactically created adjunction and substitution. This is not meant to exclude the special nature of adjunction in terms of segment approaches to adjoined structures such as that of May(1985) and Chomsky(1986).

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The argument will be presented as follows:

(i) I will show that both argument shift and adjunction to XP exist independently in Hindi.

(ii) I will then present evidence from Hindi that indicates that a scrambled NP does not occupy a position with mixed properties, i.e., properties of an L-related as well as a non L-related position (see later discussion for a characterization of these properties).

(iii) I will show that Webelhuth's interpretation of the German evidence to support his view is not correct. He gives two examples both of which have the wrong properties. I then examine the German evidence that would actually bear upon the issue and show that the existence of the mixed position is not motivated in German either. This evidence clearly shows that a scrambled NP can behave either as an L-position NP or as a non L-position (=L-bar position) NP but cannot show mixed properties.

(iv) This will then prove that there is no motivation from these considerations for a third 'mixed' type of position in the theory. As far as scrambling facts are concerned, they do not motivate a distinction between broadly L-related positions and non L-related positions.

(v) I will then suggest an outline of a general theory of scrambling that incorporates the proposals advanced in this chapter.

As noted earlier, I will assume the L-related vs non L-related distinction suggested by Chomsky (where by L-related I mean 'narrowly L-related'). This gives us two position types: L-position and non L-positions. We will assume that movement to an L-position creates an L-chain.

L-chain: A chain with all its links in an L-position.

I also assume that every L-chain has a Case (I exclude PRO from these considerations). The tail of an L-chain (with multiple links) is a theta position to which (structural) Case is not assigned. Structural Case is assigned to the head of an L-chain. I will, however, permit L-chains in which an NP bears an inherent Case as well as a structural Case. I will assume that inherent Case is theta-related and is not 'visible' to the Case filter, which requires every chain to have a structural Case (see later discussion and the discussion in Chapter 2 where these issues are discussed explicitly).

I will also assume that L-chains are subject to some locality restrictions. For concreteness, I will assume that the formation of an L-chain requires formation of an extended chain as suggested in Chomsky(1986).

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Following Pollock(1989), Chomsky(1989), Pesetsky(1989) and
Mahajan(1988,1989), I will assume a highly articulated IP
structure, a simplified version of which is given below (note
that the sentences with additional (overt or null) auxiliaries
may project additional SPEC positions that make additional
SPEC positions available internal to the IP).

(1)

```
            AGRP
      SPEC
              AGRs
   SPEC
              I
  SPEC
              AUX
 SPEC
              AGRo
     VP
SUB
      IO DO    V
```
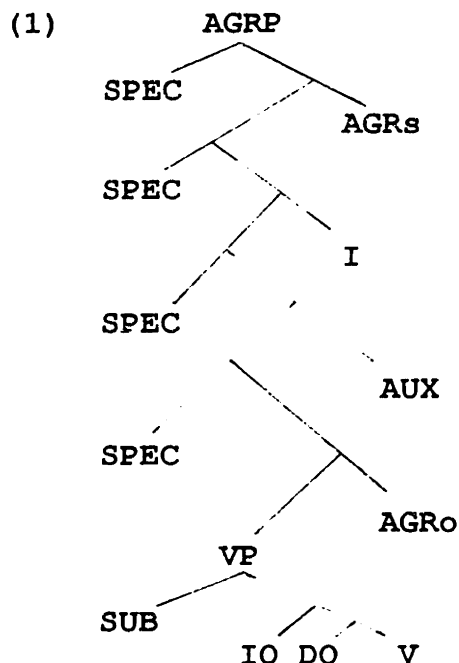
Argument shift, under our approach, will involve substitution
of an argument into one of the SPEC positions in (1).
Adjunction to XP will involve adjunction to TP, AGRPs, AGRPo,
AUXP and possibly to VP. We will assume that all arguments of
V are generated VP internally and that at least part of the
motivation for movement of arguments to VP external positions
is for Case reasons.

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1.2. ARGUMENT SHIFT:

In this section, I argue that a number of cases analyzed in earlier theories of sentence internal scrambling fall under a rule that has characteristics of an NP movement rule. The discussion in this section will raise a number of significant issues especially concerning the typology of positions within a clause, i.e., the A/A-bar distinction. In the next subsection, I will argue that this distinction needs to be revised along the lines suggested recently by Chomsky.

1.2.1. On the A/A-bar distinction:

Recent debates about clause structure and VP internal subjects raise significant problems regarding the traditional A vs. A-bar distinction. Within the LGB framework (cf. Chomsky,1981), an A position was a position to which a theta role could be assigned, i.e., VP internal argument positions and the SPEC of IP position (=subject) position.

Current theories that support the view that the subject of a clause is generated VP internally (cf. Sportiche,1988; Larson,1988; Fukui and Speas,1986; Kitagawa,1986; Diesing,1989 among others) assume that all the theta roles of V are assigned inside the VP. This implies that SPEC of IP is not even a "potential" theta position.[4] This raises an important question: What is the status of the SPEC of IP position? Is it

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[4]See, however, Pesetsky(1989) where it is suggested that a modal generated in I can assign a theta role to its subject.

an A position or an A-bar position? The answer to this question is not straightforward. Note that if all arguments get their theta roles VP internally, then the combined assumptions of the classical LGB view and the VP internal subjects theory force us to classify the SPEC of IP position as an A bar position - since no theta role is ever assigned to an argument in that position. VP internal subjects will have to be Case marked in their base generated (VP internal) position, presumably by I (this follows from the LGB characterization of an A-position). This would force us to conclude that VP internal subjects (as well as other arguments) can move only to A-bar positions.[5] Thus, under this view, in a language like English which has pre I subjects in normal declarative sentences, this pre I position would be an A bar position.

A further complication arises at this point. If movement from within VP was forced because an NP could not get Case, this movement will have to be to an A-bar position that receives Case (recall that under this view all VP external positions are non theta and therefore A-bar positions). This conflicts with most existing views about movement theory and assignment

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[5]If I can Case mark the subject in a VP internal position, then the subject-verb agreement will have to be viewed from a somewhat different perspective than is commonly assumed. Either exceptional Case marking by I should suffice to establish agreement or the subject should move to a VP external caseless position to establish this relationship. If agreement is to be equated with structural Case as Chomsky(1989) suggests, then none of these possibilities can be allowed. For some other perspectives on this problem, see Pesetsky(1989) and Kayne(1989a,b).

of Case to chains. The prevalent view is that Case is assigned
to the tail of a chain formed by movement from an A to an A-
bar position.

The situation is made more complicated by recent suggestions
made in Chomsky(1989) that all structural Case is tied to the
AGR system. This implies that verbs do not assign structural
Case (cf. Chomsky,1989; see also Mahajan,1989). This view
would require objects to move to get Case. This raises the
same problem as noted above, i.e., if the object moves to a VP
external position to get Case, then this movement would be to
an A-bar (non (potential) theta) position resulting in a chain
whose head is Case marked -- leading to the problem noted
earlier.[6]

It may be noted that the traditional LGB A/A-bar distinction
has many facets. On one hand it characterizes positions
themselves as either potential theta positions or non theta
positions. On the other hand it was largely justified by what
kind of elements could move into these positions (for instance
only quantificational or topicalized NPs could occupy A-bar
positions), the nature and properties of traces left behind by
the movement and whether the movement was subject to binding

---

[6]Note that recent proposals regarding highly articulated IP
structures (cf. Chomsky,1989; Pollock,1989) do not directly address
the issue as to what the status of positions like SPEC of AGR (and
SPEC T/I) would be in their theories. These positions are obviously
not theta positions. On the other hand, these positions cannot
obviously be A-bar positions otherwise we get into the problem
noted above.

conditions or not. Thus, wh-phrases and other scope taking elements typically moved to A-bar positions. The movement was subject to ECP and the traces of arguments moving into an A-bar position showed properties of variables. The movement induced crossover effects and could license parasitic gaps. The traces left by movement to an A position were subject to binding principle A. Furthermore, movement chains formed by movement to these positions have different properties. Movement to an A-bar position results in a chain whose head is not in a Case position while the tail is. Movement to an A position, on the other hand, is forced for Case reasons and consequently results in chains whose heads are Case marked but whose tails are not.

As noted above the relevance of a notion such as 'potential theta' position is no longer viable.[7] I will therefore concentrate on the other set of properties that this distinction was intended to capture - movement and binding properties. I will argue that empirical considerations from Hindi based on these properties justify a revision of the A/A-bar distinction along the lines suggested earlier.

Before going on to elaborate the special problems that the Hindi data pose, I would like to demonstrate the issues involved by a simple argument based on raising in English.

_____

[7]Chomsky(1989b) notes that a notion such as 'potential' theta role also has a conceptual problem since it involves setting up equivalence relations between phrase markers.

Consider (1):

(1) [$_{IP}$ John$_i$ [$_{VP}$ seems [$_{PP}$ to himself$_i$/him$_j$] [$_{IP}$ t$_i$' to

have [$_{VP}$ t$_i$ shot Bill]]]]

Since _himself_ must be bound by _John_ while _him_ must be free

from it, _John_ must occupy a position that is in the domain of

binding conditions A and B. That is, _John_ must be in an A-

position. This argument in itself shows that there must be VP

external A-positions. We use arguments of this sort

encompassing weak crossover effects, binding and locality

constraints on movement to show that Hindi has a multiplicity

of positions that have the character of the position occupied

by _John_ in (1).

1.2.3. Some Remarks on Hindi Word Order:

Hindi is an SOV language. The unmarked word order in a

ditransitive sentence is SUB-IO-DO-V (see among others

Gambhir,1981 and Subbarao,1984 for some word order properties

of Hindi). Auxiliaries normally follow the verb. The language

is strictly postpositional. The word order in Hindi is however

somewhat free. Thus a simple sentence like (2) can have

various word order possibilities as shown below:

(2) raam-ne   kelaa   khaayaa   (SOV)

    Ram-erg.(SUB) banana(DO) ate

    Ram ate a banana.

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```
(3) raam-ne khaayaa kelaa      (SVO)

(4) kelaa raam-ne khaayaa      (OSV)

(5) kelaa khaayaa raam-ne      (OVS)

(6) khaayaa raam-ne kelaa      (VSO)

(7) khaayaa kelaa raam-ne      (VOS)
```

All these sentences are well formed.[8] The argument that I will develop here will show that a sentence like (4) is derived from (1) by Argument Shift operation.

1.2.3. Wh-phrases in simple sentences in Hindi:

Hindi does not have any s-structure wh-movement in simple clauses. This is shown by (8)-(9) where the wh-phrase is in-situ (see also Chapter 3).

```
(8)   raam-ne  kyaa ciiz      khaaii ?
      Ram(SUB) what thing(DO) ate
      What did Ram eat?
```

```
(9)   raam-ne  kis-ko ek kitaab   dii ?
      Ram(SUB) who(IO) a book(DO) gave
      Who did Ram give a book to?
```

Question word fronting is possible in (8)-(9) as shown by (10)-(11).

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[8]Special emphasis and context specification is required in some of the above variations (see Gambhir,1981 for details).

(10) kyaa ciiz   raam-ne khaaii ?

     what thing(DO) Ram(SUB) ate

(11) kis-ko raam-ne ek kitaab   dii?

     who(IO) Ram(SUB) a book(DO) gave

(8) and (9) can, in addition, have word order variants of the
kind noted for (2). Thus we can have:

(12)a. raam-ne khaaii kyaa ciiz ?   (S V DO)

    b. kyaa ciiz khaaii raam-ne ?   (DO V S)

    c. khaaii kyaa ciiz raam-ne ?   (V DO S)

    d. khaaii raam-ne kyaa ciiz ?   (V S DO)

    (=8/10)

(13)a. raam-ne ek kitaab kis-ko dii ?   (S DO IO V)

    b. kis-ko ek kitaab raam-ne dii ?   (IO DO S V)

    c. kis-ko raam-ne dii ek kitaab ?   (IO S V DO)

    d. kis-ko ek kitaab dii raam-ne ?   (IO DO V S)

    (=9/11)

These examples show that the word order possibilities allowed
with non questions are possible with questions too. However,
as we will see in the next section, sentences with fronted wh-
phrases (as in (10)-(11) provide evidence that the moved NP is

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in an L-related position.[9]

1.2.4. Some remarks on Weak Crossover:

Chomsky(1976) suggests the condition in (19) to account for the ungrammaticality of sentences in (20)-(21):

(19) The Leftness Condition: A variable cannot be an antecedent for a pronoun to its left.

(20) *Who$_i$ did his$_i$ mother see t$_i$.

(21) *His$_i$ mother saw someone$_i$.

In (20) neither <u>who</u> nor t$_i$ can bind <u>his</u>$_i$. Similarly, in (21) neither <u>someone</u> not LF trace of <u>someone</u> (which undergoes QR) can bind <u>his</u>$_i$. Several treatments of this phenomena, which has been called weak crossover (WCO), have appeared in the literature (see among others Postal,1971; Wasow,1972; Koopman and Sportiche,1982; Higginbotham,1983; Reinhart,1983 and Safir,1984). All of these treatments suggest different mechanisms by which sentences like (20)-(21) are ruled out. In this work, I will not go into the differences between these treatments of WCO. Developing on some ideas in Reinhart(1983), I suggest that the following filter accounts for WCO effects in sentences like (15)-(16):

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[9]We will be concerned mainly with pre verbal scrambling cases in Hindi. Scrambling cases in which arguments appear in post verbal positions bring up some complications regarding whether these cases involve verb movement or not. We will not pursue this issue here.

(17) **Weak Cross Over Filter**: To be construed as a bound variable, a pronoun must be c-commanded by a binder and its variable (if there is one) at s-structure.[10]

(17) implies that a pronoun that is not c-commanded by a binder at s-structure cannot be construed as a bound variable.

---

[10]The conclusion that WCO filter must apply at s-structure and not at LF can be supported by the fact that LF movement never overrides WCO effects. One particularly interesting case to be considered is that of LF expletive replacement (cf. Chomsky,1986; 1989a). If expletive replacement at LF involves NP movement and WCO filter applies at LF then one would expect no WCO effects in sentences such as (i):
(i)* There seems to his$_i$ mother to be a man$_i$ in the garden.
If 'a man' in (i) moves at LF to replace 'there' then (i) provides the same configuration at LF as (20) and (21) do at s-structure. However (i) shows WCO unlike (20) and (21). Therefore, if LF expletive replacement is an NP movement rule then the level at which WCO filter must apply should be s-structure. (One could get around this problem by assuming that (i) does not involve expletive replacement at LF but instead 'a man' adjoins to the expletive, i.e., the expletive is treated like an LF affix as suggested by Chomsky(1989a). If this adjunction process is an instance of A-bar movement then WCO effects would be expected.)
If our conclusion about the level at which WCO applies is right then it suggests that variables, if they exist at s-structure, must be bound at that level of representation. This may also account for the fact that parasitic gaps cannot be licensed by LF movement (I thank Soo Won Kim for drawing my attention to this). Since parasitic gaps exist at s-structure, they must be bound at that level of representation. This is why QR and wh-movement at LF does not license parasitic gaps. (Howard Lasnik points out that this conclusion is similar to that argued for by theories such as Chomsky(1982)).
While I take s-structure to be the level at which pronominal binding must apply, there is in fact some evidence showing that pronominal binding could take place prior to s-structure. The following example indicates that the level at which the WCO filter can be satisfied can in fact be prior to s-structure:
(ii) His$_i$ brother irritates every girl$_i$.
Under the analysis of Psych verbs developed in Belletti and Rizzi(1988), the pronoun in (ii) can be bound at a level at which the quantifier c-commands it- i.e., before s-structure. The lack of WCO effect in (ii) is therefore accounted for. We will not pursue this here. See Mahajan(1990) for implications of this type of analysis.

This straightforwardly accounts for (16) where the quantifier
does not c-command the pronoun at s-structure. (17) also
accounts for (15) where the wh-phrase does c-command the
pronoun but its variable does not. (15) and (16) contrast with
(18) and (19) below where the pronoun can be a bound variable:

(18) Who$_i$ t_i saw his$_i$ mother ?

(19) Someone$_i$ saw his$_i$ mother.

In (18), both the wh-phrase and its variable c-command the
pronoun, while in (19) the quantifier c-commands the pronoun.
(20) and (21) below show that the traces left by NP movement
do not affect the WCO filter and that NP movement can in fact
provide new binders for a pronoun:

(20) [Who$_i$ ti seems to his$_i$ mother [$t_{i'}$ to have come]]

(21) [Someone$_i$ seems to his$_i$ mother [t_i to have come]]

(20) does not show WCO effects. In this example, the variable
ti and the wh-phrase c-command the pronoun while the NP trace
ti' does not. In (21) also, the NP trace of the quantifier
does not c-command the pronoun. This indicates that pronouns
can be bound from the landing sites of NP movement. I will use
these effects as a diagnostic for determining whether the
landing site of a moved wh phrase/quantifier is a target for
NP movement or not. In particular, I will consider a position

an L-position if it can be a target for NP movement, a
position from which a pronoun can be bound.

1.2.5. NP fronting and Weak Crossover in Hindi:

It has been noted by Gurtu(1986) that NP fronting in Hindi has
certain interesting properties with respect to weak
crossover.[11]   (23) and (24) below illustrate that sentences
with wh-in-situ/quantifiers show WCO effects:

(22) ?uskii$_i$ bahin   raam-ko$_i$ pyaar kartii   thii

       his sister(SUB)   Ram(DO)   love do-imp-f be-pst-f

       His$_i$ sister loved Ram$_i$.

(23) *uskii$_i$ bahin   kis-ko$_i$ pyaar kartii   thii ?

       his   sister(SUB) who(DO)   love do-imp-f be-pst-f

       *Who$_i$ does her$_i$ sister loved ?

(24) *unkii$_i$ bahin   sab-ko$_i$ pyaar kartii thii

       their sister(SUB) everyone(DO) love do-imp-f be-pst-f

       Their$_i$ sister loved everyone$_i$.

What is however surprising is that this effect disappears if
the wh-phrase or the quantifier is fronted as in   (25) and
(26) below:

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[11]We will reconstruct some of Gurtu's argument here using
examples similar to those she gives and adding our own examples.
Gurtu's discussion does not directly address the issues that we may
be interested in here. See also Pandit(1985) for some discussion on
WCO in Hindi.

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(25) [kis-ko$_i$ uskii$_i$ bahin [t$_{sub}$ t$_{DO}$ pyaar kartii] thii] ?

who(DO) his sister(SUB)   love   do-imp-f be-pst-f

Who$_i$ did her$_i$ sister love.

(26) [sab-ko$_i$ unkii$_i$ bahin [t$_{sub}$ t$_{DO}$ pyaar kartii] thii]

everyone(DO) their sister(SUB)   loves do-imp-f be-pst-f

Their$_i$ sister loved everyone$_i$.

If kis-ko and sab-ko were in an non L-position, then following the discussion in the previous section, (25)-(26) are expected to be ungrammatical.[12] Their grammaticality indicates that kis-ko and sab-ko must be in an L-position, that is, they occupy the same 'type' of position as who and someone do in (20)-(21). We suggest that kis-ko and sab-ko in (25)-(26) occupy SPEC T position of (1). This position is an L-position. Therefore we do not get WCO effects.

The sentences that follow illustrate effects similar to the ones noted above with ditransitive clauses. (27)-(28) show that DO wh-phrase/quantifier when it follows an IO containing a pronoun induces WCO effects. (29)-(30) show that scrambling a direct object over an indirect object containing a pronoun to a sentence initial position suppresses WCO effects (recall

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[12]Gurtu suggests that the trace of the scrambled wh-phrase and the quantifier in (30)-(31) must be an A-trace of an element being bound from an A-bar position. Under her account, scrambling daughter adjoins an element to S, the adjunction site being an A bar position. Gurtu's intuition seems to be on the right track though the issues that arise need to be reformulated within the context of current debates regarding the typology of positions.

that the unmarked word order in Hindi is S-IO-DO-V). [13]

(27) *[raajaa-ne uske$_i$ pitaa-ko kOn sii daasii$_i$ [t$_{sub}$ t$_{IO}$ t$_{DO}$

    king(SUB)   her father(IO) which maid(DO)

    lOTaa dii]]

    return give-pst-f

    *Which maid$_i$ did the king return to her$_i$ father?

(28) *[raajaa-ne unke$_i$ pitaa-ko sab daasiyaaN$_i$ [t$_{sub}$ t$_{IO}$ t$_{DO}$

    king(SUB) their father(IO) all maids(DO)

    lOTaa diiN]]

    return give-pst-f-pl

    *The king returned all the maids$_i$ to their$_i$ father.

(29) [kOn sii daasii$_i$ raajaa-ne uske$_i$ pitaa-ko [t$_{sub}$ t$_{IO}$ t$_{DO}$

which maid(DO)   king(SUB) her father(IO)

    lOTaa dii]]

    return give-pst-f

    Which maid$_i$ did the king return to her$_i$ father?

---

[13]We are assuming here (especially for sentences such as (27)-(30)) that all arguments move to VP external positions. It may be noted here that in (27)-(30) a pre VP adverbial such as jaanbuujh kar 'deliberately' can intervene between the verb and the argument to the left of it indicating that this argument and therefore all other arguments preceding it may be VP external. We follow here the assumption made in Mahajan(1989) that even inherent Case needs to be realized in a position governed by a functional head. However, nothing crucial depends on this assumption here (see later discussion). What we need to allow is that in sentences such as (25)-(26) (and (31)-(32) (to follow)), the -ne/-ko phrases should be allowed to move to a position governed by a functional head, i.e., an NP be allowed to have an inherent Case but still be governed by a functional head. The discussion of inherent Case in Belletti(1988) and Lasnik(1989) along with the discussion of expletive replacement in Chomsky(1989) would probably require such government for independent reasons.

(30) [sab daasiyaaN$_i$ raajaa-ne unke$_i$ pitaa-ko [t$_{sub}$ t$_{IO}$ t$_{DO}$

all maids(DO) king(SUB) their father(IO)

LOTAA diiN]]

return give-pst-f-pl

The king returned all the maids$_i$ to their$_i$ father.

Interestingly enough, even if the direct object is not moved
all the way to the front of the sentence, i.e., it is
scrambled to a position between the subject and the indirect
object, WCO effects do not show up.

(31) [raajaa-ne Kon sii daasii$_i$ uske$_i$ pitaa-ko [t$_{sub}$ t$_{IO}$ t$_{DO}$

king (SUB) which maid(DO) her father(IO)

LOTAA dii]]

return give-pst-f

Which maid$_i$ did the king return to her$_i$ father?

(32) [raajaa-ne sab daasiyaaN$_i$ unke$_i$ pitaa-ko [t$_{sub}$ t$_{IO}$ t$_{DO}$

king (SUB) all maids(DO) their father(IO)

LOTAA diiN]]

return give-pst-f-pl

The king returned all the maids$_i$ to their$_i$ father.

This implies that the type of position the scrambled NPs
occupy in (29)-(32) is the same as in (25)-(26). We suggest

that the subject in (31)-(32) occupies SPEC T position, the DO occupies SPEC AGR_2 (if there is an empty AUX, the DO occupies SPEC of AGR_1 with its trace in SPEC of AGR_2/AUX). The IO must then be occupying the SPEC position of an empty functional head lower to AGR_2. All these positions are L-related in Chomsky's system and the evidence given above shows that they have the properties of A-positions.

The order IO-DO-SUB-V is also possible in Hindi. This is illustrated in the examples below.[14]

(33) mohan-ko ek kitaab   siitaa-ne   dii

   Mohan(IO) a   book(DO) Sita(SUB) gave

   Sita gave a book to Mohan.

(34) ek kitaab mohan-ko siitaa-ne dii

   (=33)

Interestingly enough, if the unmarked order of indirect object preceding the direct object is maintained as in (33) above, the sentences with a wh phrase or a quantifier show WCO as in (35) and (36) below:

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[14]There is another derivation for (33) and other similar sentences in which the subject has been moved to the right, presumably to some position right of VP. The verb in such a derivation may have moved to an AGR or I position higher to the rightward scrambled NP. There is some reason to believe that this is not the case.

(35) *[uske$_i$ pitaa-ko Kon sii daasii$_i$ raajaa-ne [t$_{sub}$ t$_{IO}$ t$_{DO}$

her father(IO)   which maid(DO)   king(SUB)

LOTAA   dii]]

return give-pst-f

Which maid$_i$ did the king return to her$_i$ father ?

(36) *[unke$_i$ pitaa-ko sab daasiyaaN$_i$ raajaa-ne [t$_{sub}$ t$_{IO}$ t$_{DO}$

their father(IO) all maids(DO) king(SUB)   returned

loTaa   dii]]

return give-pst-f

The king returned all the maids$_i$ to their$_i$ father.

On the other hand, if the direct object has been scrambled to
a position preceding the indirect object then the WCO effects
disappear:

(37) kOn sii daasii$_i$ uske$_i$ pitaa-ko raajaa-ne loTaa dii ?

  which maid(DO) her father(IO) king(SUB) return give-pst-f

   Which maid$_i$ did the king return to her$_i$ father ?

(38) sab daasiyaaN$_i$ unke$_i$ pitaa-ko   raajaa-ne loTaa dii

  all maids(DO) their father(IO) king(SUB) return give-pst-f

   The king returned all the maids$_i$ to their$_i$ father.

The ungrammaticality of (35) and (36) indicates that the LF

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traces of the wh phrase/quantifier in these sentences are variables (i.e., are in L-positions). These effects disappear in (37)-(38) when the wh-phrase and the quantifier are sentence initial indicating that the sentence initial positions (in these cases) are L-positions. Once again if the NPs in (33) to (38) occupy various SPEC positions of a representation like (1), then the evidence presented so far indicates that these positions are A-positions.

To recapitulate, we have shown that NP fronting of a wh-phrase/quantifier to the left of a pronoun suppresses WCO effects showing that the target sites for movement are L-positions. We suggest that these target positions are SPEC positions of functional heads such as AGR, AUX and certain empty heads.

1.2.6. Scrambling and Reflexive binding:

Some very strong evidence for the proposal that leftward NP fronting is to an L-position comes from reflexive binding facts in Hindi. Note that if objects can be preposed to a L-position then we expect them to be able to serve as antecedents to a reflexive in subject position. That this possibility is actually realized is shown by the contrast below: [15]

(39) */???[apne$_i$ baccoN-ne   mohan-ko$_i$ ghar se   [t$_{sub}$ t$_{DO}$

　　　 self's children(SUB) Mohan(DO) house from

　　　 nikaal   diyaa]]

　　　 throw   give-perf

　　　 *Self's$_i$ children threw Mohan$_i$ out of the house.[16]

---

[15]One may suggest that in (40) the subject phrase contains a pro that serves as an antecedent for the reflexive. This pro in turn is bound by the fronted object. The underlying structure of (40) being:

(i) mohan$_i$ ko [pro$_i$ apne$_i$ baccoN ne] t ghar se nikaal diyaa
　　 Mohan (DO)   self's children (SUB) home from threw out

(i) corresponds to (ii) where an actual pronoun can occur instead of pro:

(ii) mohan ko uske apne baccoN ne ghar se nikaal diyaa
　　 Mohan (DO) his self's children (SUB) home from threw out

While this line of reasoning is plausible, it does not explain the illformedness of (iii):

(iii) *apne baccoN-ne   mohan-ko   ghar se nikaal diyaa
　　　 self's children (SUB) Mohan (DO) home from threw out

[16]We ignore the question whether <u>ghar se</u> 'from the house' is generated VP internally or not.

(40)   ?[mohan-ko$_i$ apne$_i$ baccoN-ne   ghar se [t$_{sub}$ t$_{DO}$

Mohan(DO) self's children(SUB) house from

nikaal diyaa]]

throw give-perf   (=39)

Reflexive binding in (40) can only be possible if the fronted object is in an L-position. In this regard, reflexive binding seems to be similar to pronominal binding discussed earlier.[17]

A direct object left scrambled over an indirect object containing a reflexive can also serve as an antecedent for that reflexive. This is demonstrated by (41) and (42) below:

(41) raam-ne$_i$ apne$_{i/*j}$ baccoN-ko Ser$_j$ dikhaayaa

Ram(SUB) self's children(IO) tiger-m(DO) show-perf-m

Ram$_i$ showed a tiger$_j$ to self's$_i$/$_{*j}$ children.

(42) raam-ne$_i$ Ser$_j$ apne$_{i/j}$ baccoN-ko   dikhaayaa

Ram(SUB) tiger-m(DO) self's children(IO) show-perf-m

Ram$_i$ showed a tiger$_j$ to self's$_{i/j}$ children.

In (42), along with the subject, the fronted DO can serve as an antecedent for the reflexive in IO. Since the DO agrees with the verb in (41)-(42), we suggest that (43) and (44) are

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[17](40) is slightly odd because a pronoun is possible and therefore preferred in place of the reflexive. We do not have a clear answer to why that should be the case.

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the representations for (41) and (42) respectively:

(43) [[$_{SPEC TP}$ raam-ne$_i$] [[$_{SPEC E}$ apne$_{i/*j}$ baccoN-ko] [

[$_{SPEC AGR1}$ Ser$_j$] [[$_{SPEC AGR2}$ t$_{ser}$] [t$_{sub}$ t$_{IO}$ t$_{DO}$ dikhaayaa]]]]

(44) [[$_{SPEC TP}$ raam-ne$_i$] [[$_{SPEC AGR1}$ Ser$_j$] [[$_{SPEC AGR2}$ t$_{ser}$] [[$_{SPEC E}$ apne$_{i/*j}$ baccoN-ko] [t$_{sub}$ t$_{IO}$ t$_{DO}$ dikhaayaa]]]]

1.2.7. _Reflexive binding and reconstruction:_

In this subsection we present some facts that under a certain view of reconstruction provide further evidence for our proposal that leftward scrambling is to a L-position. The evidence presented in this section also provides some evidence that contrary to Belletti and Rizzi's(1988) proposal, Hindi seems to show that there is no reconstruction under L-movement. Consider the following paradigm:

(45) raam-ne$_i$ mohan-ko$_j$ apnii$_{i/j}$ kitaab lOTaaii

Ram(SUB) Mohan(IO) self's book-f(DO) return-perf-f

Ram$_i$ returned self's$_{i/j}$ book to Mohan$_j$.

(46) raam-ne$_i$ apnii$_{i/*j}$ kitaab mohan-ko$_j$ lOTaaii

Ram(SUB) self's book-f(DO) Mohan(IO) return-perf-f

Ram$_i$ returned self's$_{i/*j}$ book to Mohan$_j$.

(47) apnii$_{i/*j}$ kitaab   raam-ne$_i$ mohan-ko$_j$ lOTaaii

self's   book-f(DO)   Ram(SUB)   Mohan(IO)   return-perf-f

Ram$_i$ returned self's$_{i/*j}$ book to Mohan$_j$.

(45) shows that the reflexive can be bound by the subject and the IO. However, if the DO is fronted over the IO, the reflexive can no longer be bound by IO as shown in (46). In (47), the reflexive now moved to a sentence initial position, can refer only to the subject. The interpretation possibility in (47) indicates that the phrase containing the reflexive can be reconstructed. However, if reconstruction was possible to the d-structure position of DO, then the interpretation possibilities of (45) should be available for (47). Since the reflexive in (47) can refer only to the subject, reconstruction must be restricted to some position higher than the IO. This would be possible under the assumption that in (48), the representation of (47), reconstruction was possible only to the site of t_1 (a variable) and not to the site of t_2 (an NP trace):[18]

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[10]It appears that leftward adjunction to an intermediate functional projection lower than IP is not allowed for arguments of the same clause in Hindi (for reasons that are not clear). This is indicated by the missing interpretation of (46)-(47) under our account. Similar conclusion is suggested by the ungrammaticality of (i) and the interpretation of (ii) below:

(i) */??? raam-ne ek duusre ki kitaabeN baccoN-ko de dii
          Ram(SUB) each other's books(DO) children(IO) gave
          Ram gave the children each other's books.
(ii) unhoN-ne$_i$ ek duusre$_{i/*j}$ ki kitaabeN baccoN-ko$_j$ de dii
     they(SUB) each other's   books(DO) children(IO) gave
     They gave the children each other's books.

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(48) apnii kitaab [raam-ne t_1 mohan-ko t_2 lOTaaii]

Further support for the assumption that reconstruction must be limited to the sites of variables and not argument traces comes from Binding Condition C effects. (49) below shows condition C effects:

(49) *mE-ne   use$_i$ raam$_i$ ki kitaab   dii

I (SUB) him(IO)   Ram   gen. book-f give-perf-f

lit. I gave to him Ram's book.

If we scramble the direct object to pre indirect object position, condition C effects disappear:

(50) mE-ne   raam$_i$ ki kitaab$_j$ use$_i$ t_j dii

I (SUB)   Ram   gen. book-f   him(IO)   give-perf-f

lit. I gave Ram's book to him.

If reconstruction must take place at the site of t_j then (50) would be expected to be ungrammatical, which it is not. This indicates that we must limit reconstruction to the site of the variable. t_j is an NP trace and not a variable therefore if reconstruction was not possible to the site of t_j we obtain the desired result. In (51) the fronted DO must be interpreted

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(i) improves a little if the direct object is heavily stressed.

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at the site of t'_k. [19]

(51) [apnii$_i$ raam$_j$ vaalii kitaab]$_k$ mE-ne$_i$ t'_k use$_j$ t_k

     self's Ram's   book (DO) I (SUB)   him(IO)

     dii

     give-perf-f

     lit. My Ram's book, I gave to him.

Since the reflexive in the fronted DO is bound by the subject, reconstruction must be possible. However, the coreference possibility of _Ram_ and _use_ indicates that t_k is not a reconstruction site, since otherwise that interpretation should be ruled out by Condition C. This suggests once again that the reconstruction site must be that of t'_k, a variable.

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[19]We are suggesting that there is no reconstruction for L-movement cases of reflexive binding - both in the cases of reflexive binding (also reciprocal binding, not illustrated here) as well as condition C effects in Hindi. It is possible that reconstruction with respect to L-movement is not a unified phenomena. If our suggestion regarding the impossibility of reconstruction for L-movement is correct then there must be some other explanation for Belletti and Rizzi,s(1988) facts concerning the psych verb facts. Grimshaw's(1988a,b) account for binding in the psych verb constructions would then be compatible with our treatment since it does not depend on the reconstruction approach. For a general discussion and issues involved in the theory of reconstruction, see Barss(1986) and references cited therein.

1.3. Adjunction to XP:

In 1.3.1, I discuss some cases of long distance NP fronting out of a finite clause in Hindi that show that at least these instances of NP fronting must be cases of movement to a non L-related position, i.e., adjunction shift. In 2.3.2, I will briefly discuss some cases of short distance NP fronting that must be treated as adjunction shift.

1.3.1. Weak Crossover and Long distance scrambling out of a finite clause:

Apart from the clause internal NP fronting that we have been discussing so far, Hindi also has long distance NP fronting as illustrated by (52) and (53) below (we do not show all the traces in the representations unless required to make a specific point):

(52) mohan-ko raam-ne socaa [$_{CP}$ ki siitaa-ne t dekhaa thaa]

   Mohan(EDO) Ram(SUB) thought that Sita(ESUB) seen be-pst

   (lit.) Mohan, Ram thought that Sita had seen.

(53) raam-ne mohan-ko socaa [$_{CP}$ ki siitaa-ne t dekhaa thaa]

   Ram(SUB) Mohan(EDO) thought that Sita(ESUB) seen be-pst

   (=52)

In the subsections that follow, we will examine the properties of this kind of movement in relation to weak crossover and binding phenomena. We will examine this kind of movement from

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within finite and nonfinite argument clauses. It will be seen that long distance NP fronting from within a finite clause can only be to a non L-position.

1.3.1.1. Gurtu(1985) noted that the movement of a wh-phrase is obligatory from within a finite clause that is a complement of a verb that does not subcategorize for a question complement (see also Mahajan,1987; Bains,1987; see also Chapter 3). Thus we have:

(54) *raam-ne socaa [$_{CP}$ ki   siitaa-ne kis-ko dekhaa thaa]

Ram   thought   that Sita   who   seen   be-past

Who did Ram think that Sita had seen ?

(55) kis-ko raam-ne socaa [$_{CP}$ ki siitaa-ne t dekhaa thaa]

who   Ram   thought   that Sita   seen be-past

(=54)

Furthermore this movement, which Gurtu argued to be movement to C, is crucially different from other leftward movements of the wh-phrase in that it induces crossover violations.

(56) *kis-ko$_i$ uskii$_i$ bahin-ne socaa [$_{CP}$ ki raam-ne t dekhaa

who(EDO) his sister(SUB) thought that Ram(ESUB) seen

thaa]

be-past

*Who$_i$ did his$_i$ sister think that Ram had seen?

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It is however not entirely clear that the wh phrase in (55)-
(56) is actually in C or SPEC of CP. This is because the wh-
phrase can actually appear between the matrix subject and the
matrix verb as in (57). It can also appear scrambled with
respect to the matrix clause elements (cf. Bains,1987).[20]

(57) raam-ne kOn saa aadmii siitaa se kahaa[CP (ki)   t

Ram(SUB) which man(EDO) Sita to   told   (that)

aayaa   thaa]

come-perf-m be-pst-m

lit. Which man did Ram tell Sita had come.

Even in this configuration, crossover violations result:

(58) *raam-ne kOn saa aadmii$_i$ uskii$_i$ bahin se kahaa[CP (ki) t

Ram(SUB) which man(EDO) his sister   to told   (that)

aayaa   thaa]

come-perf-m be-pst-m

lit. Which man did Ram tell his sister had come ?

_____

[20]That these sentences do involve movement can be shown by the
usual island tests. The following are ungrammatical:
(i) *kisko mohan ne socaa [ki siitaa [yah baat [ki raam ne t
maaraa]]
    who   Mohan   thought Sita   this fact that ram   hit

thaa jaantii hE]
be-past knows
    *Who did Mohan think that Sita knows the fact that Ram hit.
(ii)*mohan ne kisko socaa   [ki siitaa [yah baat [ki raam ne t
    Mohan   who   thought that sita this fact that Ram
    maaraa thaa]] jaantii hE]
    hit be-past knows
    (=(i))

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Furthermore, long distance movement of quantifiers also yields crossover violations:

(59) *sab-ko₁ uskii₁ bahin-ne socaa[cₚ (ki) raam-ne t dekhaa]

everyone(EDO) his sister(SUB) thought (that) Ram(ESUB) saw

*His₁ sister thought that Ram saw everyone₁?

(60) *raam-ne sab₁ uskii₁ bahin se kahaa[cₚ (ki) t

Ram(SUB) everyone(EDO) his sister to told (that)

aaye the]

come-perf-pl-m be-pst-pl-m

lit. Ram told his sister that everyone had come.

From these cases we may conclude that Hindi has long distance leftward NP fronting. Furthermore, long distance leftward NP fronting out of a finite clause is different from clause bound scrambling. The wh-phrase in (56) and (58) and the quantifier in (59)-(60) cannot bind the pronoun, indicating that they are in an A-bar position. This then shows that argument shift is subject to binding restrictions and that a finite clause forms a binding domain.[21]

1.3.1.2. Given the discussion so far, the grammaticality of

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[21]If long distance NP fronting utilizes SPEC C or adjunction to IP, then principles that disallow improper movement will insure that the landing site for long distance NP fronting is a non L-position. Furthermore, if extended chain formation is required for NP movement then such a chain cannot be formed when an NP moves out of a finite clause.

(61) and (62) appears to be surprising. In these examples long distance scrambling has moved a wh phrase or a quantifier to the matrix clause over a pronoun contained in the embedded clause.

(61) kis-ko$_i$/sab-ko$_i$ raam-ne socaa   ki uskii$_i$ bahin-ne   t .

   who/everyone(EDO) Ram(SUB) thought that his sister(ESUB)

   dekhaa thaa

   seen be-past

   Who$_i$ did Ram think that his$_i$ sister had seen?/

   Everyone$_i$, Ram thought that his$_i$ sister had seen.

(62) raam-ne   kis-ko$_i$/sab-ko$_i$ socaa   ki uskii$_i$ bahin-ne t

   Ram(SUB) who/everyone(EDO) thought that his sister(SUB)

   dekhaa thaa

   seen be-past   (=61)

Since we have argued that long distance scrambling out of a finite clause is a case of A-bar movement, (61) and (62) should be ungrammatical. In fact, (61) and (62) provide some striking evidence in favor of our earlier claim that clause internal leftward scrambling is to an A-position. (61) and (62) are good because of the possibility of clause internal scrambling in the lower clause moving the wh phrase/ quantifier to an A-position c-commanding the pronoun in the lower clause. The relevant representations for (61) and (62) are given in (63) and (64) below (we omit the irrelevant

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details):

(63) [$_{IP}$kis-ko$_i$/sab-ko$_i$[$_{IP}$ raam-ne[$_{VP}$ socaa[$_{CP}$ ki[$_{IP}$[$_{spec\ T}$ t$_i$"]

uskii$_i$ bahin-ne t$_i'$ dekhaa thaa]]]]]

(64) [$_{IP}$ raam-ne[kis-ko$_i$/sab-ko$_i$[$_{VP}$ socaa[$_{CP}$ ki[$_{IP}$[$_{spec\ T}$ t$_i$"].

uskii$_i$ bahin-ne t$_i'$ dekhaa thaa]]]]]

In (63) and (64), t$_i$" must be in an A-position to be able to
bind the pronoun. We suggest that this position is the SPEC T
position in the lower clause. Note that t$_i$" itself must be A-
bar bound -i.e., be a variable and not an NP trace (given the
ungrammaticality of (56) etc.).[22]

1.3.2. Reflexive binding and Long distance NP fronting out of a finite clause:

Since weak crossover evidence shows that long distance NP
fronting out of a finite clause is an instance of non L-
movement, we would expect that this type of NP fronting does
not affect the reflexive binding possibilities of the type
discussed earlier. That this is so is shown by (66) below in
which a potential antecedent is long distance scrambled to the
left of a reflexive. This moved phrase, however, fails to
antecede a reflexive in the matrix clause. (65) is simply the

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[22]We are ignoring the possibility of a VP adjoined trace in the
matrix clause in (63)-(64) and also in (56).

d-structure counterpart of (63):

(65) *apnii bahin-ne socaa ki raam-ne mohan-ko dekhaa

self's sister(SUB) thought that Ram(ESUB) Mohan(EDO) saw

(lit.) Self's sister thought that Ram saw Mohan.

(66) *mohan-ko$_i$ apnii$_i$ bahin-ne socaa ki raam-ne t dekhaa

Mohan(EDO) self's sister(SUB) thought that Ram(ESUB) saw

(lit.) Mohan$_i$, self$_i$'s sister thought that Ram saw.

Furthermore, as noted in the cases of weak crossover in (61)
and (62), if the reflexive is contained in the subject phrase
of the embedded clause and the object of that clause is moved
to the matrix clause, that object can serve as an antecedent
of the reflexive. (67) and (68) are relatively better than
(66).

(67) ??raam-ne$_j$ mohan-ko$_i$ socaa ki apne$_{i/*j}$ baccoN-ne t

Ram(SUB) Mohan(EDO) thought that self's children(SUB)

ghar se nikaal diyaa

home from threw out

Ram thought that self$_i$'s children threw Mohan$_i$ out of

the house.

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(68)??mohan-ko$_i$ raam-ne$_j$ socaa ki apne$_{i/*j}$ baccoN-ne t

    Mohan(EDO) Ram(SUB) thought that self's children (SUB)

    ghar se nikaal diyaa

    home from threw out

    (=67)

The relevant representations for (67) and (68) are given below
(we only show the relevant traces):

(69)   [$_{IP}$raam-ne$_j$ [mohan-ko$_i$ [$_{VP}$socaa [$_{CP}$ ki [$_{IP}$[$_{SPEC}$ $_T$ t$_i$"]

apne$_{i/*j}$ baccoN-ne ghar se t$_i$' nikaal diyaa]]]]]

(70) [$_{IP}$mohan-ko$_i$ [$_{IP}$raam-ne$_j$ [$_{VP}$socaa [$_{CP}$ ki [$_{IP}$ [$_{SPEC}$ $_T$ t$_i$"]

apne$_{i/*j}$ baccoN-ne ghar se t$_i$' nikaal diyaa]]]]]

As in the case of (61) and (62), the relative acceptability of
(67) and (68) can be explained as follows. Clause internal NP
fronting in (67) and (68) first moves the embedded DO to the
front of the embedded subject, i.e., to the site of t$_i$" in
(69)-(70). This is an instance of L-movement. Further
application of long distance NP movement moves this fronted
phrase to the matrix clause. This is an instance of non L-
movement. However, the intermediate trace, t$_i$", a variable,
binds the reflexive in the embedded subject.

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1.3.3. Short distance adjunction:

Adjunction shift can also move an NP short distance. This conclusion is forced by simple sentences such as (71) and (72) below:

(71)   apne aap-ko raam   pasand kartaa hE

        himself(DO) Ram(SUB)   likes

        Ram likes himself.

(72)   ek duusre-ko raam Or siitaa pasand karte hEn

        each other (DO) Ram and Sita like

        Ram and Sita like each other.

Since the anaphor binding in (71)-(72) must be due to reconstruction, the anaphor must have been moved by an instance of adjunction shift.

1.3.4. Summary:

So far we have shown that argument shift and adjunction to XP do exist as separate operations. We have also established distinct properties of these two operations. Argument shift yields a structure that enters binding theory, overrides WCO effects, is subject to extended chain formation version of ECP and is not reconstructible. Adjunction to XP on the other hand, does not provide new binders, does not override WCO effects (it shows WCO effects), is not subject to extended chain formation version of ECP and can therefore be more non-

local (still subject to ECP and subjacency) and is reconstructible.

1.4. EVIDENCE AGAINST A MIXED POSITION:

To be able to show that an NP occupies a mixed position, we have to show that it shows properties associated with L-movement (argument shift) as well as non L-movement (adjunction) **simultaneously**. The examples given below show that while an NP can show properties of being in an L-position or of being in an non L-position, it cannot simultaneously show both.

1.4.1. RECONSTRUCTION AND WCO:

In this subsection we show that if a fronted NP contains a wh phrase and a reflexive, the reflexive can be bound under reconstruction but the WCO effects do not disappear.

In (73)-(74), I establish that the fronted position acts like an L-position- it overrides WCO effect. In (77)-(78), I show that the fronted position in a similar sentence can also act like a non L-related position because a reflexive in a fronted phrase can be bound under reconstruction.

WCO effect with a simple sentence:

(73)*[us aadmii-ne jo uske$_i$ pitaa-ko jaantaa hE]

     that man   who his father   knows

     kOn saa nOkar$_i$ nOkrii se nikaal diyaa

     which servant   service from dismissed

     Which servant did the man who knows his father

     dismiss from the service?

WCO disappears when the DO is fronted:

(74) kOn saa nOkar$_i$ [us aadmii-ne jo uske$_i$ pitaa-ko jaantaa

     which servant   that man   who his father   knows

     hE]   nOkrii se nikaal diyaa

     be-pres service from dismissed

     Which servant did the man who knows his father

     dismissed from the service ?

Reflexive binding:

(75) [us aadmii-ne$_i$ jo uske pitaa-ko jaantaa hE]

     that man   who his father   knows

     apnaa$_i$ nOkar nOkrii se nikaal diyaa

     self's servant service from dismissed

     The man who knows his father dismissed self's servant

     from the service.

Reflexive binding preserved under reconstruction:

(76) apnaa$_i$ nOkar [us aadmii-ne$_i$ jo uske pitaa-ko jaantaa

self's servant that man   who his father   knows

hE]   nOkrii se   nikaal diyaa

be-pres. service from dismissed

The man who knows his father dismissed self's servant

from the service.

(77) below shows that a complex wh-phrase in-situ that also
contains a reflexive shows WCO but the reflexive contained in
it can be bound. This implies that LF movement of the wh-
phrase must be reconstructible.

(77) [us aadmii-ne$_i$ jo uske$_j$ pitaa-ko jaantaa hE]

that man   who his father   knows

apnaa$_i$ kOn saa nOkar$_{*j}$ nOkrii se   nikaal diyaa

self's which servant service from dismissed

lit. The man who knows his father dismissed self's

which servant from the service.

(78) below shows that if the complex wh-phrase containing the
reflexive is fronted then WCO effects do not disappear
(reflexive binding is still possible):

(78) apnaa$_i$ kOn saa nOkar$_j$ [us aadmii-ne$_i$ jo uske$_{*j}$ pitaa-ko

self's which servant   that man   who his father

jaantaa hE] nOkrii se   nikaal diyaa

knows service from dismissed

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lit. The man who knows his father dismissed self's
which servant from the service.

If the fronted position can be a mixed position then (78)
should not show WCO effects, which it does. This implies that
the fronted complex wh-phrase is in a non L-position since it
shows two distinct properties of phrases in non L-positions --
reconstruction for reflexive binding and WCO.

I give below another similar paradigm with wh-in-
situ/quantifier.

Standard WCO effect:

(79)*[us aadmii ne   jisne   use$_i$ parh liyaa]

     that man-erg. who-erg. it   read

     kOn sii kitaab$_i$/koi kitaab$_i$ pheNk dii

     which book/some book   threw away

     lit. The man who read it threw away which book/some

     book.

WCO overridden:

(80) kOn sii kitaab$_i$/koi kitaab$_i$ [us aadmii ne   jisne use$_i$

     which book/some book that   man-erg. who-erg. it

     parh liyaa] pheNk dii

     read   threw away

     lit. The man who read it threw away which book/some

         book.

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Binding but WCO:

(81) [us aadmii-ne$_k$ jisne   use$_i$ parh liyaa]

    that man-erg. who-erg. it   read

    apnii$_k$ kOn sii kitaab$_{j/*i}$/koi kitaab$_{j/*i}$ pheNk dii

    self's which book/some book   threw away

    lit. The man who read it threw away self's which

    book/some book.

NP with reflexive and wh phrase fronted: WCO effects remain,
reflexive binding is still possible. This implies that the
moved NP is not in an L-position.

(82) apnii$_k$ kOn sii kitaab$_{j/*i}$/koi kitaab$_{j/*i}$ [us aadmii-ne$_k$

  self's which book /some book   that man-erg.

    jisne   use$_i$ parh liyaa] pheNk dii

    who-erg. it   read   threw away

    lit. The man who read it threw away self's which

    book/some book.

If we provide a c-commanding antecedent for the reflexive
then the WCO effect disappear. However, with the disappearance
of the WCO effects, the reflexive binding possibility of (82)
also disappears. This indicates that the fronted DO (that
follows IO) is in an L-position now. It can bind the pronoun
-so no WCO effects and a reflexive in it can be bound by the
fronted IO. Furthermore, the disappearance of the reflexive

binding possibility of (82) (by the subject) shows that reconstruction is no longer possible indicating once again that the fronted DO is in an L-position.

(83) raam-ko$_k$ [apnii$_k$ kOn sii kitaab$_i$/koi kitaab$_i$]$_j$

     Ram-to(IO) self's which book /some book

     [us aadmii-ne$_{*k}$ jisne   use$_i$ parh liyaa] t$_j$ 1OTaa dii

     that man-erg.   who-erg. it   read   returned

     lit. The man who read it returned to Ram self's which

        book/some book.

1.4.2. PARASITIC GAPS:

The following sentence illustrates a parasitic gap construction in Hindi:

(84) kOn sii kitaab mohan soctaa hE ki raam

     which book   Mohan thinks   that Ram

     [binaa PRO e$_2$ parhe] e$_1$ phEnk degaa

     without   reading throw away-fut.

     Which book does Mohan think that Ram will throw away

      without reading?

If the fronted DO can license a parasitic gap then it must be in a non L-position. The following sentences show that a fronted DO **cannot simultaneously** bind a pronoun and license a parasitic gap though if one of the conditions is removed, the

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sentences become grammatical. (85) and (86) simply illustrates that fronting of a DO can override WCO effects with respect to a pronoun buried in a relative clause.

(85)*[us aadmii-ne jis-ne use$_i$ dekhaa thaa] kOn sii kitaab$_i$

    that man   who it saw be-pst which book

        khariid lii

        bought

        Which book did the man who saw it buy?

(86) kOn sii kitaab$_i$ [us aadmii-ne jis-ne use$_i$ dekhaa thaa]

    which book   that man   who it saw be-pst

        khariid lii

        bought

        Which book did the man who saw it buy?

(87) kOn sii kitaabi[us aadmii ne jis-ne *use$_i$/mohan-ko

    which book   that man-erg. who   *it /Mohan

    dekhaa thaa] [binaa PRO e$_2$ parhe] e$_1$ pheNk dii

    see be-pst without   reading   threw away

    Which book did that man who saw *it/Mohan threw away

    without reading.

(88) apnii$_i$ kOn sii kitaab$_i$ [binaa PRO e2 parhe]

    self's which book   without   reading

    us aadmii ne$_i$ el   phenk dii

    that man-erg   threw away

    lit. Self's which book without reading the man threw

    away.

In (87), if the fronted DO binds the pronoun <u>use</u> in the relative clause, then the construction is ruled out because the parasitic gap would be bound from a L-position. If the fronted DO does not have to bind anything, then it can be in a non L-position and the sentence becomes grammatical. In (88), the presence of the reflexive in the fronted DO forces the fronted position to be a non L-position, the parasitic gap is therefore licensed. It is therefore clear that if a position enters binding theory as a binder then it cannot simultaneously license a parasitic gap.

The following contrast also illustrates the same point with sentences with somewhat different properties.

(89)? kOn sii kitaab$_i$ raam-ne [binaa PRO e$_2$ parhe] t$_i$

    which book   Ram-erg. without reading

    apnii jild se alag kar dii

    self's binding from removed

    Which book did Ram remove from self's binding without

    reading.

(90) *kOn sii kitaab$_i$ apnii$_i$ jild se raam-ne [binaa PRO e$_2$

     which book self's binding from Ram-erg. without

     parhe]   e$_i$ alag kar dii

     reading   removed

     Which book from self's binding did Ram remove

     without reading.

In (89) the fronted DO is in an adjoined position. It can therefore license the parasitic gap. The reflexive in the sentence is bound by t$_i$, a variable left by DO. The configuration does not violate any constraint on parasitic gap licensing. In (90), on the other hand, the reflexive can only be bound if either the fronted DO or its trace c-commands it. However, in both cases, the parasitic gap will be illicitly c-commanded by either the DO or its trace. The contrast is therefore accounted for correctly.

1.4.3. Summary:

The evidence given in this section shows convincingly that (i) a fronted phrase cannot simultaneously bind (a reflexive or a pronoun) and reconstruct (ii) a fronted phrase cannot simultaneously bind (a reflexive or a pronoun) and license a parasitic gap. This clearly implies that scrambling does not take place to a mixed position. Furthermore, the evidence given shows clearly that there are two distinct operations of scrambling.

1.4.4. GERMAN EVIDENCE

Webelhuth(1989) shows that German scrambling, like the Hindi cases discussed here (and more extensively in Mahajan,1988), is not a unitary phenomena. He gives extensive evidence that there are cases in which scrambling behaves like A-bar movement and in other cases it behaves like A-movement. He argues that these characteristics arise because scrambling is to a mixed position. That is, it is case of adjunction, and the adjoined position behaves like a mixed position. However there are only two cases that he gives that are supposed to show the existence of a mixed position in German. Neither of these examples make the point that he wants to establish. This is because there is a simple alternative derivation for these sentences which does not employ a mixed position (these alternative derivations however were not possible(/available) under the assumptions that Webelhuth worked with). The first case he uses is the following:

(91) Peter hat jeden Gast$_i$ [ohne t$_i$ anzuschauen] seinem$_i$

Peter has every guest without to-look-at   his

Nachbarn   t$_i$ vorgestellt

neighbor   introduced

Peter introduced every guest to his neighbor without

looking   at.

The fronted phrase <u>jeden Gast</u> is argued by Webelhuth to be in

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a mixed position because it can bind the pronoun _seinem_ and it can license a parasitic gap in an adjunct clause at the same time. However, the same result is very easily given by a representation of (91) above in which the pronoun is simply bound by an empty a trace in a L-position higher than the pronoun but lower than the adjunct clause. The second step of the movement would be to an adjoined position which licenses the parasitic gap. The relevant representation would look like:

(92) ?Peter hat jeden Gast$_i$ [ohne t$_i$ anzuschauen]   t$_i$"

   Peter has every guest without to-look-at

   seinem$_i$ Nachbarn t$_i$' vorgestellt

   his   neighbor   introduced

t$_i$" is the variable in SPEC AGRPo that binds the pronoun. _jeden Gast_ is then simply adjoined to the maximal projection containing the adjunct clause. This is consistent with the IP structure proposed in Chomsky (1989) and assumptions made therein whereby DOs move to SPEC AGRPo. The second example that Webelhuth gives also has the same property. The sentence is given below:

(93) ? Peter hat die Gaste [ohne e anzuschauen] einander

   Peter has the guests without looking at each other

   t vorgestellt

   introduced-to

' Peter introduced the guests to each other without

looking at them.'

Once again the simple fact is that the fronted die Gaste can

bind the reciprocal and at the same time license a parasitic

gap. The explanation that we suggest for this is the same as

the previous case. die Gaste simply moves through SPEC AGRPo

and therefore the reciprocal is L-bound by the variable

contained in this specifier. The parasitic gap is simply

licensed by the further movement which is a case of

adjunction, L-bar movement that can license parasitic gaps.

Thus the examples given by Webelhuth do not give any evidence

for a mixed position. On the other hand, the examples from

Hindi had the crucial property that there was no alternative

derivation of the sort possible for the German cases given by

Webelhuth. Hindi examples provided evidence against a unitary

mixed position.

Furthermore, if we construct the right kind of German examples

to test the issue under debate, we get further evidence

against a unitary mixed position even in German.

(94)-(98) set up the control cases. (94) shows normal binding,

(95) shows binding under reconstruction, (96) shows WCO effect

and (97) shows that WCO can be overridden by fronting (the

data below has been provided by Irene Heim).

(94) weil Hans$_i$ nur ein Geschenk fur sich$_i$ allein

because Hans only one gift for himself alone

ausgesucht hat

chosen has

(95) ?weil [nur ein Geschenk fur sich$_i$] Hans$_i$ allein

because only one gift for himself Hans alone

ausgesucht hat

chosen has

(96) ?? weil [sein$_j$ Empfanger] [nur ein Geschenk]$_j$

because its recipient only one gift

allein ausgesucht hat

alone chosen has

(97) ok/? weil [nur ein Geschenk]$_j$ [sein$_j$ Empfanger]

because only one gift its recipient

allein ausgesucht hat

alone chosen has

(98) below in which a quantified phrase containing a reflexive
is fronted is however much worse:

(98) ??/*? weil [nur ein Geschenk fur sich$_i$]$_j$ [sein$_j$

because only one gift for himself its

Empfanger]$_i$ allein ausgesucht hat

recipient alone chosen has

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This shows that the fronted quantifier is in a non L-related position from which it cannot reconstruct for binding. This then provides some evidence that a position cannot simultaneously bind and reconstruct.

A similar point can be made on the basis of the contrast between (99) and (100) provided by Beatrice Santorini and Caroline Heycock (p.c.) (these sentences are based on Webelhuth's examples):

(99) ? Peter hat jeden Gast ohne anzuschauen seinem Nachbarn
       peter has every guest without to-look-at his neighbor
     vorgestellt
     introduced

(100)*? Peter hat jeden Gast seinem Nachbarn ohne
        peter has every guest his neighbor without
        anzuschauen vorgestellt.
        to-look-at introduced

This contrast parallels the one noted for Hindi (89) and (90). In (99), the pronoun is bound by a variable that is structurally below the parasitic gap adjunct. The parasitic gap is licensed by further movement of the direct object to a non L-position. In (100), the fronted direct object must be in a L-position to be able to bind the pronoun. The parasitic gap, in this construction would therefore be illicit since it

will be bound from an L-position.[23]

1.5. CONCLUSION: Toward a Unified Theory of Scrambling:

I have shown that Hindi scrambling must be viewed as two distinct operations: an argument shift operation and an adjunction to XP operation. Argument shift is a L-movement rule and involves substitution into a L-position. This movement shows binding properties normally associated with A-movement. Adjunction to XP, on the other hand, is an adjunction operation and it shows properties associated with A-bar movement, i.e., it does not provide new binders, can license parasitic gaps and is not subject to binding locality in terms of extended chains. German cases, as discussed in Webelhuth(1989) seem to have a similar range of properties (with language particular variations that are not of relevance here). I have also shown that there is no unitary mixed scrambling site of the sort suggested by Webelhuth. There is

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[23]Beatrice Santorini(p.c.) raises a potential problem for this analysis. She points out that if both the dative phrase as well as the direct object containing the pronoun are analyzed as fronted by adjunction in sentences like (100), then it should be possible to bind the pronoun under reconstruction. (100) should then be similar to (99) in its grammatical status. It is not clear how the relevant contrast should then be accounted for. I suggest that fronting of both the IO and the DO simultaneously is blocked independently possibly by a condition such as relativized minimality. If that is the case then one of the fronted phrases must be in an L-position. If the DO is in an L-position then a sentence such as (100) is ruled out because the parasitic gap is illicit, if the dative phrase is in an L-position and the DO is in a non L-position, then the sentence is a WCO violation.

no data that supports the existence of such a mixed position and there is evidence against such a mixed position from Hindi as well as from German.

If free word order is a result of scrambling, and if scrambling is indeed two distinct operations- argument shift and adjunction to XP, as we have argued, then our analysis has some implications for cross linguistic diversity found in scrambling constructions.

It is generally assumed that scrambling is simply an adjunction operation. If this is so then a great deal of variation found among natural languages with respect to scrambling is surprising. The theory we are suggesting provides a framework for capturing this diversity.

It is possible that there are languages with only argument shift or only with adjunction to XP. Furthermore there may be languages with both operations or neither of them. The following language types are then allowed for under our system:

(99) A. + Argument Shift

- Adjunction to XP

B. - Argument Shift

   + Adjunction to XP

C. + Argument Shift

   + Adjunction to XP

D. - Argument Shift

   - Adjunction to XP

The languages that we have discussed, i.e., Hindi and German
are Type C languages under this typology. However as it stands
this typology is too coarse. It does not allow for drawing
finer distinctions, for example between German and Dutch, both
of which seem to belong to Type C but have differences with
respect to movement of the object over the subject, German
allows it and Dutch does not. Similar differences exist
between Scandinavian languages and other Germanic languages.

I suggest that both of Argument Shift and Adjunction to XP may
interact with language specific properties that constrain the
range of each of these operations. Holmberg(1986) shows that
Scandinavian rule of object shift (subsumed here under the
argument shift operation) is related to verb raising and Case.
Within Scandinavian languages that Holmberg describes and
within Germanic languages in general there is some variation
in the range of facts associated with this rule (as noted
above, see Holmberg,1986, Bennis and Hoekstra,1985 and Vanden

Wyngaerd,1989). I suggest that argument shift is in general related to verb movement (cf. Holmberg,1986). This implies that languages with more restrictions on verb movement rules will have severe restrictions on argument shift rules. Furthermore long distance verb movement rules such as restructuring constructions should allow more liberal application of argument shift operation. Both of these predictions seem to be correct. What about conditions on Adjunction to XP operation? Even within that domain there appears to be some variation among languages. There have been some recent suggestions that adjunction to a maximal projection may be subject to a head government condition. Frampton(1989) makes use of certain insights of Kayne(1984) to suggest a theory of possible adjunction sites. If that approach is right then the second scrambling operation, i.e., Adjunction to XP, is also subject to principled variation. Furthermore, there are general restrictions against adjunction to arguments (cf. Chomsky,1986). There may also be restrictions on adjunction to VP or other functional projections (i.e., if VP behaves like an argument then may be adjunction to VP is not possible either (contrary to Chomsky,1986; May,1985)). I summarize below some of these possible restrictions below:

(100)

a. Constraints on argument shift:

(i) Verb movement is required for argument shift (cf. Holmberg,1986). This would restrict argument shift in a language like English while allowing it to various degrees in other Germanic languages and in languages like Hindi.

(ii) Extended chain formation is required for argument shift (cf. Chomsky,1986). This yields the binding theory effects on argument shift; (the idea of T-chains of Gueron and Hoekstra,1987 is also relevant here). The formation of extended chains may further be sensitive to the direction of canonical government (cf. Kayne,1984). This yields the fact that head final languages have freer argument shift that head initial languages. Part of the variation within Germanic languages, i.e., between verb medial Scandinavian languages and verb final German and Dutch is related to this factor.

(iii) Case theory. Each lexical chain may have only one structural Case. This will interact with the theory of Case I outline later (L-Case play a special role in this theory).

b. Constraints on Adjunction:

(i) No adjunction to arguments (cf. Chomsky,1986). This will rule out CP and NPs as possible adjunction sites for adjunction. I will present evidence that contrary to Chomsky's (1985) proposal, VP is not a possible adjunction site (recall that VP movement itself behaves in a manner similar to that of movement of arguments as against to IP movement- this

indicates that VP behaves like an argument and it is therefore plausible that adjunction to VP is ruled out by the general principle against adjunction to arguments).

(ii) **Directionality of head government** (cf. Kayne,1984; Frampton,1989). This will restrict positions from which adjunction originates depending upon the direction of canonical government in a language. For instance, a version of Frampton's condition will prohibit adjunction of subjects to IP in a head initial language like English while allowing it in a head final language like Hindi.

(iii) **General principle like subjacency and ECP** that constrain movement and/or well formed representations.

It may be noted that all of the above restrictions are independently needed in theory that we are working within (except the assumptions about Case theory which may be important (the correlation of 'rich Case morphology' and 'freedom of word order' may be partly derivable from this view of Case theory).

The system that I have outlined here shows that certain possibilities exist and that it is possible to account for these possibilities in a principled manner. The system also has the desirable property of outlining a framework within which 'scrambling' or 'free word order' can be studied. It also has the potential of capturing similarities and differences within such languages in terms of how the

'scrambling sites' behave. Furthermore, the theory of positions does not need to include the existence of a mixed position.

CHAPTER TWO

AGREEMENT, CASE AND SCRAMBLING

2.0. INTRODUCTION

In this chapter I will argue for the following:

(i) Subject as well as object agreement in Hindi is mediated through a rule of argument shift. This rule moves an appropriate argument into a L-related position where it is governed by AGR providing a configuration in which agreement can take place. In arguing for this point I will provide an articulated theory of
agreement in Hindi that differs from all previous accounts of agreement in Hindi.

(ii) I will argue that agreement between an AGR element and the argument that it governs is also a configuration of structural Case assignment. This would imply that only those elements that do not receive structural Case within VP in Hindi can move to SPEC AGR positions. I will suggest that object agreement is possible in Hindi only in those cases where the verb itself is a non (structural) Case assigner, i.e., is a perfect participle or a psych verb.

(iii) I will propose a theory of Case that draws a clear

distinction between the roles of Inherent Case and Structural Case. I will suggest two visibility conditions - a LF visibility condition that requires all NPs (or chains) to bear a structural

Case and a s-structure visibility condition that requires all NPs (or chains) to have a Case (inherent or structural). Since structural Case is required independent of inherent Case, I suggest that there is nothing wrong with an NP bearing a structural as well as a inherent Case. In fact a stronger condition such as the one requiring all inherently Case marked NPs requiring a structural Case is motivated by our assumptions. This condition receives some support from agreement facts in Marathi and Marwari (also Nepali) where an inherently Case marked NP can show agreement.

(iv) In Chapter 1, I argued that some instances of short distance leftward movement in Hindi are instances of L-movement. Since SPEC of AGR is an L-related position to which structural Case is assigned, we predict that arguments that are structurally Case marked by the verb will never be able to move into such a position. Thus structural Case assignment by the verb to an argument (object) ensures that this argument cannot undergo argument shift. These effects will be discussed in detail and it will be shown that Agreement and Case assignment are interrelated with scrambling possibilities in Hindi.

(v) Finally, we discuss the nature of the Case assigned by a verb. I will suggest that unergative verbs in Hindi assign a Case to their objects and that this Case assignment looks like partitive Case assignment of Belletti(1988). The NP that receives that Case must be interpreted as nonspecific. However, it will be argued that this Case cannot be an inherent Case. On the basis of some NP fronting facts entering into reflexive and pronominal binding, I suggest that this Case is in fact structural. I will discuss some consequences of this approach as it bears upon issues of specificity and Case assignment.

2.1 THEORETICAL BACKGROUND:

I will assume that the canonical agreement configuration is as in (1) (linear order irrelevant):

(1)   AGRP
        /   ˙ ˙ ˙
       /   ˙
      /   ˙
    SPEC   AGR'
                 /   ˙ ˙ ˙
                /   ˙
               /   ˙
              /   AGR
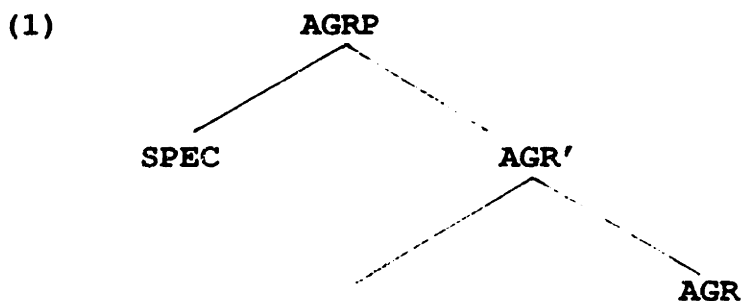
It will be argued that both subject as well as object agreement are essentially similar processes involving a configuration such as (1). Following some recent proposals about IP structure (cf. Pollock,1989; Chomsky,1989), I will

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assume an IP structure as in (2):

(2)

```
                    AGRPs
                   /    \
             SPEC /      \
                 /    ,'  \
                ,'.   '    AGRs
              ,'    \
         SPEC/      \
            /    .'   \
           /    '      T
      SPEC/     /\
          /    /  \
         /    /    AGRo
        /    /
       /    /
      /    /
        VP
       /\
      /  \
     /____\
```

I will further assume that all arguments are generated VP internally. Following discussion in Chapter 1, I will assume that VP internal arguments can move to VP external positions. I will suggest that NPs that are not structurally Case marked VP internally must move to a VP external position where they receive structural Case. On the other hand, NPs that are structurally Case marked internal to the VP do not have to move but they may do so only if they move to a non L-related position. This implies that only those arguments that are not structurally Case marked within the VP can move to SPEC AGR and therefore show agreement. I

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assume, following Chomsky(1989), the NPs in SPEC AGRP, and SPEC AGRO, positions receive structural Case.

2.2 AGREEMENT

2.2.1 Some Basic Facts about Hindi Agreement:

In Hindi, the general pattern of agreement in simple clauses is as follows: the main verb and the auxiliary (if there is any) agree with the subject of the clause in non perfective tenses. The subject must not be followed by any postposition or case ending (this is meant to exclude dative subjects etc. which are followed by a postposition.)[1] Thus we have:

(3) raam   roTii   khaataa   thaa

     Ram (m.)   bread(f.)   eat (imp.m.) be(pst.m.)

     Ram (habitually) ate bread.

(4) siitaa   kelaa   khaatii   thii

     Sita (f.) banana(m.) eat(imp.f.)   be (pst. f.)

     Sita (habitually) ate bread.

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[1]The description of Hindi agreement and ergativity are provided by many authors including Kachru and Pandharipande (1979), Saksena(1981,1983,1985), Comrie(1984,1985), Pray(1970). Also see in connection with the ergative pattern in Hindi, Amritavalli(1979). However the facts of long distance agreement are not covered exhaustively in most studies (see however, Gurtu(1985) for a brief discussion for some matters pertaining to this topic). See also for a somewhat different perspective Gair and Wali (1987a,b) and Davison(1988).

However, in perfective tenses where the verb is a perfect participle, the agreement pattern is different. The subject of a transitive verb in a perfective construction is followed by an ergative postposition. The verbal agreement in these cases is with the direct object if that direct object is not followed by a postposition (for instance, the dative postposition). If the direct object is followed by a postposition then the agreement is neutral and shows up as third person singular ending. This is illustrated by the following examples:

(5) raam-ne   roTii   khaayii   thii

    Ram(m.)   erg.   bread(f.)   eat (perf. f.)   be (pst. f.)

    Ram had eaten bread.

(6) baccoN-ne   siitaa-ko   dekhaa   thaa

    children(m.)erg.Sita(f.)   dat.see(perf.m.sg.)

                                                be(pst.m.sg.)

    The children   had seen Sita.

In sentences with intransitive verbs, agreement is with the subject as in (7):

(7) raam   baazaar   gayaa

    Ram   market   go(pst. m. sg.)

    Raam   went to the market.

The exception to this kind of intransitive agreement is in a class of sentences that involve a set of verbs that roughly corresponds to that of the class of unergative intransitives. The subjects of these intransitives can appear (optionally in most cases) with an ergative postposition in which case the agreement is neutral. Thus we have:

(8) siitaa (*ne)   aayii

     Sita (f.)   arrived/came (f.)

     Sita came.

(9) kutte   bhONke

     dogs(m.pl.)   barked (m. pl.)

     The dogs barked.

(10) kuttoN ne   bhoNkaa

      dogs(pl.)erg.   barked (m. sg.)

      The dogs barked.

This seems to indicate the special status of this class of intransitives that excludes unaccusatives at first approximation. This class seems to behave in this respect in a manner similar to regular transitive verbs indicating that these verbs may (at least optionally) require to be treated like transitives. The rest of the agreement facts in complex

sentences will be introduced in later sections.

2.2.2 Some Basic Facts about Hindi Case Markings:

Hindi nominative and accusative case endings are null as
illustrated in (3). Ergative marking is <u>ne</u> and dative is <u>ko</u>.
However, the dative and the ergative markings are
postpositional in the sense that <u>ko</u> and <u>ne</u> are 'loosely'
attached to the NP that they follow. There are some
particles that can appear between <u>ko</u>/<u>ne</u> and the preceding
NP. There is, however, no postposition stranding. These
ergative and dative phrases exhibit some interesting
properties in that they can occupy (the ergative phrases
must occupy) the subject position and can bind and control
from that position. On the other hand, they can never show
agreement with the verb. In what follows, we will try to
account for these properties in so far as they are related
to our discussion of agreement (see Gurtu(1985) for some
details of the behavior of such phrases).

2.2.3. Subject Agreement:

Let us start with a simple imperfective construction that
shows subject agreement but no object agreement. The
auxiliary also agrees with the subject.

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(11) raam   roTii   khaataa   thaa

Ram (m.)   bread(f.)   eat (imp.m.) be(pst.m.)

Ram (habitually) ate bread.

Let me assume at this point that the auxiliary is generated
in I. The d-structure for (11) would then be as in (12):

(12)

```
                        AGRPs
                       /\
                      /  \
                 SPEC     \
                          /\
                         /  \
                        /    \
                       /     AGRs
                      /\
                     /  \
                SPEC     \
                    \    /\
                     \  /  \
                      \/    \
                      /\     T
                     /  \
                SPEC     \   thaa
                    \    /\
                     \  /  \
                      \/    \
                      /     AGRo
                     /
                    /
                  VP
                  /\
                 /  \
                /    \
               /_____\
```

          raam roTii khaataa
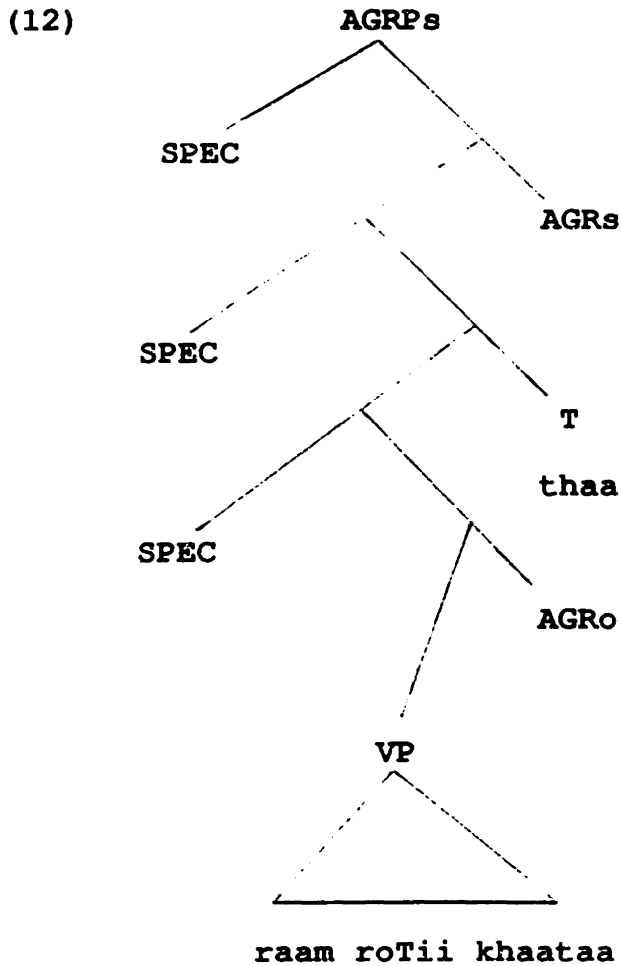
The verb <u>khaataa</u> assigns a structural Case to the object.
The object, therefore, does not have to move to get a Case.
I suggest that the subject moves to SPEC T and then to SPEC

AGRs where it receives a structural Case. The auxiliary in T

moves to AGRs. As for the agreement between the subject and

the main verb -- there are two possibilities. One

possibility would be to assume that the subject-verb

agreement is established at d-structure in a SPEC-Head

configuration. This configuration is not a structural Case

assignment configuration which is restricted to SPEC AGR

configuration. Under this view, the subject can agree both

with the auxiliary and the main verb but receive its

structural Case from AGRs. SPEC AGRo may simply be missing

since specifiers are optional (cf. Fukui and Speas,1986).

The other possibility would be to allow the subject to move

through SPEC AGRo and on to SPEC AGRs. If this later view is

adopted then we will have to ensure that the subject trace

in SPEC AGRo does not receive a structural Case since the

structural Case should be assigned to the head of the chain

in SPEC AGRs. This effect could be obtained either by making

structural Case assignment optional or by simply deleting

the trace in SPEC AGRo. Both these options will yield a well

formed chain. We leave the choice between these two

possibilities in Hindi open.[2]

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[2]Some evidence for the latter possibility comes from Marathi
where in a parallel construction, the verb bears object agreement
morphology as well as the subject agreement morphology but both of
these correspond to the subject. That is, the subject shows subject
as well as object agreement. This is illustrated by the following
example from Gair and Wali(1987):
(i) tu   pothi   vaac-t- o -s
    you-masc book-fem read-imp-masc- 2ndPAGR
    You(masc) read a book.

These moves solve another problem of Hindi syntax. Hindi permits multiple auxiliaries all of which agree with the argument that the main verb agrees with as shown below:

(13) raam   roTii   khaataa   rahtaa   thaa

    Ram(m.) bread(f.) eat(imp.m.) prog.(imp.m.) be(pst.m.)

    Ram used to keep on eating bread.

I will assume that auxiliaries can have their own SPEC positions. The subject can move through specifiers of the auxiliaries showing agrrement with them but receives its Case from the AGRs.

2.2.4. Object Agreement:

A simple case of object agreement in Hindi is given below:

(14) raam   ne   roTii   khaayii

    Ram(m.) erg.   bread(f.)   eat (perf. f.)

    Ram ate bread.

I assume that d-structure of (14) is similar to that of

_____

(ii)tu   pothi   vaac-t- e -s
    you-fem book-fem read-imp-fem- 2ndPAGR
    You(fem) read a book.
In perfective clauses, where object shows agreement with the verb, the subject agreement is limited to outer agreement, i.e., subject shows subject agreement morphology while the object shows object agreement morphology.

(11), (i.e., (12)) the case of subject agreement. The crucial difference is that the verb, a perfect participle, is a non Case assigner (Hindi passive is also based on the same form of the verb). Given this, the object fails to receive structural Case VP internally and therefore moves to SPEC AGRP$_o$ to receive structural Case. In object agreement constructions in Hindi, the subject is always inherently Case marked - with an ergative Case marking above (dative is possible with psych verbs). Since, I am assuming that inherent Case is sufficient at s-structure, the subject could remain in situ giving a sentence such as (15) which is well formed.

(15) roTii raam ne   khaayii

   bread (f.) Ram(m.) erg. eat (perf. f.)

   Ram ate bread.

I suggest that (15) has the following s-structure:

(16)

```
                         AGRPs
                        ·-·
                     --·      ·
                 --·              ·
            SPEC                   ·-·-·
                               ·--·      ·
                            ·--·          ·
                       ·---·               ·
                     --·                    AGRs
                 --·                      ·-·
            SPEC                      ·--·    ·
            roTii                 ·--·         ·-·-·
                              ·--·              ·    ·
                           ·-·                   ·    T
                      ·--·                        ·
                  ·--·                             ·
            SPEC                                    ·
                ·                                   ·
                 ·                                  ·
                  ·                               AGRo
                   ·                              khaayii
                VP
               /\
              /  \
             /    \
            /      \
           /_____\
        raam-ne   t    tv
```
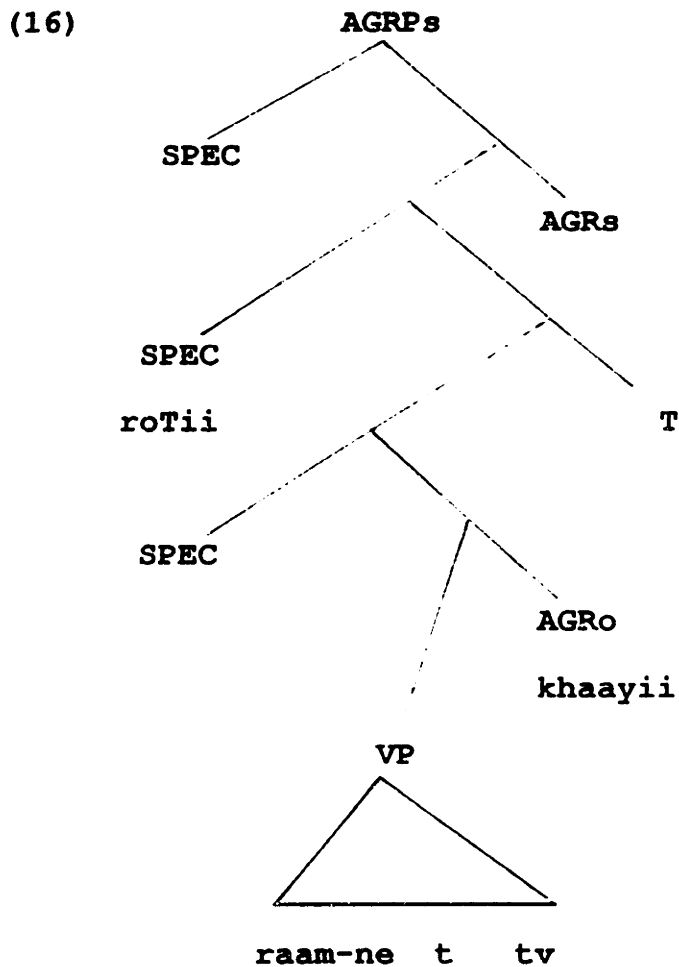
Recall that s-structure movement of the object is required
because it does not have __any__ Case, while s-structure
movement of the subject is not required because it has an
inherent Case. However, nothing prevents s-structure
movement of the subject to SPEC AGRP, and this is what
yields (14).

2.2.5. Agreement and adverbial interpretation:

Some evidence for the suggestion that (14) and (15) involve
argument (object) shift to SPEC AGRo comes from adverbial

interpretation in Hindi.

Let us consider an adverb like <u>jaldii jaldii/jaldii se</u>
'quickly'. As noted by Travis(1988), 'quickly' allows for a
process reading as well as for an event interpretation
depending on its location.

Process reading (when the adverb is adjoined to the V-
projection system):

(17) a. John will be quickly arrested by the police.

    b. John will be arrested quickly by the police.

Event reading (when the adverb is adjoined to the I-
projection system):

(18) a. John quickly will be arrested by the police.

    b. Quickly, John will be arrested by the police.

Since Hindi is a head final language, the ordering between
the auxiliary and the adverb does not give any clue about
the adjunction site of the adverb. We assume that Travis's
conclusion is essentially correct and furthermore the
semantic interpretation of adverbs like 'quickly' is
universally structure dependent. This allows us to make an
assumption about the adjunction site of adverbs like <u>jaldii</u>
<u>jaldii/jaldii se</u> in a language like Hindi depending on their

interpretation. A sentence such as (19) is ambiguous between
a process and event reading in Hindi as expected because the
adverb could be adjoined either to I system or to the V
system :

(19) (pulis ko dekh kar) cor jaldii se bhaag gayaa

     police   see having thief quickly ran away

     (Having seen the police) the thief quickly ran away.

With transitive verbs in an ergative constructions (with
object agreement), the following are two of the possible
word orders:[3]

(20) raam-ne kaam jaldii se kiyaa

     Ram-erg work quickly did(obj.agreement)

(21) raam-ne jaldii se kaam kiyaa

     Ram-erg quickly   work did(obj.agreement)

In (20), we get a clear process reading for the adverb while
(21) gives an event reading. If the verb and its object form

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        [3] Similar effects are also noticeable in psych verb
constructions that also show object agreement.
 (i) raam-ko kaam jaldii se karnaa hogaa
     Ram-dat work quickly   do-inf be-fut
     Ram will have to do the work quickly
(ii)) raam-ko jaldii se kaam karnaa hogaa
      Ram-dat quickly   work do-inf be-fut
      Ram will have to do the work quickly

a d-structure constituent, then (20) involves leftward movement of the object. Since (20) does not permit an event reading, the adverb must be adjoined to the V-projection system and the object must be hierarchically superior to this adverb. We have argued that the position of the object is SPEC AGRo in such constructions. (21) does not permit a process reading therefore under our assumptions that adverb must be adjoined to the I-projection system (higher than the SPEC AGRo position).

(21) makes an additional point that object agreement in Hindi must be a s-structure phenomenon. If it was possible to have object agreement at LF (by a method similar to that of expletive adjunction of Chomsky,1989) then a sentence like (21) should permit a process reading (along with an event reading in a manner similar to (19)).

Consider now a sentence like (22) where there is no object agreement and therefore under our assumptions no movement to SPEC AGRo:

(22) siitaa jaldii se kaam kartii thii

    Sita   quickly   work do-imp part be-pst (sub agreement)

(22) is ambiguous and allows for both a process as well as event interpretation for the adverb. This contrasts with

(21) which gives a strong event reading. Object-adverb order

is possible but with a focal stress on the object:

(23) siitaa kaam jaldii se kartii thii

   Sita   work quickly   do-imp part be-pst (sub

                                        agreement)

(23) is ambiguous in a manner similar to (22) (though

process reading is admittedly stronger). The possibility of

an event reading for the adverb in (23) indicates that the

adverb could be attached to the I-projection system unlike

(21). Since (23) does not involve object agreement and the

object requires focal stress, one can argue that the object

is in a dislocated position (note that no such stress is

required for the object in (21)). I suggest that the

contrast between (21) and (22) is due to this fact. In (21),

the object is argument shifted to SPEC AGRo position over

the adverb which is adjoined to a V-projection. The absence

of an event interpretation for the adverb is yielded under

the assumption that a V-adjoined adverb cannot give an event

interpretation. The ambiguity of (22) is because the adverb

which linearly precedes the object can be interpreted either

as a V-adverb or an I-adverb. Same is true in (23). The

possibility of event reading in (23) forces the conclusion

that the object must be attached higher than the adverb,

i.e., above some I-projection and above SPEC AGRo

projection. The requirement of focal stress on the object is an indicator of its dislocated position. The absence of object agreement indicates that the object has not moved through SPEC AGKo position.

2.2.6. Some Comparative Evidence: As noted earlier, lexical Case in Hindi is postpositional and has the property that it blocks agreement. The subject in (14) while in a position where it can show agreement with the verb (or the auxiliary), fails to do so in Hindi because of this reason. There are languages closely related to Hindi that permit the ergative subject to agree. In Marathi, as noted by Gair and Wali(1988), second person singular subjects in perfective constructions can show subject agreement. The object in the same clause can show object agreement. This is illustrated by the example below (cf. Gair and Wali,1988:97):(glosses modified)

(24) tu   kavitaa   vaac-l-i-s
      you(erg.)masc. poem fem read(perf)femSg.-2Sg
      You read the poem.

Marathi allows it only in one specific instance, i.e., when the subject is second person singular in which case the subject is not overtly inflected for ergative Case.

Another case is found in Marwari as discussed in
Magier(1983). However, Marwari, though showing a split
ergative pattern, seems to have lost ergative
postposition/case marking. The subjects in a perfective
construction can clearly show agreement with the auxiliary.
The following sentence from Magier(1983:250) illustrates the
point:

(25) mhaNiN siitaa-ne dekhii huuN

    I   Sita-acc   saw(fem) am(1sg.)

    I have seen Sita.

Marwari also displays an interesting property in that it
allows object agreement over an overt Case marking. We will
return to that shortly.

The last case of subject agreement in a perfective
construction is from Nepali, another closely related Indo-
Aryan language. This case is clearest in one respect- i.e.,
the subject is clearly marked by an ergative postposition
but still shows agreement with the past participle.

(26) John-le phul   kinyo   (Dalrymple,1984)

    John-erg egg(s) bought(3sg)

    John bought egg(s).

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However, it is not clear if Nepali permits object agreement at all in such constructions.

Going back to Hindi, it may be noted that the objects of perfect participles can also bear a lexical Case - the dative -ko. If the object bears -ko in an ergative construction, object agreement is blocked in Hindi. The verb in such cases takes unmarked third person singular ending.

(27)   siitaa-ne   laRkii-ko dekhaa

       Sita-erg   girl-ko   see-perf-3sg masc

       Sita saw the girl.

Once again, we assume that the object may have moved to SPEC AGRP$_o$ - nothing prevents it. We can not see it clearly in Hindi but then Hindi lexical Case marking postpositions block agreement. The evidence supporting the possibility of object agreement with inherently Case marked objects comes from other languages like Marwari. As noted in (25) above, the object even when it is followed by the overt case marking can agree with the main verb.

Adverbial interpretation in Hindi, however, does provide a clue about the s-structure position of -ko objects. If an adverb such as jaldii se follows a -ko object, it can only have a process reading. If the adverb follows the -ko

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object, it the adverb can have a process reading as well as an event reading though the event reading appears to be stronger. The relevant examples are:

(28) pulis-ne cor-ko jaldii se pakaR liyaa

police-erg thief-ko quickly catch-perf

The police quickly arrested the thief. (process)

(29) pulis-ne jaldii se cor-ko pakaR liyaa

police-erg quickly thief-ko catch-perf

The police quickly arrested the thief. (process and

event)

This suggests that in (28) above, the -ko object is in SPEC AGRo. The adverb therefore has a process reading only because it must be attached to a V-projection. In (29), the -ko object could be in-situ thereby allowing the attachment site of the adverb to be either a V-projection or an I-projection permitting both process and event interpretation.[4]

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[4]The preference of the event reading may be because in the unmarked case, the -ko object has a tendency to move to SPEC AGRo at s-structure forcing the adverb in (29) to be more readily interpreted as an event modifier. However, if the -ko object binds a pronoun in an indirect object, the adverb, if it precedes the object, can have only an event interpretation:
(i) polis-ne jaldii se kis$_i$ bacce-ko uske$_i$ pitaa-ko lOtaa diyaa
 police-erg quickly which child(DO) his father(IO) returned
 Which child did the police return to his father quickly?

So far we have been assuming that the auxiliaries (if there are any) agree with the same argument that the main verb agrees with. This is true for Hindi and Marathi. However, as shown by (25) above that is not entirely true for Marwari where the present tense auxiliary can agree with the subject and the object can agree with the perfect participle. It may be suggested that the present tense auxiliary is generated in AGRP. in Marwari therefore it shows subject agreement. Alternatively, Marwari may permit AGRP. to be generated lower than T. This will allow the subject to move to AGRP. to T giving subject agreement with the auxiliary. However, it is not clear what the relevant difference between the present tense auxiliary and the past tense auxiliary is. The past tense auxiliary agrees with the argument that the main verb agrees with. I leave this matter open here.

2.3. Case and Agreement:

Our discussion so far has tied structural Case and agreement in a particular way, i.e., structural Case is assigned to NPs in SPEC AGRo and SPEC AGRs. However, as noted in the previous section, structural Case assignment must be optional. The relationship between Case assignment and agreement is further complicated by certain instances of long distance agreement in Hindi. I will briefly discuss some cases here (for a longer discussion see Mahajan,1989).

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2.3.1. The phenomena of what has been called long distance agreement is illustrated by sentences like (30) in which the embedded infinitive verb as well as the matrix verb agree with the lower object:

(30) raam-ne   roTii   khaanii   caahii

Ram(m.) erg. bread(f.) eat(inf.f.) want(perf. pst.f.)

Ram wanted to eat bread

The fundamental problem is that the object of the lower clause shows agreement with the embedded verb as well as the matrix verb. Therefore if agreement is mediated by movement of the lower object through the lower $AGRP_o$ to the higher $AGRP_o$ (as suggested in Mahajan,1989) then the resulting chain has two agreement positions and also two Case positions. In what follows we will address this problem arguing that agreement in the lower clause in sentences like (30) above does not result in Case assignment and that the structural Case is actually assigned to the embedded object in the matrix SPEC $AGRP_o$.

Some of the things to be noted in connection with this type of agreement are:

(i) The agreement of the object and the infinitive in the

embedded clause is optional. If the infinitive does not agree with its object, then the matrix verb cannot show agreement with the lower object. Thus we have:

(31)   raam ne roTii   khaanaa   caahaa

        Ram erg. bread(f.)   eat(inf.m.) want(perf.pst.m.)

        Ram wanted to eat bread.

(32)   * raam ne   roTii   khaanaa   caahii

          Ram   erg. bread f. eat(inf. m.) (perf.pst.f.)

(ii) If the lower verb does agree with the object, then the matrix verb **must** also show agreement with the lower object:

(33)   * raam ne   roTii   khaanii   caahaa

          Ram erg. bread (f.) eat(inf. f.) want(perf.pst.m.)

(iii) If the matrix verb is not a perfective participle, then it shows agreement with its own subject.

(34) raam   roTii   khaanaa   caahtaa   thaa

     Ram bread(f.) eat(inf.m.) want(imp.m.) be (pst.m.)

For most speakers, matrix clause agreement as in (25) rules out the embedded infinitive verb agreement. Thus (26) is ungrammatical for those speakers:

(35)*/??? raam   roTii   khaanii   caahtaa   thaa

       Ram(m.) bread(f.) eat(inf.f.) want(imp.m.)

                                                    be(pst.m.)

For some speakers (35) is not bad. The matrix agreement in
non perfective tenses is however obligatory even for those
speakers who accept (35). Thus (36) is sharply out for all
speakers.

(36) *raam   roTii   khaanii   caahtii   thii

      ram(m.) bread (f.) eat(inf.f.) want(imp.f.) be(pst.f.)

(iv) Agreement can only go upwards, that is, while the
matrix verb shows agreement with the lower object in some
environments, the lower infinitive can never inherit
agreement features of the matrix verb even if it does not
agree with its object in some cases. One of these instances
is where the lower object can have dative Case forcing the
lower verb to be in third person singular. In such cases,
the lower verb cannot show any agreement:

(37)   siitaa   billii ko   dekhnaa   caahtii   thii

       Sita(f.) cat(f.) dat. see(inf.m.) want(imp.f.)

                                                    be(pst.f.)

       Sita wanted to see the cat.

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(38) *siitaa   billii ko   dekhnii   caahtii   thii

     Sita(f.) cat (f.) dat. see(inf.f.) want(imp.f.)

                                              be(pst.f.)

How can we account for these facts within the framework that

we have developed in the previous section ? In what

follows, we will try to account for the facts described

above. Since structural Case assignment is optional, the

infinitival verbs may choose not to assign a Case to their

objects. However, they are crucially different from perfect

participles in that perfect participles cannot assign Case

while infinitives can optionally not assign Case. Once we

assume this distinction between perfect participles and

infinitives then some of the properties of the pattern

illustrated above follow.

Thus following our analysis in the previous section, let us

assume that when the infinitival verb in the lower clause

does not assign Case to its object then the object has to

move to get a structural Case. The object argument in these

instances moves to the embedded SPEC AGRP$_o$ position and it

consequently shows agreement with the infinitive at s-

structure. In light of this, let us look at a sentence like

(30) repeated below as (39):

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(39) raam ne   roTii   khaanii   caahii

   Ram(m.) erg. bread(f.) eat(inf.f.) want(perf.pst.f.)

   Ram wanted to eat bread

The analysis that seems to yield a natural account of the
long distance agreement phenomena as shown by (39) involves
long distance NP movement in a manner similar to that of
long distance clitic climbing in Romance languages. Thus to
account for agreement in sentences like (39), we will
suggest that the lower object does not receive Case and has
to move. It moves successive cyclically through the lower
SPEC of AGRP$_o$ position to the matrix SPEC AGRo where it
receives Case. The lower AGRo does not Case mark the chain.
Thus (39) looks somewhat like (40): (We are ignoring some
details that are not directly relevant in the structure
below.[5])

(40) [$_{IP}$ raam ne [[$_{AGRPo}$ roTii$_1$ [$_{VP}$ [$_{AGRPo}$[t$_1$ [$_{VP}$ PRO

       t$_1$ t$_{v1}$] khaanii$_1$]] t$_{v2}$] t$_{agr2}$]] caahii$_2$]]

This then accounts for the fact that the lower object can
agree with both the lower verb and the matrix verb.
Agreement itself is local in both the matrix as well as the

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[5]I am assuming that PRO in the lower clause stays in its VP
internal position. The assumption that the lower AGRo being not a
Case assigner will protect PRO from being Case marked. I am also
assuming that the lower clause is a AGRP- possibly AGRPo.

lower clause. In the case of the lower clause, it is with the trace of the moved NP. There is no Case conflict because the resulting chain gets its Case from the highest AGRo and the resulting chain is therefore well formed.

Let us now account for the four properties of the long distance agreement that we noted at the beginning under this section.

(i) The optionality of agreement is explained by the optionality of Case assignment by the infinitive. If the infinitive assigns a structural Case then the object NP does not move (it does not have to move at s-structure if it has an inherent dative also).

(ii) The second property of the obligatory agreement between the lower object and the matrix verb as illustrated by (33) can be explained by obligatory movement of the lower object to the matrix SPEC of $AGRP_o$ position. However, the reason for this extended movement is not entirely clear because given our assumptions so far, the lower object can simply receive a structural Case within the lower clause (from the lower AGRo). We suggest, following Mahajan(1989), that AGRo can assign a structural Case only if it is governed by a finite I. This condition is not met in the lower clause in (33) forcing extended movement.

(iii)   The possibility of the matrix verb agreeing with its own subject as in (34) is available as in simple sentences. The lower object in (34) must therefore receive its Case from the lower verb and can therefore not move which is why it cannot agree (for most speakers) with the lower infinitive as in (35). Notice that in this case if the lower verb does not assign Case then the object will have to move. However since the upper SPEC of AGR position is occupied by the trace of the upper subject, the lower object will not be able to get Case. The problem however is with the relative acceptability of (35) by some speakers. It may be suggested that for the speakers who accept (35), the government of the lower AGRo by the matrix imperfect participle (which is a potential Case assigner) makes structural Case assignment possible in the lower SPEC AGRo (Raposo,1986). The contrast between (35) and (33) is then yielded by the fact that the perfect participle in (33) cannot assign a structural Case and therefore Case transmission is not possible.

(iv) The fact that agreement can go from the lower clause to the upper verb and not vice versa as in (28)-(29) is yielded automatically by the theory of movement that prohibits downward NP movement.

We have shown that Case assignment can diverge from

agreement in a principled way. Some other instances of where

Case assignment can diverge from agreement are discussed in

Mahajan(1989).

One of the main implications of our argument so far is that

only those objects can show agreement that are not

structurally Case marked by the verb. These include perfect

participle constructions where the verbal form fails to

assign structural Case and embedded infinitival complements

where we assume that the infinitival verbs may not assign

structural Case. Some other instances such as subjects of

small clause and raising predicated are discussed in

Mahajan(1989). They will receive an analysis similar to the

one suggested here.

2.4. Visibility Conditions:

In the previous chapter, I briefly noted that inherent and

lexical Case plays a special role in Case theory.[6] Let me

at this point make some of the assumptions clear. I am

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[6]I assume that -ko marking on objects in Hindi is a lexical
Case and not an inherent Case. Inherent Case is theta related while
lexical Case may be simply be a property of an NP. -ko marking is
clearly not theta related. The same verb can take a bare object or
a -ko object without a change in the meaning of the verb itself.
However, for the purposes of the Case theory being developed here,
inherent and lexical Case behave similarly. Both of these seem to
be able to fulfill Case requirements of a chain at s-structure (or
possibly PF). Since nothing here hinges on the distinction between
lexical Case and inherent Case, I will use lexical Case as a cover
term to include both of these.

assuming the following standard conditions:

(41)

a. All chains must have a Case.

b. Only terminal elements of a chain may bear Case. For L-chains, this terminal element must be the head of the chain; for non L-chains, the terminal element must bo the

 tail of chain.

It is clear from the discussion in the previous sections (and the previous chapter) that lexical Case marked NPs can be moved to a L-position. Given (41)b, it follows that they receive a. structural Case after movement. I suggest that lexical Case is not relevant for the Case filter at LF. However, lexical Case seems to be playing a role in grammar in that an NP bearing a lexical Case can stay in a non structural Case position at s-structure as the object of a perfect participle in (42):

(42) pulis-ne baRi caturtaa se cor-ko pakaD liyaa

 police-erg very cleverly thief-ko arrested

 The police arrested the thief very cleverly.

If the object in a construction like (42) does not have an overt -ko marking then it must show agreement, which according to our analysis implies structural Case assignment. I suggest that lexical Case plays a special role

at s-structure. This role is reflected by the visibility conditions that I formulate in (34):

(34)

s-structure visibility

Every overt NP requires a Case at s-structure

This Case can be either lexical or structural.

LF visibility

Every NP (or every A-chain with a lexical NP must have a structural Case.

This conception of visibility[7] may partly explain the correlation between 'rich' Case morphology and free word order. That is, if rich morphological Case implies rich inherent Case system then in languages with rich Case system inherent Case bearing NPs may move to a structural Case position either at s-structure or as late as LF. This may in part also explain expletive replacement in existential constructions (though expletive replacement at LF may simply be motivated by full interpretation, cf. Chomsky,1986; see also Lasnik,1989).

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[7]These visibility conditions may be due to different requirements of PF and LF. It is plausible that PF simply requires A CASE (a morphological requirement of some sort) while LF requires a structural Case (an interpretive requirement).

2.5. Case, Agreement and Scrambling:

The system that we have just outlined has some interesting consequences for the theory of scrambling. If leftward NP movement could take place to a L-position then the NP thus moved must be receiving a structural Case in its derived position. As noted earlier object NPs in Hindi can bear a lexical Case -ko. This marking encodes specificity.[8] Since perfect participle in Hindi do not assign structural Case, the objects of such verbs have two options at s-structure to fulfill the visibility conditions outlined above. They may either bear -ko or they may move to a structural Case position, i.e., SPEC AGRo. If they move to SPEC AGRo, they can bind a pronoun or a reflexive that they c-command as shown in (44)-(45) (see the previous chapter for details):

(44)   kOn saa laRkaa$_i$ uskii$_i$ maaN-ne   ghar se nikaal diyaa

       which boy   his mother-erg. home from threw out-perf

       Which boy did his mother throw out of the house?

(45)   ?kOn saa laRkaa$_i$ apnii$_i$ maaN-ne ghar se nikaal diyaa

       which boy self's mother-erg. home from threw out-perf

       Which boy did self's mother throw out of the house?

If the object bears -ko, then it can be fronted. Once again

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[8]This kind of Case marking is found in many languages with similar semantic effects. See Enc(1990) for some of the issues involved.

it can bind from the fronted position.

(46) kis-ko$_i$ uskii$_i$ maaN-ne   ghar se nikaal diyaa

      who-ko his mother-erg. home from threw out-perf

      Who did his mother throw out of the house?

(47) ?kis-ko$_i$ apnii$_i$ maaN-ne   ghar se nikaal diyaa

      who-ko self's mother-erg. home from threw out-perf

      Who did self's mother throw out of the house?

This is explained readily if the lexical Case marked object
has been moved to a structural Case position, which being an
L-position can enter binding theory.

What is interesting is that if the verb is a structural Case
assigner, its object when fronted fails to show binding
properties. Consider sentences (48) and (49) below which
contrast with sentences in (44)-(45) and (46)-(47) above:

(48)*/???kOn saa laRkaa$_i$ uskii$_i$ maaN ghar se nikaal degii

          which boy   his mother   home from throw out(fut)

          Which boy will his mother throw out of the house?

(49)*/???kOn saa laRkaa$_i$ apnii$_i$ maaN ghar se nikaal degii

          which boy   self's mother   home from throw out(fut)

          Which boy will self's mother throw out of the house?

The illformedness of (48) and (49) can be explained if we assume the verb assigns Case to its object in these sentences and therefore the object cannot move to an L-position, i.e., can move only to a non L-position from which it cannot bind a pronoun or a reflexive. This move is, however, problematic given our proposal the structural Case assignment is optional. To correctly rule out (48) and (49), we require structural Case assignment by the verb to be obligatory. Note that the fronted objects in (46)-(47) have the option of bearing a -ko ending. If they bear -ko then they can bind as shown in (50)-(51):

(50) kOn se laRke-ko$_i$ uskii$_i$ maaN ghar se nikaal degii

    which boy   his mother home from throw out(fut.)

    Which boy will his mother throw out of the house?

(51)? kOn se laRke-ko$_i$ apnii$_i$ maaN ghar se nikaal degii

    which boy   self's mother home from throw out (fut.)

    Which boy will self's mother throw out of the house?

(50)-(51) suggest that -ko marked objects do not receive a structural Case from the verb and can therefore move to an L-position from which they can bind. In what follows, I will suggest an account of the contrast between (44)-(45) and (48)-(49) and between (48)-(49) and (50)-(51).

2.6. Agreement and Specificity:

As noted above, -ko marking on objects implies that the object is specific (see Enc(1990) and references cited therein for relevant notions involved in characterizing specificity). Interestingly enough, agreeing object in Hindi must also be interpreted similarly, i.e., as specific. This contrasts sharply to objects that do not bear -ko and do not show agreement. This is illustrated by the following paradigm:

(52) siitaa-ne laRkaa   dekhaa (object agreement)

      Sita-erg   boy-m   saw-m

      Sita saw the boy.

(53) siitaa-ne laRkii-ko   dekhaa (no object agreement)

      Sita-erg   girl-ko -f.   saw-m

      Sita saw the boy.

(54) siitaa laRkaa   dekh rahii hE (no object agreement)

      Sita-erg boy-m   see-prog-be-f

      Sita is looking for a (suitable) boy (to marry).

As the translation of (54) suggests, the object must necessarily be interpreted as nonspecific in contrast to (52)-(53). Recall from the discussion above that only

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sentences like (52)-(53) permit leftward NP fronting resulting in the possibility of pronominal and reflexive binding. Object fronting in sentences like (54) cannot result in pronominal/reflexive binding possibilities. This suggests a correlation between structural Case assignment, binding and specificity. We have suggested that the object in sentences like (54) is structurally Case marked by the verb. This explains why it cannot move to a L-position explaining its binding properties and the fact that it cannot show agreement. Given our discussion so far it now correlates to another property - NPs that are structurally Case marked internal to the VP must be interpreted as nonspecific. Our discussion also implies that specific NPs must not receive a structural Case within the VP, must receive a structural Case from the AGR system and therefore agreeing NPs are always interpreted as specific. This property is not unique to Hindi. Koopman(1988) notices similar effects in Dutch and Moltmann(1990) has noted similar phenomena in German.

This observation interacts with several existing proposals about Case theory and specificity/definiteness effects, in particular proposals by Safir(1985), Belletti(1988) and Lasnik(1989). Our discussion suggests that the Case responsible for nonspecificity is not an inherent Case as Belletti(1988) suggests. It also indicates that

Lasnik's(1989) observation about the partitive Case being structural seems to be essentially correct even though our discussion here has focussed more on the nature of the Case assigned by Case assigners like imperfect participles and future forms of the verb in Hindi. Hindi perfect participles simply fail to assign any structural Case, forcing their objects to move to a VP external Case position and therefore being interpreted as specific.

Before concluding this section, I would like to suggest an account for these specificity effects. I suggest that specificity is correlated to structural Case assignment by AGR. AGR has pronominal features (cf. Rizzi,1982,1986). I suggest that the pronominal features of AGR are responsible for specificity effects. An NP coindexed with AGR must be specific. Non-specific object NPs, on the other hand, must not be coindexed with AGR, i.e., they can't receive a structural Case from AGR. Therefore, they must receive a structural Case in some other fashion. I have suggested that verbs can assign a structural Case and therefore the only way for a non specific object to receive a Case is to get it from the verb. In Hindi sentences like (48)-(49) the object must receive their structural Case from the verb.[9]

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[9]This does not imply that structural case assignment is obligatory. If the verb does not assign a structural Case to the object in (48)-(49), the resulting output will violate the s-structure visibility requirement. This is because the objects being non-specific cannot be Case marked by the AGR. Under this view, the

This view of agreement and specificity has a variety of consequences particularly relating to Rizzi's (1990) notion of a referential theta role and specificity effects observed in clitic left dislocation in Italian (cf. Cinque,1990) and clitic doubling in Romanian (cf. Dobrovie-Sorin,1990). I will leave these issues unexplored here (see Mahajan,1990 for some developments of this proposal).

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only well formed representation of (48)-(49) would be in which they receive a structural Case from the verb. This implies that these objects cannot move to another structural Case position, i.e., they can only move to an adjoined position yielding WCO effects.

CHAPTER THREE

AGAINST WH-MOVEMENT IN HINDI

3.0 INTRODUCTION:

Since Huang(1982) and Lasnik and Saito(1984) it has been
assumed that natural languages divide into two groups: the
ones that have syntactic wh-movement and the ones that do
not. English is supposed to represent the first type and
Chinese, Japanese and Korean have been argued to belong to
the second category. The formulations of wh-movement
parameters (cf. Lasnik and Saito,1984) is based on such a
distinction. However, as is well known, languages do not
clearly divide into +/- wh-movement types at all levels of
representation. Thus, while it appears that Chinese and
Japanese do not have any s-structure wh-movement English
does have LF wh-movement along with s-structure wh-movement
(cf. Pesetsky,1982; Huang,1982; Lasnik and Saito,1984 etc.).
Several studies have shown that LF wh-movement seem to mimic
s-structure wh-movement in several important respects.
Huang(1982) argued convincingly that Chinese LF wh-movement
has several properties that are akin to English s-structure
movement. One of the respects in which LF wh-movement (both
in Chinese and in English) differs from s-structure wh-
movement is with respect to the Subjacency condition.
Huang(1982) and Lasnik and Saito(1984,forthcoming) argue

that subjacency does not apply to LF movement. On the other
hand, several other studies such that of Nishigauchi(1986)
and Pesetsky(1987) have argued that subjacency does play a
role in constraing LF wh-movement. The role of ECP and
subjacency in constraining wh-movement have played an
important role in the development of the theory. While some
studies assume that ECP is a condition on representation,
the status of subjacency has been under debate. The debate
centers around the question as to whether subjacency is a
condition on movement or on representations. Several
attempts have been made to reduce subjacency and ECP to a
unified condition.

In this chapter, I intend to address some of these issues. I
will provide data from Hindi to suggest certain
modifications about the theory of wh-questions.

Hindi presents an interesting case study because it does not
fit the +/- wh-movement typology very neatly. The language
uses three interacting strategies to form wh-questions. One
of these strategies does not involve s-structure movement of
the wh-phrase. The other strategy involves movement of the
wh-phrase but this movement is not similar to the one found
in English, i.e., it does not involve moving the wh-phrases
into SPEC CP at s-structure. The third strategy involves use
of a question particle to indicate the scope of the wh-

phrase which remains in-situ within its own clause. I will
describe these facts in detail and on the basis of these
facts I will show how Hindi does not fit into the current
conception about the wh-movement parameter. On the basis of
this, I will argue that the parameter the way it has been
envisaged in works like Lasnik and Saito(1984) needs to be
rethought. I will suggest a simplification of the parameter
that will account for the cross linguistic variation found
in wh-movement.

I will argue that Hindi does not have any wh-movement to
SPEC CP at any level of representation. The apparent cases
of long distance wh-movement are forced for some other
reasons and the landing site for such movement is not SPEC
CP. I will suggest that wh-phrases behave like clause bound
quantifiers at LF.[1] This implies that Hindi forms
constituent questions by QR at LF. In its weaker form, the
claim made in this study is that Hindi does not have any wh-
movement whatsoever. Wh-phrases simply QR at LF. This
movement is motivated by selectional considerations and is
supported by certain scope interaction. Since Hindi wh-
phrases behave like other quantifiers in undergoing QR at
LF, there is no motivation for the claim that Hindi does
have wh-movement at LF. This claim has a variety of

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[1]This suggestion is based on some remarks in Aoun et al(1980)
and Huang(1980). See also Kim(1989) where it is claimed that Korean
and Japanese wh-phrases are quantifiers.

consequences and I will examine some of them.

A stronger claim would be to argue that the traditional wh-in-situ languages like Chinese, Japanese and Korean are like Hindi in this respect. If we assume, following Kim(1989), that Korean and Japanese wh-phrases are simply quantifiers and that they undergo QR at LF, then this stronger claim becomes tenable. In this study, I will modify this idea claiming that even wide scope questions in wh-in-situ constructions are formed without long wh-movement. On the basis of this, I will argue that there is no long distance movement at LF in Hindi, Korean, Japanese and (possibly) Chinese. There are several crucial similarities and differences between Japanese/Korean and Hindi wh-questions. These similarities and differences will help us understand the nature of wide scope questions in these languages and direct us toward a proper formulation of the wh-movement parameter.

I will examine LF movement of wh-phrases in English and suggest that even English does not have wh-movement at LF and that English wh-in-situ also simply QR to adjoin to its minimal IP. Long scope for English embedded wh-in-situ derives from independently justifiable mechanisms that I elaborate following some proposals in Fiengo et al (1988).

On the basis of this I will argue that the syntax of LF is overly simple. The only operation that affects NPs is ADJUNCTION. Wh-in-situ at s-structure simply QRs to adjoin to the nearest IP. Its scope is determined by a simple indexing mechanism that is sensitive to government relations (that employ notions such as barriers). This move suggests that the syntax of LF may not have any substitution rules. Furthermore LF movement under this view will turn out to be a highly local rule.[2]

This ideas has an immediate consequences for the formulation of the wh-movement parameter. Natural languages do divide into two simple groups: the ones that have s-structure wh-movement and the one that do not. If a language does not have s-structure wh-movement, it simply does not have wh-movement at any level of representation. At LF, all languages behave identically. Wh-in-situ simply QRs at LF in all languages.

Another major consequence of this approach concerns the subjacency condition. As noted above, several studies have argued that subjacency is not applicable to LF movement. This fact (if it turns out to be correct) is yielded automatically under the approach that I have just outlined.

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[2] I ignore the details of the mechanism of LF expletive replacement (cf. Chomsky, 1986a). I will assume that this rule actually involves adjunction to the expletive at LF.

There is not long distance movement at LF. LF QR is a simple

one step movement of adjunction to IP. Since this movement

will never cross a barrier, the debate about the

inapplicability of subjacency at LF becomes meaningless. LF

movement will never be subject to subjacency.[3]

Apart from these results, the approach outlined in this

study captures several facts of wh-question formation in

Hindi in a unified manner. The strong character of complex

NP violations is explained as a selectional violation.

Certain adjunct-argument asymmetries are also explained. The

lack of superiority at LF is explained as are many other

facets of wh-questions in Hindi which had remained

unexplained in previous studies.

The approach to wh-movement suggested in this chapter will

also support a derivational approach to syntax rather than a

representational one. I will show that certain facts in

Hindi require a derivational treatment.

3.1 Simplex Clauses: Wh-in-situ

3.1.1. Simple questions:

It is widely assumed that Hindi does not have any wh-

movement in simplex clauses (see Gurtu,1985;Davison,1986;

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[3]See however Nishigauchi(1986);Pesetsky(1986) and Fiengo et
al(1988) for the details of the issues involved.

Mahajan,1987; Bains,1988). As described in Chapter One, wh-phrases simply stay in-situ. They may however scramble to a sentence initial position but since it can bind from that position, that position cannot be SPEC CP (see Chapter 1 for details). Thus, while (1) and (2) below shows the unmarked word order, other word orders as shown in (3) and (4) are also possible.

(1)   raam-ne kyaa ciiz   khaaii ?
        Ram(SUB) what thing(DO) ate
        What did Ram eat?

(2)   raam-ne kis-ko ek kitaab   dii ?
        Ram(SUB) who(IO) a book(DO) gave
        Who did Ram give a book to?

(3) a. kyaa ciiz   raam-ne khaaii ? (DO S V)
       what thing(DO) Ram(SUB) ate

    b. raam-ne khaaii kyaa ciiz ? (S V DO)

    c. kyaa ciiz khaaii raam-ne ? (DO V S)

    d. khaaii kyaa ciiz raam-ne ? (V DO S)

    e. khaaii raam-ne kyaa ciiz ? (V S DO)

(4) a. kis-ko raam-ne ek kitaab   dii? (IO S DO V)
       who(IO) Ram(SUB) a book(DO) gave

    b. raam-ne ek kitaab kis-ko dii ? (S DO IO V)

    c. kis-ko ek kitaab raam-ne dii ? (IO DO S V)

    d. kis-ko raam-ne dii ek kitaab ? (IO S V DO)

    e. kis-ko ek kitaab dii raam-ne ? (IO DO V S)

On the basis of this and the discussion in Chapter 1, I

will assume that wh-phrases may in fact be in an L-related
position at s-structure (or between d-structure and s-
structure). This L-related position can either be the d-
structure position where the wh-phrase originates and
receives its theta role or be some other position to which
the wh-phrase has been moved by argument shift. At LF, wh-
phrases in an L_related position must move to a non L-
related position from which they can take scope (and also
satisfy the selectional restrictions).

Following Lasnik and Saito(forthcoming) and Frampton(1990),
I am going to assume that IP is a barrier. Given this
assumption, a wh-in-situ in the following configuration must
move at LF:[4]

(5)

```
              CP
            /    \
         /          \
      SPEC            C'
                    /    \
                 /          \
              IP              C
            /    \           +wh
         /          \
      wh-phrase
```
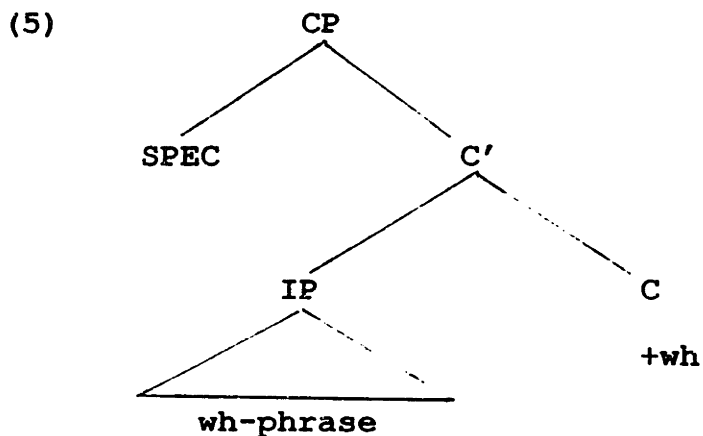
The movement of the wh-phrase is forced because the Q

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[4]Since I will not be directly concerned with IP internal
structures, for the ease of exposition I will use label IP to mean
AGRPs.

morpheme in C does not govern the wh-phrase, IP being a
barrier. I suggest that at LF the wh-phrase simply QRs to
adjoin to the first dominating IP yielding the following
configuration.

(6)
```
                    CP
                  /    \
             SPEC       C'
                      /    \
                   IP       C
                 /    \
          wh-phrase    IP
                      /\
                     /..\
                    /____\
                     twh
```
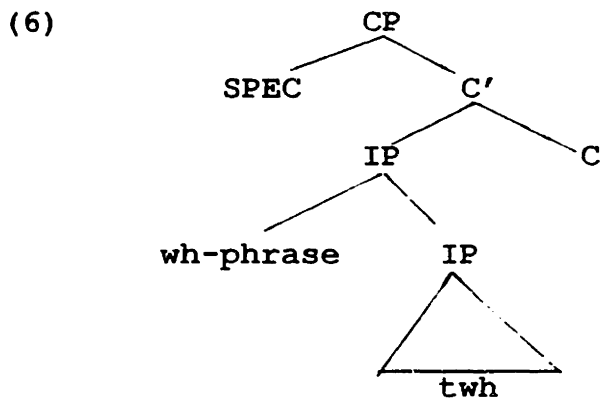
In this configuration, Q governs the wh-phrase since the wh-
phrase is no longer included in the IP and the upper IP
segment is not a barrier (see Chomsky,1986b for relevant
definitions; I depart here from Lasnik and
Saito,forthcoming, where a even a segment of the barrier is
considered a barrier). Recall that I am assuming that VP
itself is not a barrier and therefore adjunction to VP is
not required. The question of whether or not VP is a barrier
hinges on the status of `rigid minimality' as elaborated in
Barriers. As suggested in Chapter 1 and 2, given the
development of the theory along the lines suggested by
Chomsky(1989 class lectures), if the notion of being L-
related is taken seriously then IP internal projection
system does not have any inherent barriers (these will

include VP and AGRPs). Furthermore, as noted in Chapters 1 and 2, there seems to be empirical evidence that adjunction to VP may not be possible (recall the reconstruction facts). I suggested that adjunction to VP may be prohibited in Hindi and part of the motivation for that was that VP behaves like an argument for movement purposes. If adjunction to arguments is prohibited (as in Barriers) then adjunction to VP would not be possible on the same grounds. The question of rigid minimality remains. It is possible that V to AGR (cf. Chapter 2) in syntax has the effect of nullifying effect on V acting as a minimality inducer.

An important issue arises concerning representations like (5) and (6). Since I am suggesting that wh-movement at LF is no to SPEC CP but an adjunction to IP, the question arises whether or not SPEC CP is present in Hindi clause structure. Fukui(1986) argues that SPECs of functional projections are in fact optional (see also Fukui and Speas,1986) and that they may be missing due to a parametric choice. I have assumed so far that specifiers of IP internal functional projections are present in Hindi. The presence of SPEC CP is however appears to be unmotivated. I will assume in this study that SPEC CP is not present in Hindi clause structure. This may in fact be the reason why Hindi does not have s-structure wh-movement and as Fukui(1986) suggests, this may be the locus of the wh-movement parameter.

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Before going on to the next subsection, let me note an additional point. As noted in Chapter 1, arguments can also be moved by an adjunction rule (the other subpart of scrambling). It is in principle possible to adjoin a wh-phrase to IP at s-structure. Some evidence that this possibility is indeed realized comes from examples such as the following:

(7) apnii kOn sii kitaab   raam-ne pheNk dii ?
    self's which book   Ram-erg. threw away
    Which of self's book did Ram throw away?

Since the direct object containing a reflexive has been fronted in this example, the fronted phrase must be in a non L-related position to be able to reconstruct for reflexive binding (see also Chapter 1 for a discussion of reconstruction effects for reflexive binding in Hindi). Under the assumptions that we are going by, the fronted direct object can only be adjoined to IP at s-structure. Given this, this direct object is already governed by the Q morpheme and therefore does not have to QR (the syntactic (adjunction) scrambling performed the function of QR in syntax). It is possible that LF interpretive principles further require the wh-phrase to QR out of the NP it is contained in. That will not be a problem since the NP is already in a non L-related position from which further extraction is possible (cf. Fiengo et al, 1989).

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3.1.2. Multiple questions:

Wh-phrases do not have to move in multiple questions in Hindi. Word order variation is possible. The following examples illustrate the phenomena:

(8a)   kis-ne kis-ko dekhaa
        who   whom   saw
        Who saw whom?

  b. kis-ko kis-ne dekhaa (=11a)

(9)a kis-ne kis-ko kyaa diyaa
      who   whom   what gave
      Who gave what to whom?

  b. kis-ko kis-ne kyaa diyaa

  c. kyaa kis-ne kis-ko diyaa

  d. kis-ne kyaa kis-ko diyaa

  e. kyaa kis-ko kis-ne diyaa

  f. kis-ko kyaa kis-ne diyaa

Multiple questions with adjuncts are also possible:

(10)a. kon kEse kyaa karegaa
       who how what do-fut.
       Who will do what how?

  b. kyaa Kon Kese karegaa

  c. kon kyaa Kese karegaa

(11)a. kis-ne kis-ko kyoN maaraa
       who   whom   why hit
       Who hit whom why?

  b. kis-ko kis-ne kyoN maaraa

  c. kis-ne kyoN kis-ko maaraa

Double adjunct questions are also possible:

(12)   kis-ne kese raam-ko kab maaraa?
       who   how   Ram   when hit
       How did who hit Ram when?

The treatment of multiple questions, especially the ones involving multiple adjuncts would be problematic if we assumed that wh-phrases move to SPEC CP at LF. Such derivations would yield ECP violations under theories such as Lasnik and Saito(1984). Thus (11) and (12) should be ruled out under such an approach at par with (13) and (14) which are ECP violations:

(13) *Who came why?

(14) *Why did who come?

Even assuming that subjects are lexically governed in Hindi (and thus immune to ECP, an assumption that we will not adopt), (12) would be a serious problem. Given that Hindi shows no such ECP (and superiority effects) in simple sentences, an approach such that of Lasnik and Saito(1984) becomes untenable for a language like Hindi. On the other hand, the approach that we outlined above, i.e., an approach under which wh-phrases simply QR to adjoin to IP at LF, yields the correct results. All wh-phrases must QR at LF to adjoin to IP. All of these phrases are thus not included by the IP and are therefore governed by the Q morpheme as shown schematically in (15):

(15)

```
                              C'
                           ___/ \
                        __/       \
                  IP              C
               __/  \            +wh
            __/      \
         wh1          IP
                   __/  \
                __/      \
             wh2          IP
                       __/|\__
                      /   |    \
                   twh₁  twh₂   V
```

(15)

$$
\begin{array}{c}
\text{C'} \\
\text{IP} \quad \text{C} \\
\text{+wh} \\
\text{wh1} \quad \text{IP} \\
\text{wh2} \quad \text{IP} \\
\text{twh}_1 \quad \text{twh}_2 \quad \text{V}
\end{array}
$$
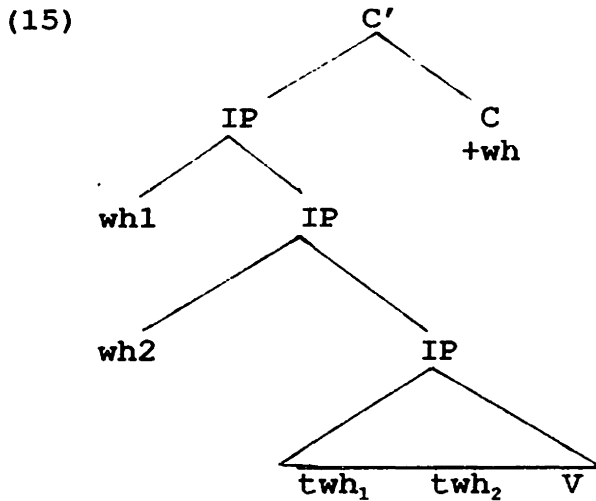
All the IP adjoined wh-phrases also govern their respective traces since there are no intervening barriers, the barrierhood of IP having been voided by adjunction. This approach therefore has a natural consequence in not expecting any ECP (and superiority violations) for LF wh-movement for Hindi (and may be in general, see later discussion), an expectation that is fulfilled.

Note that under multiple adjunction approach that we are developing for multiple questions, the order of wh-phrases at LF would not matter. In fact, under a segment type approach to adjunction (cf. May,1985; Chomsky,1986b), all adjoined phrases in (15) are hierarchically at par. Some of the possible LFs of (12) would be:

(16) [kis-ne₁ [kEse₂ [kab₃ [t₁ t₂ raam-ko t₃ maaraa]]]

(17) [kEse₂ [kis-ne₁ [kab₃ [t₁ t₂ raam-ko t₃ maaraa]]]

(18) [kEse₂ [kab₃ [kis-ne₁ [t₁ t₂ raam-ko t₃ maaraa]]]

Since none of these representations violate ECP, it can be suggested IP adjoined wh-phrases in representations such as (16)-(18) do not give rise to relativized minimality effects. This is in fact expected under Rizzi's(1990) approach since none of the wh-phrases is in an A-bar specifier position. However later we will suggest that relativized minimality must in fact refer to IP adjoined wh-phrases and that representations such as (16)-(18) should be independently be allowed to good. This would then support the segment type approach to barriers.

3.1.3. Some verb-wh adjacency effects in Hindi:

Before we go on complex sentences, we would like to point out a potential problem for the approach that we are suggesting. The problem arises from the fact that in Hindi if there is one wh-phrase in the sentence, this wh-phrase has the tendency of being next to the verb (this tendency was independently noted in Davison,1987 and Mahajan,1987). This tendency is rather weak. Thus while (19a) is perfect, its counterpart (19b) is preferred (we indicate this preference by using a symbol + to indicate that (19)b is preferred; this symbol should however be not interpreted as familiar * or ? which are indicators of grammaticality judgements).

(19)a.   kis-ne raam-ko maaraa
         who   Ram   hit
         Who hit Ram?

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b. +raam-ko kis-ne maaraa (=16a)

Not much attention has been paid to such adjacency effects in Hindi though many other languages exhibit similar adjacency effects. Such effects are quite strong in Hungarian (cf. Horvarth,1985; Maracz,1989) among other languages. Let us briefly consider the explanation for such an effect as suggested by Maracz(1989). It is suggested that this adjacency effect is in fact a V2 effect, i.e., the wh-phrase moves into SPEC CP and the verb moves into C as shown in (20):

(20)

```
                        CP
                       /  \
                      /    \
                 SPEC       C'
                            / \
              wh-phrase    /   \
                  ↑       C     IP
                          |    /\
                          V   /  \
                          ↑  /____\
```
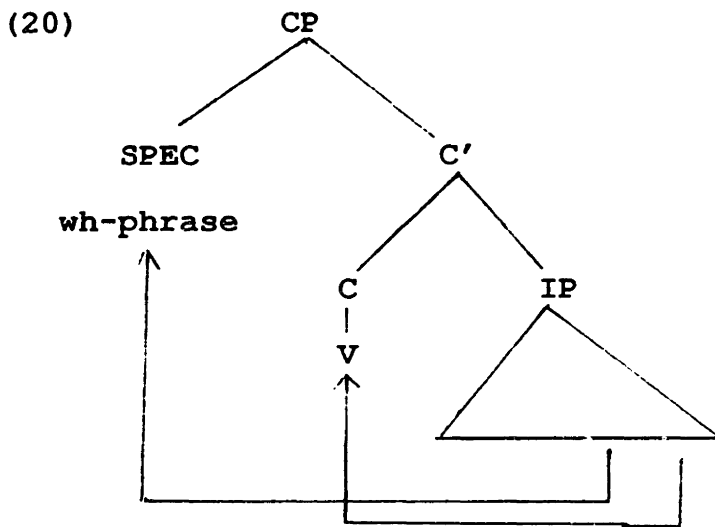
Could Hindi adjacency effect be also be derivable as in Hungarian? Note that if that turns out to be the case then Hindi would no longer be a language without s-structure wh-movement. In fact it would be then classified with English and Hungarian as a wh-movement language. There are, however,

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reasons to believe that Hindi is unlike Hungarian in this respect. I outline several reasons why the adjacency effects in Hindi could not be derived under a V2 approach.

3.1.3.1. First of all, the tendency is very weak in Hindi. Other NPs and adverbials can intervene between the wh-phrase and the verb. A V2 approach would imply that these elements are in fact adjoined to C'. Since even VP adverbs can intervene between the wh-phrase and the verb as in (21), the V2 approach appears rather dubious.

(21) kis-ne dhiire dhiire kaam kiyaa
     who   slowly   work did
     Who worked slowly?

3.1.3.2. In chapter 1, I argued that the surface order of NPs reflects a hierarchical structuring. Furthermore, this hierarchical ordering has consequences for binding theory. If wh-phrases are in a pre C position at s-structure in Hindi, it is not clear why their order with respect to other constituents that precede them (and therefore are in a non L-related position necessarily) should play any role in binding theory. To take simple case, under a V2 approach (22a) and (22b) should have the same status, which they do not. Under a V2 approach both the wh-phrase and the pronoun containing subject are in pre C positions and in those positions the pronominal binding should not be affected (i.e., if these phrases are in non L-related positions and

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therefore allowed to reconstruct, then no contrast in
pronominal binding should be expected).

(22) a. kis-ko$_i$ uskii$_i$ maaN-ne   ghar se nikaal diyaa
          who (DO) his mother-erg. home from threw out
          Who$_i$ did his$_i$ mother throw out of the house?

     b.*uskii$_i$ maaN-ne kis-ko$_i$ ghar se nikaal diyaa
          (22a)

Similar arguments can be given for reflexive binding. If the
V2 approach was to be strengthened to yield the pronominal
binding effects such as in (22), then we would have to
stipulate that the pre C order mimic the IP internal
hierarchical organization of the NPs prior to their movement
to pre C positions. This step, however, totally undermines
the force of the V2 approach.

3.1.3.3. V2 effects normally involve moving the highermost
(finite) verb or auxiliary to C. In Hindi, however, the
element that likes to be close to the wh-phrase is not the
highermost auxiliary but the main verb itself.

(23) a. raam-ko kis-ne maaraa thaa
          Ram (DO) who-erg. hit be-pst
          Who had hit Ram?

     b.?? raam-ko kis-ne thaa maaraa

To derive the effect that the main verb should be next to
the wh-phrase, we will have to move the main verb over the
auxiliary into C which should be an ECP (head movement

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constraint) violation. Alternatively, we could move the verb

to auxiliary and then move the whole unit to C. Under this

approach, the auxiliary is a syntactic affix. However, there

is evidence that in Hindi, the verb and the auxiliary do not

form a constituent at s-structure (see Chapter 3).

Furthermore, there is evidence that indicates that the verb

and the wh-phrase in a sentence like (24) below form a

constituent that does not include the auxiliary.

(24) raam-ne kyaa khaayaa thaa
     Ram-erg. what eat   be-pst.
     What did Ram eat?

The wh-object and the main verb can be conjoined leaving out
the

auxiliary as shown in (25):

(25)a. raam-ne kyaa khaayaa Or kyaa piiyaa thaa
       Ram-erg. what eat   and what drink be-pst

   b. raam kyaa khaa Or kyaa pii rahaa thaa
      Ram what eat   and what drink prog. be-pst

This shows that the auxiliary and the verb do not form a

syntactic constituent and therefore under a V2 approach, we

should expect the auxiliary to move to C rather than the

main verb, which is not the case providing further evidence

against a V2 analysis to adjacency effects.

3.1.3.4. Wh-phrases are not alone in preferring to be close

to the verb. Quantifiers like kisi , koi 'someone' and sab

'all/everyone' and indefinites also like to be close to the

verb. A V2 approach to the adjacency effects would have to

move the quantifiers and indefinites to the position

occupied by wh-phrases (SPEC CP) at s-structure. Since,

there is no other evidence that quantifiers undergo movement

to SPEC CP at s-structure (in any language), the adjacency

effects for quantifiers would have to be handled in a

different manner from that for wh-phrases. This would miss

the generalization about the adjacency effects. Furthermore,

wh-phrases and quantifiers can co-occur in a sentence. In

such cases, wh-phrases take precedence over quantifiers in

being next to the verb. It is not clear how a V2 approach

would handle such interactions.

3.1.3.5 Given these arguments, and given the fact that the

adjacency requirements in Hindi are not at all strong, I

suggest that a V2 approach is not motivated in Hindi. We can

therefore maintain our claim that Hindi does not have any s-

structure wh-movement to SPEC CP. This leaves the issues of

adjacency effects open.[1]

3.2. Wh-phrases in subordinate clauses

3.2.1 Before going on to embedded questions, I would like to

outline some aspects of the syntax of sentential complements

relevant to our concerns here. Hindi is a head final

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[1]Another possibility is that lexical government is required
for wh-traces (and quantifiers) at LF and the verb has to be next
to the wh-phrase (/quantifier) to be able to govern the trace left
behind by the LF movement. Auxiliaries do not count as lexical
governors.

language. However, finite complement clauses are
obligatorily extraposed to the right (see Subbarao,1985 and
references cited therein for details). I will assume,
following Mahajan (1987) that finite complement clauses of
verbs are right adjoined to the IP. The reason for this is
that the extraposed clauses appear to the right of the final
auxiliary as shown in (26).

(26) a. raam-ne   socaa thaa   ki   mohan hoSiyaar hE
       Ram-erg   thought be(pst) that Mohan smart   is
       (lit.) Ram had thought that Mohan is smart

    b. raam   kah rahaa thaa   ki   siitaa   aaegii
       Ram   say prog. be(pst) that Sita   will come
       Ram was saying that Sita will come.

I will assume that a sentence like (26a) has an s-structure
like (27).

(27)   IP
                    _____/_____
              _____/   \
            IP   C'
           /\   /\
          / \   / \
         /   \   /   \
        /   \   /   \
       /_____\   /_____\
      raam t_cp kah rahaa thaa   ki siitaa aayegii
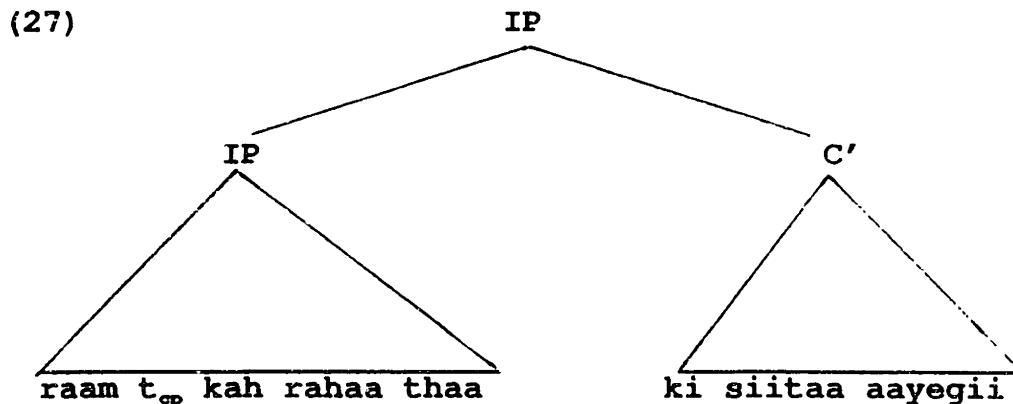
3.2.1. An outline of various strategies for wh-phrases in embedded clauses:

In this subsection, I will outline very briefly some major
aspects of the syntax of wh-phrases in complement clauses.

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This outline is very sketchy and is intended just to give the reader a general picture.

3.2.2.1. Clauses subcategorized by verbs such as wonder and ask require the presence of a wh-phrase in the complement clause. However, this wh-phrase is in-situ. In this respect Hindi is like Chinese and Japanese.

(28) a.   raam-ne   puuchaa   [ki   mohan-ne   kis-ko   dekhaa]
         Ram-erg   asked   Mohan-erg   who   saw
         Ram asked who Mohan saw?

    b.   raam-ne   puuchaa   [ki   kis-ne   kis-ko   dekhaa]
         Ram-erg   asked   who-erg   who   saw
         Ram asked who saw who?

The complement clause is just like a simple clause question as described in the previous section.

3.2.2.2. Clauses subcategorized by verbs that do not take question complements, like think, say, do not allow a wh-phrase in them unless the matrix clause contains a kyaa particle.. The sentences in (29) are ungrammatical:1[2]

(29) a.   *raam-ne   kahaa   ki   kOn   aayaa hE
         Ram-erg   said   who   has come
         Who did Ram say has come?

    b.   *raam-ne   socaa   ki   kOn   aayaa hE
         Ram-erg   thought   who   has come
         Who did Ram think has come?

---

[2]socaa in Hindi is ambiguous between wonder and think. The glosses that I give indicate the intended reading.

c. *raam-ne   socaa ki   kis-ne   kis-ko   dekhaa
   Ram-erg   thought   who-erg   who   saw
   Who did Ram think saw who?

In this respect then, Hindi is unlike Chinese and Japanese
which allow sentences like (29) to be interpreted as wide
scope questions. To form wide scope questions, Hindi employs
two strategies. The first one uses a question particle in
the clause in which the wh-phrase takes scope. The wh-phrase
itself stays in-situ.

(30)a.   raam-ne   kyaa socaa ki   kOn   aayaa HE
          Ram-erg   KYAA thought   who   has come
          Who did Ram think had come?

    b.   raam-ne   kyaa socaa ki   kis-ne   kis-ko   maaraa
          Ram-erg   KYAA thought   who-erg   who   hit
          Who did Ram think hit who?

The question particle _kyaa_ precedes the matrix verb. The wh-
phrase(s) contained in the embedded clause take matrix
scope.

The second strategy involves moving the wh-phrase to the
matrix clause at s-structure as shown in (31) which are
interpreted as wide scope questions.

(31)a.   kOn   raam-ne   kahaa   ki   aayaa hE
          who   Ram-erg   said   has come
          Who did Ram say has come?

    b.   kis-ko   raam-ne   socaa ki   mohan-ne ___   maaraa thaa
          who   Ram-erg   thought   Mohan-erg   hit
          Who did Ram think Mohan hit?

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Under this strategy, all wh-phrases, if there are more than one, must move out of the non question complement as shown in (32):

(32) a. *raam-ne   socaa   ki   kOn   kis-ko   maaregaa
         Ram-erg   thought   who   whom   will hit
         Who did Ram think will hit who?

     b. *kOn   raam-ne   socaa   ki   kis-ko   maaregaa
         who   Ram-erg   thought   who   will hit
         Who did Ram think will hit who?

     c. kOn kis-ko   raam-ne   socaa   ki   ___   ___   maaregaa
        who whom   Ram-erg   thought   will hit
        Who did Ram think hit who?

The wh-phrases moved under this strategy need not appear in sentence initial position , i.e., they may be scrambled with respect to the matrix clause elements except for the fact that they may not follow the verb. We will describe this strategy in detail in later sections.

We summarize the wh-strategies in Hindi below:

(i) no wh-movement in simple clauses

(ii) No wh-movement in embedded questions

(iii) wh-phrases not permitted in embedded non-question complements unless a question particle is present in the matrix clause (and all intermediate non-question complement clauses).

(iv) If the question particle is not present , then the wh-phrase must move out of a non-question complement.

In the sections that follow, we will describe each of the
strategies in detail noting their significance for the
approach that we outlined in the first section.

3.3 Embedded Questions

In clauses subcategorized by verbs taking question
complements, wh-phrases stay in-situ as shown in (33).

(33) a. raam-ne   mohan-se   puuchaa ki kOn   aayaa hE
        Ram-erg   Mohan   asked   who   has come
        Ram asked Mohan who has come?

     b. raam-ne mohan-se puuchaa ki siitaa-ne kis-ko dekhaa
        Ram-erg Mohan   asked   Sita -erg who   saw
        Ram asked Mohan who Sita saw.

Multiple questions are also formed with wh-in-situ.

(34) a. raam-ne mohan-se puuchaa ki kis-ne   kis-ko   maaraa
        Ram-erg Mohan   asked   who-erg   who   hit
        Ram asked Mohan who hit who.

     b. raam-ne mohan-se puuchaa ki siitaa-ne kis-ko kyaa diyaa
        Ram-erg Mohan   asked   Sita- erg who   what gave
        Ram asked Mohan what Sita gave to who.

As with simple questions, there are no argument/adjunct
asymmetries in embedded questions and double adjunct wh-
phrases are also possible.

35) a. raam-ne mohan-se puuchaa ki kis-ne gaaRii kEse Thiik kii
        Ram-erg Mohan   asked   who-erg car   how fixed
        Ram asked Mohan who fixed the car how

    b. raam-ne mohan-se puuchaa ki kis-ne kyaa kEse Thiik kiyaa
        Ram-erg Mohan   asked   who-erg what how   fixed
        Ram asked Mohan who fixed what how.

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c.raam-ne mohan-se puuchaa ki kis-ne   kyON   gaaRii kEse
  Ram-erg Mohan   asked   who-erg why   car   how
  Thiik kii
  fixed
  Ram asked Mohan who why how fixed the car.

As indicated by the glosses , in Hindi a wh-phrase in an
embedded question can only take scope over the embedded
clause. Thus (34a) cannot mean (36a) or (36b).

(36)a. For which person x, Ram asked Mohan, for which person
       y, y hit x.

    b. For which person y, Ram asked Mohan, for which person
       x, y hit x.

Similar restriction applies to other sentences in (34) and
(35). The conclusion is that unlike the description for
Chinese in Huang (1982), Hindi wh-in-situ in multiple
embedded questions may not take matrix scope . Since matrix
scope is not possible, Chinese type ECP effects for adjunct-
argument asymmetries are also absent. The explanation for
the absence of the wide scope reading for a wh-in-situ in
multiple embedded questions follows straightforwardly under
our account. wh-in-situ QRs at LF to adjoin to the IP
containing it. The LF for (35a) would look like (37).

(37) raam-ne mohan-se puuchaa ki [$_{IP}$kis-ne$_i$ [$_{IP}$kis-ko$_j$ [t$_i$
     t$_j$ dekhaa]]

Since QR is clause bound and non-successive cyclic (cf. Aoun
et al,1980; Hornstein,1986), wide scope readings of the type

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shown in (36) are excluded.

A similar conclusion can be arrived at by looking at the
scope interactions between a quantifier in a matrix clause
and a wh-phrase in an embedded clause. Thus in (38) below,
the quantifier has scope over both the wh-phrases:

(38) sab-ne   puuchaa ki kOn kis-ko pyaar kartaa hE
     everyone-erg asked   who whom   loves
     Everyone asked who loves who

(38) like (34) and (35) is an embedded question and none of
the wh-phrases can take scope out of the embedded clause.
In this respect, the embedded wh-phrases are like
quantifiers which also take clause bound scope in Hindi as
indicated in (39) below:

(39) a. sab-ne   kahaa ki koii   aayaa hE
        everyone-erg said   someone has come
        Everyone said that someone has come

     b. sab-ne   kahaa ki raam-ne kisii-ko dekhaa
        everyone-erg said   Ram-erg someone saw
        Everyone   said that Ram saw someone.

In (39), the quantifier in the subordinate clause cannot
take scope over the matrix clause quantifier.

3.3.1 Movement out of embedded questions

A wh-phrase can be moved out of an embedded wh-question as

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shown in (40b).

(40)a. raam-ne puuchaa ki kOn   aayaa hE
     Ram-erg asked   who has come
     Ram asked who has come

   b. kOn raam-ne   puuchaa ki   aayaa hE
      who Ram-erg   asked   has come
      (=40a)

The effect of this kind of movement seems to be vacuous(see

Saito,1986, for a similar conclusion for Japanese). I will

assume here that this represents a case of long distance

movement to a non L-related position (cf. chapter 2). Some

other aspects of embedded questions, especially the

treatment of pair-like questions will be taken up after I

describe other strategies of wh-question formation.

3.4. Wide scope questions

3.4.1 As described earlier wh-in-situ in embedded non-

question complements is ungrammatical in Hindi.

(41)a. *raam-ne   kahaa ki   kOn   aayaa hE
       Ram-erg   said   who   has come
       Who did Ram say has come?

   b. *raam-ne   socaa ki   siitaa-ne   kis-ko   dekhaa
      Ram-erg   thought   Sita -erg   who   saw
      Who did Ram think Sita saw?

(41b) would have an s-structure like (42).

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(42)

```
                          C'
                        /    \
                     IP        C
                    /  \      +wh
                  IP     C'
                 / \     / \
                /   \   /   \
         raam-ne t_cp socaa  ki ravii-ne kis-ko dekhaa
```
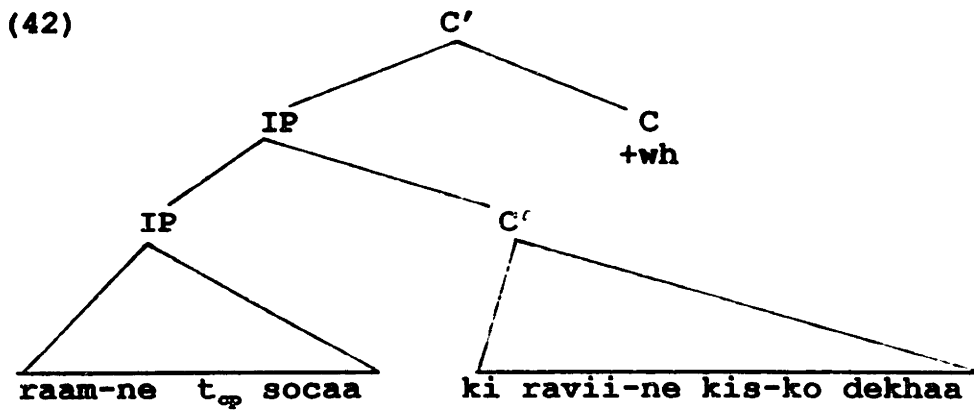
The question is : what rules out an s-structure such as
(42). Under the account that I outlined in the first
section, the explanation for the ungrammaticality is rather
straightforward. **kis-ko** is treated like a clause bound
quantifier at LF and therefore the LF representation of (42)
is as in (43):

(43)

```
                        C'
                      /    \
                   IP        C
                  /  \      +wh
                IP     C'
               / \    /  \
              /   \  IP    C
       raam-ne t_cp socaa / \  -wh
                      kis-ko  IP
                             /  \
                            /    \
                       ravii-ne t_wh dekhaa
```
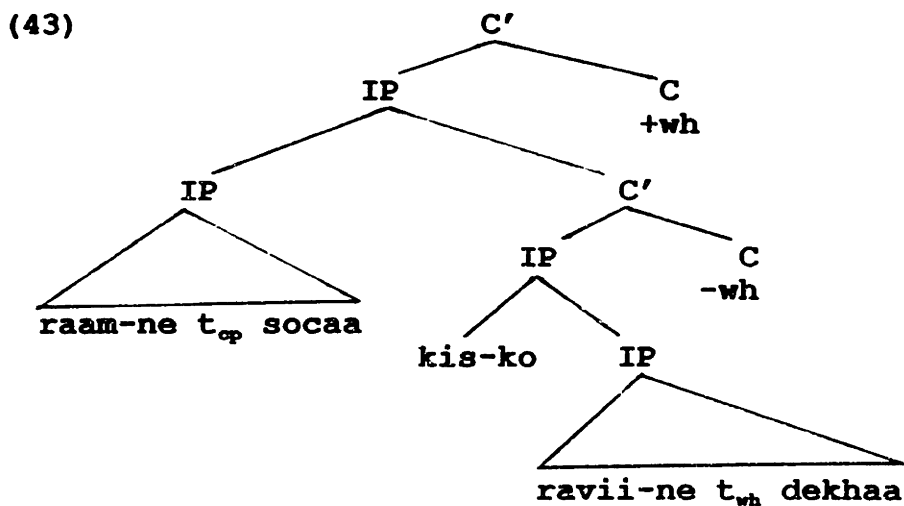
The wh-phrase in (43) violates the condition that it must be
governed by a +wh COMP. In fact, in (43), a wh-phrase **kis-ko** is governed by a -wh COMP and the representation in (4)

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is therefore ruled out (cf. Aoun et al,1980; Lasnik and
saito,1984). The ungrammaticality of sentences in (41) is
therefore due to the fact that QR is clause bound and cannot
apply successive cyclically. Note that if QR is allowed to
apply successive cyclically then kis-ko in (43) should be
allowed to move to the matrix clause and the sentence in
(41) should then be good. Furthermore, even if the
extraposed clause is a barrier, the LF movement of kis-ko
should not be a problem under standard accounts of wh-
movement. The trace of kis-ko is properly governed by the
verb and since subjacency is not applicable at LF, the
sentences in (41) should be perfect but they are totally
ungrammatical.

Given that wh-in-situ in a non-question complement cannot
take scope outside the clause it originates in, Hindi
resorts to other strategies to form wide-scope questions.

3.5 Extraction wh-questions

This strategy of wide-scope question formation involves
movement of the wh-phrase(s) for a non-question complement
as illustrated in (44)

(44)a. *raam-ne   socaa   ki mohan-ne   kis-ko   dekhaa
       Ram-erg   thought   Mohan-erg who   saw
       Who did Ram think Mohan saw?

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b. kis-ko raam-ne socaa   ki mohan-ne dekhaa
   who   Ram-erg thought   Mohan-erg saw
   Who did Ram think Mohan saw?

This strategy has been noted in Gurtu (1985), Mahajan (1987)

and Bains (1988). I will assume that the moved wh-phrase in

(44b) is adjoined to the matrix IP as shown in (45).[3]

(45)
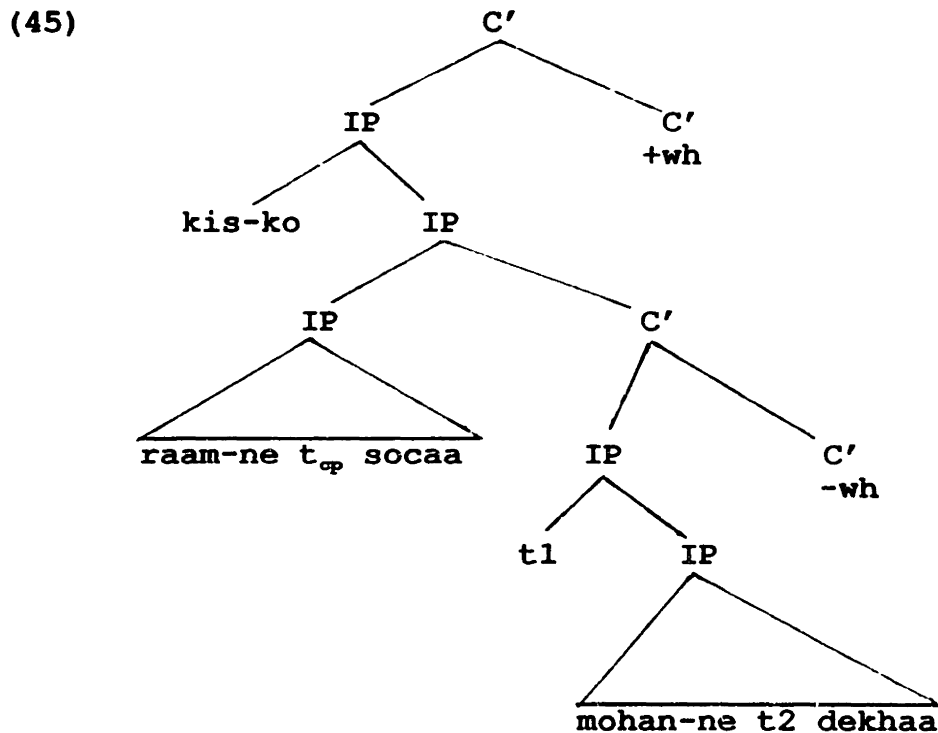
In this configuration +wh C governs the wh-phrase as

required. The reason why I assume that the wh-phrase adjoins

to IP rather than moving into the SPEC CP position will

become clear soon. Under this view, long distance movement

---

[3]This suggestion is based on Bains(1987) where movement of wh-phrase is treated as focus movement. Bains notes that the movement of the wh-phrase does not differ from that of non wh-phrases in this respect. He makes an additional assumption that wh-phrases move to SPEC CP at LF, an assumption that we will not follow here.

of the wh-phrase is simply a case of long distance

scrambling (to a non L-related position). I assume that the

presence of an intervening IP adjoined trace in the lower

clause is required to escape from the lower clause since IP

is a barrier.

3.5.1. Multiple wh-extractions

As noted earlier, a non wh-complement clause must not

contain any wh-phrase at s-structure. Multiple extractions

are allowed and are in fact obligatory as illustrated by

(46):

(46)a. *raam-ne   kahaa   ki   kOn   kis-ko   maaregaa
      Ram-erg said   who   whom   will hit
      Who did Ram say will hit who?

   b. *kOn   raam-ne   kahaa   ki   kis-ko   maaregaa
      who   Ram-erg   say   who   will hit
      Who did Ram say will hit who?

   c. kOn kis-ko   raam-ne   kahaa   ki   ___   ___   maaregaa
      who whom   Ram-erg   said   will hit
      Who did Ram say hit who?

Similar obligatory movement is observed in case one or more

adjunct wh-phrases are present in the embedded clause.

(47)a.* raam-ne kahaa ki mohan-ne kEse gaaRii Thiik kii
       Ram-erg said   Mohan-erg how car   fixed
       How did Ram say that Mohan fixed the car?

   b. kEse raam-ne kahaa ki mohan-ne __ gaaRii Thiik kii
     how Ram-erg said   Mohan-erg   car   fixed
     How did Ram say that Mohan fixed the car?

(48) a.*raam-ne   kahaa ki kis-ne   kEse gaaRii Thiik kii
         Ram-erg   said   who-erg how car   fixed
         lit. Who did Ram say fixed the car how?

     b.?kis-ne   kEse   Raam-ne   kahaa ki gaaRii Thiik kii
        who-erg how   Ram-erg   said   car   fixed
        lit. Who did Ram say fixed the car how?

(49)a. *raam-ne   kahaa ki unhON-ne kEse gaaRii kab Thiik kii
         Ram-erg   said   they-erg how car   when fixed
         lit. How did Ram say that they fixed the car when?

    b. ?kab kEse raam-ne kahaa ki unhON-ne gaaRii Thiik kii
        when how Ram-erg said   they-erg car   fixed
        lit. How did Ram say that they fixed the car when?

(47b) illustrates that adjuncts must move out of the non-

question complement. In fact (47b) makes a further point.

The grammaticality of (47b) indicates that the lower clause

from which extraction has taken place is not a barrier. If

this lower clause was a barrier then adjunct extraction out

of this clause should be an ECP violation (cf. Huang, 1982;

Lasnik and Saito,1984) which it is not. We will take up this

issue about the non-barrierhood of the extraposed clause in

the next section.

(48) and (49) show that multiple extractions are indeed

possible and forced. Note that if a unique SPEC CP position

is available as an escape hatch then the grammaticality of

(48b) and (49b) is somewhat difficult to explain. (48b) may

still be explained by claiming that the subject position in

Hindi is properly governed by INFL and therefore the subject

moves directly from an L-related position to adjoin to IP

(or to matrix SPEC CP) without leaving an intervening trace
(we are so far assuming that the lower clause is not a
barrier). This movement would at most be a subjacency
violation. (While (48b) is not perfect, it does not appear
to be a subjacency violation). The adjunct phrase would then
move through the lower SPEC CP thereby avoiding an ECP
violation.[4] The relevant structure for (48b) would look
like (50) where all the traces are properly governed.

(50)
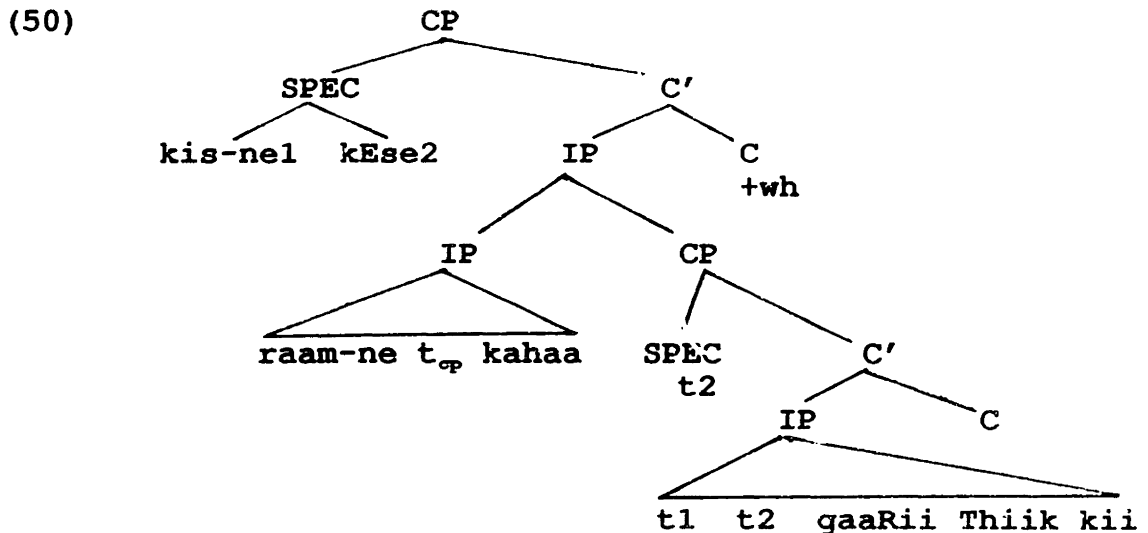
It may be noted that this derivation requires that the
subject should not be allowed to use the lower SPEC CP as an
escape hatch (which would yield an ECP violation),i.e., the
adjunct phrase should move first. However, even this kind of
derivation will not be available for (49b) that involves

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[4]Under the assumption that IP is a barrier, an intervening
step of IP adjunction would be required for both the lower clause
as well as the upper clause.

multiple adjunct extraction. Both the adjunct chains would

require no intervening barriers and if the lower or the

upper SPEC CP is used for movement, the representations

would come out as ECP violations. On the other hand, if we

assume that SPEC CP is not used (is not present) then a

unified account of (47) to (49) is available by permitting

adjunction to IP. Under this assumption, the wh-phrases

(adjuncts as well as arguments) move by adjoining to IP.

This voids the barrierhood of IP. (49b) under this account

will have a representation as in (51):

(51)

```
                        C'
                       / \
                    IP     C
                   /  \
               kab1    IP
                      /  \
                  kEse2   IP
                         /  \
                       JP      C'
                      /\      / \
                     /  \    IP   C
              raam-ne t_cp kahaa  / \
                              t1'   IP
                                   /  \
                                 t2'   IP
                                      /  \

                        unhoN-ne gaaRii t1  t2  Thiik kii
```
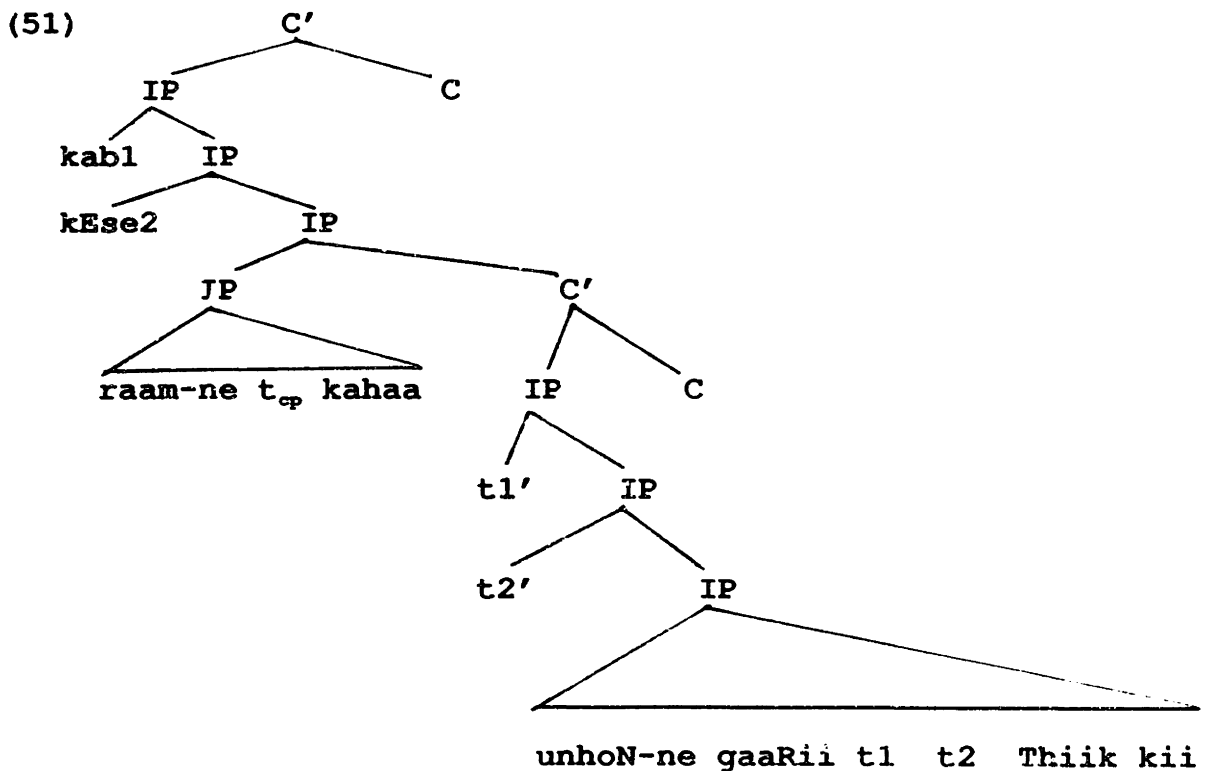

The original traces of adjuncts are antecedent governed by

IP adjoined traces which are in turn governed by matrix IP

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adjoined wh-phrases. Under this derivation, no stipulation

for the ordering of movement is required (as for 48b noted

earlier). Argument-adjunct or adjunct-adjunct asymmetries

are not expected, an expectation that is justified by (48b)

and (49b).

3.5.2. The non-barrierhood of the complement clause:

Since the extraposed clause (in (50),(51), and other

examples) is not L-marked in its s-structure position, we

would expect it to be a barrier for extraction. However, as

the foregoing discussion indicates, this clause does not

appear to be a barrier. In what follows, I will present

evidence that the apparent non-barrierhood of this clause

results because at the point when the extraction takes place

this clause is indeed governed by V and therefore L-marked.

This assumption (which is based on Mahajan(1987)) will be

justified on the basis of some intricate extraction facts.

Note that this move requires us to take a derivational

approach to syntax literally and provides some interesting

evidence for a derivational approach to syntax over a purely

representational approach.

We start off by assuming that the extraposed clause[5] is

not L-marked and therefore is a barrier. In its s-structure

_____

[5]I will use label CP or C' for a clause; the label CP is used
only for the sake of convenience and should not be taken to mean
that it is a projection with a specifier

(or LF) position this clause is not governed by V. There are two possible alternatives to this assumption both of which could yield a result that the extraposed clause is not a barrier. One would be to claim that the clause is L-marked by V at d-structure and L-marking is indelible and therefore the extraposed clause carries along its L-marking under movement. This would entail that the extraposed clause is not a barrier. The second alternative is that the extraposed clause is in fact L-marked in its s-structure)or possibly LF) site since V to AGR to I (that we have argued for) would move the V to a position from which it governs the extraposed clause. This is illustrated in (52) below:

(52)
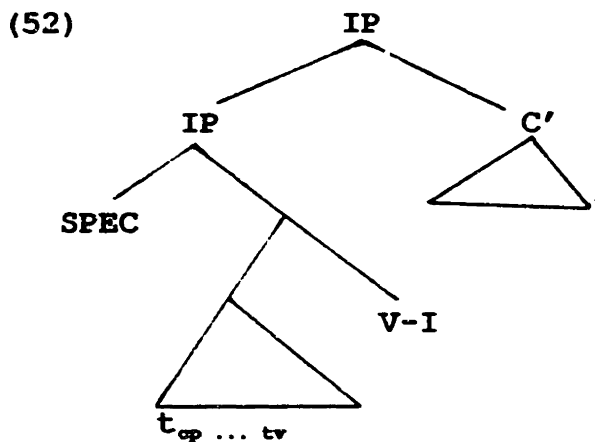
V in I c-commands the extraposed clause and may therefore L-mark it. The empirical argument that I develop in this section shows that both of these approaches must be incorrect. Therefore L-marking is NOT indelible and is insensitive to s-structure (possibly LF) constituency.

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Furthermore, in a configuration like (52), V does not <u>govern</u>

CP because V governs to the left in HIndi and L-marking must

therefore be sensitive to directionality of government (this

essentially follows form Kayne's (1984) definition of

government). I will however leave the possibility of whether

V can L-mark C' in (52) in a head-initial language. The

implications of this will become clear later when we discuss

English. The evidence that the extraposed clause is a

barrier in Hindi comes from some extraction facts and some

argument-adjunct symmetries concerning these extraction

facts. In Hindi, the d-structure position of the extraposed

clause may be occupied by an expletive element <u>yah</u> as shown

in (53):[6]

(53) raam-ne   yah   socaa   ki mohan cor hE
     Ram-erg   this   thought   Mohan thief is
     Ram thought this that Mohan is a thief

The expletive may be absent as in (54).

(54) raam-ne   socaa   ki mohan   cor hE
     Ram-erg   thought   Mohan   thief is
     Ram thought that mohan is a thief

My explanation of the symmetries to be discussed below is

based on the assumption that extractions from CP in clauses

like (54) actually take place before the CP is extraposed.

The CP in such configuration is L-marked and therefore not a

---

[6]Similar facts are found in many other languages. The account
that I develop here is similar to the one given in McDaniel (1989)
though it differs from her explanation in some respects.

barrier. Given the option of adjunction to IP, SPEC CP need

not be used in these cases and therefore we will not observe

any adjunct-argument asymmetries. This is in fact what we

saw in the previous section. I illustrate this schematically

in (55):

(55)

```
                        IP
                       /\
                  SPEC    I'
                         /\
                       VP    I
                      /\
                    C'   V
                   /\
                 IP   C
                /\
            t₁'    IP
                  /\
               t₂'   IP
                    /  \
                   /    \
                  /_____\
                  t₁   t₂
```
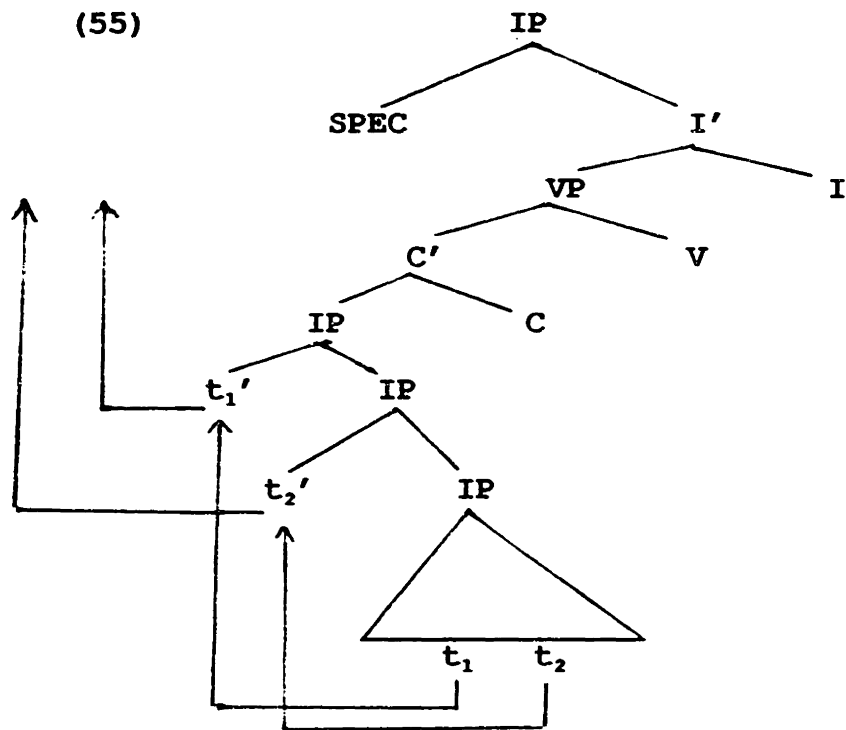
The C' is extraposed after extractions have taken place.

This gives the relevant word order effects along with an

explanation for the grammaticality of multiple extractions.

The difference between (53) and (54) is that in (53) the

position to which the verb assigns a theta role is filled by

an expletive. We will assume that the C' is actually

generated in its s-structure position and forms a chain with

the expletive. However, in its s-structure position the C'

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is not L-marked and is therefore a barrier. This conclusion

is justified by the fact that argument extraction from such

C' yield subjacency violations.

(56) a. ??? kis-ko raam-ne yah   socaa ki mohan-ne   maaraa
             who   Ram-erg this thought   Mohan-erg hit
         Who did Ram think this that Mohan hit.

     b. ??? kOn raam-erg yah   socaa ki __ cor hE
             who Ram-erg this   think   thief is
         Who did Ram think this that is a thief?

Adjunct extractions from such clauses yield strong ECP

violations:

(57)*kEse raam-ne yah   socaa ki mohan-ne   gaaRii Thiik kii
      how Ram-erg this think   Mohan-erg car   fixed
      How did Ram think that Mohan fixed the car?

   b.*kab   raam-ne yah   socaa ki mohan-ne   gaaRii Thiik kii
      when Ram-erg this think   Mohan-erg car   fixed
      When did Ram think that Mohan fixed the car?

(56)- (57) contrast therefore suggests that the extraposed

C' is indeed a barrier for extraction in Hindi. In cases,

where the expletive yah is absent, extraction precedes

extraposition, a possibility that is excluded if the

expletive is base generated in the object position.

There is one more possibility that we must consider before

leaving this section. Can the (56) vs (57) contrast be

viewed as a subjacency vs ECP violation contrast in

extraction from simplex NPs. That is, (57) and (58) can be

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derived from a structure like (59) below:

(59)
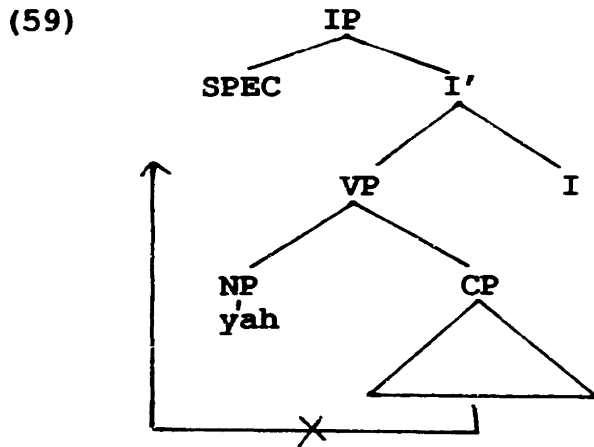
C′ extraposition follows extraction. Argument-adjunct
asymmetries are explained as earlier by the assumption that
C′ is base generated adjoined to IP can be dropped. This
view appears to be unproblematic except for one thing.
Complex NP violations in Hindi are very strong even for
arguments. This is shown below:

(60)a.raam-ne socaa ki [[yah   baat ki mohan-ne ravii-ko
     Ram-erg thought   this fact   Mohan-erg Ravi
     maaraa] galat hE
     hit   wrong is
     Ram thought that the fact that Mohan hit Ravi was
     wrong.

  b.*kis-ko raam-ne socaa ki yah baat ki mohan-ne maaraa
     who   Ram-erg thought   this fact   mohan-erg hit
     galat hE
     wrong is
     Who did Ram think that the fact that MOhan hit is
wrong?

(60b) which involves extraction of an argument out of a

complex NP is totally ungrammatical compared to a subjacency

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violation like (56)a or b. I suggest that the (56)-(57) contrast is therefore not an argument-adjunct asymmetry involved in extraction from a complex NP.

We have seen in this section that an extraposed CP is a barrier. Under a derivational view of syntax, this barrierhood can be voided if extractions from this CP can precede extraposition. Evidence that the extraposed CP is a barrier comes from some subjacency vs ECP effects in extractions of arguments and adjuncts out of base generated extraposed CPs.

3.5.3. Complex NP constraint: Subjacency at LF

As noted earlier, complex NP constraint violations in Hindi are strongly ungrammatical. There are no argument-adjunct asymmetries either for extractions out of a noun complement or out of a relative clause. This is shown in the examples given below:

```
(61)a. *kis-ko raam-ne  socaa  ki [yah  baat [ki mohan-ne __
        who    Ram-erg  thought    this fact      Mohan-erg
        maaraa]] galat hE    '60b)
        hit          wrong is
        lit. Who does Ram think that the fact that Mohan -
            hit is wrong?

    b.*kEse  raam-ne  socaa   ki [yah   baat    [ki mohan-ne
       how   Ram-erg  thought    this  fact        Mohan-erg
       ___   gaaRii   Thiik kii]] galat hE
             car      fixed       wrong is
       lit. How does Ram think that the fact that Mohan -
            fixed the car is wrong?
```

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(62) a.*kyaa ciiz raam-ne   [us   aadmii-ko jis-ko   siitaa-ne
        what thing Ram-erg that   man   who   Sita-erg
        dii] baazaar jaate dekhaa
        gave market   going saw
        lit. Ram saw the man who Sita gave what going to the
             market.

     b.*kis vakt raam-ne   [us   aadmii-ko jis-ko   ravii-ne
        which time Ram-erg that   man   who   Ravi-erg
        __ dekhaa] nOkrii   de dii
           saw   job   give
        lit. Ram gave a job to the man who Ravi saw when.

It has been argued by Huang (1980,1982), Lasnik and Saito

(1984) and several other people that wh-in-situ arguments do

not display subjacency effects. That is, the following

Japanese sentence from Lasnik and Saito(1984) is totally

grammatical even though it would be an LF subjacency

violation.

(63) [[Taroo-ga nani-o te-ni ireta]koto]o sonnani okotteru no
        Taro-nom what-acc obtained fact-acc so much be angry Q
     Lit. What are you so angry about the fact that Taro
             obtained t?

Given this, it is surprising that wh-in-situ in complex NPs

is strongly ungrammatical in Hindi. In fact in-situ wh-

arguments as well as adjuncts are strongly ungrammatical.

Thus sentences parallel to (61) and (62) with wh-in-situ are

ungrammatical:

(64)a.*raam-ne socaa ki [[yah   baat [ki mohan-ne kis-ko
       Ram-erg thought   this   fact   Mohan-erg who
       maaraa] galat hE
       hit   wrong is
       lit. Who does Ram think that the fact that Mohan - hit
          is wrong?

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b.*raam-ne   socaa   ki[[yah   baat [ki mohan-erg   kEse
  Ram-erg   thought   this   fact   Mohan-erg   how
   gaaRii   Thiik kii]]   sac hE
   car   fixed   true is
   lit. How does Ram think that the fact that Mohan -
       fixed the car is wrong?

(65)a.*raam-ne   [us aadmii-ko jis-ko   ravii-ne   kyaa   ciiz
    Ram-erg that   man   who   Ravi-erg   what   thing
     dii] baazaar jaate   dekhaa
     gave market   going   saw
     lit. Ram saw the man who Sita gave what going to the
          market.

   b.*raam-ne   [us   aadmii-ko   jis-ko   ravii-ne
     Ram-erg that   man   who   Ravi-erg
      kab dekhaa] nOkrii   de dii
      when saw   job   give
      lit. Ram gave a job to the man who Ravi saw when.

I suggest that (64) and (65) are neither subjacency

violations nor ECP violations.They are in fact selectional

violations. The wh-phrase in (64) and (65) being a

quantifier cannot escape the minimal IP containing it and is

therefore 'too far' from the +wh feature in COMP. This is

illustrated below:

(65)'
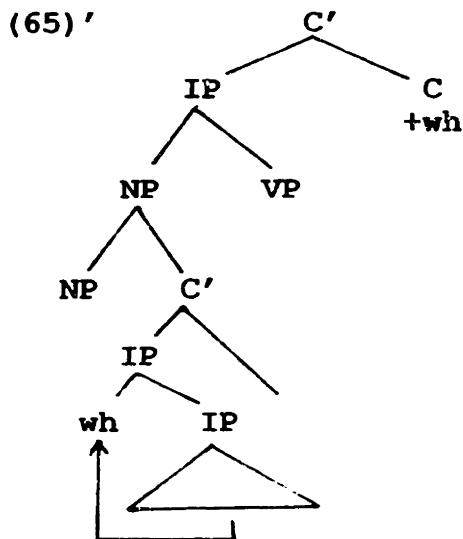
Since there are no NP complement vs relative clause asymmetries in Hindi either, the question of whether the C' inside the complex NP in (66) is a barrier or not becomes less relevant. However, since overt extraction out of a complex NP is also strongly ungrammatical (as shown by (61)), it appears that the C' is also a barrier. Therefore the complex NP dominating this C' also becomes a barrier yielding a strong violation for (61)a/b.

Given that wh-in-situ arguments inside complex NPs are strongly ungrammatical we have suggested that they are selectional violations. If wh-in-situ need to obey only ECP and subjacency is not a condition on LF movement, we would expect Hindi complex NP violations top be mild for arguments or expect at least some argument-adjunct contrast. Given the absence of such effects, we suggested that complex violations are in fact selectional violations. Under the view that we have been developing, wh-in-situ simply QRs at LF to adjoin to the minimal IP containing it. This view then forces us to conclude that subjacency is irrelevant at LF. Since LF does not have long distance movement, and subjacency is a condition on movement, the role of subjacency at LF becomes vacuous. This conclusion appears to be justifiable for Hindi though the implications of this view are less clear for other languages. We return to this in later sections.

3.5.4 Argument-Adjunct Asymmetries under Long Distance multiple movement: Relativized Minimality Effects:

As observed earlier, there are no adjunct-argument asymmetries if the wh-phrases are moved across one clause boundary. The relevant examples are repeated below:

(66)a. kOn kis-ko   raam-ne kahaa   ki ___ ___   maaregaa
       who whom   Ram-erg said   will hit
       Who did Ram say hit who?

   b. ?kis-ne kEse   Raam-ne kahaa ki gaaRii Thiik kii
      who-erg how   Ram-erg said   car   fixed
      lit. Who did Ram say fixed the car how?

   c.?kab kEse raam-ne kahaa ki unhON-ne gaaRii Thiik kii
      when how Ram-erg said   they-erg car   fixed
      lit. How did Ram say that they fixed the car when?

In (66)a , two arguments are moved across a clause boundary, in (66)b an argument and an adjunct are moved and in (66)c, two adjuncts have moved. the order of the fronted phrases is flexible. Thus corresponding to (66)a-c, the following are also possible:

(67)a. kis-ko kOn   raam-ne kahaa   ki ___ ___   maaregaa
       whom   who Ram-erg said   will hit
       Who did Ram say hit who?

   b. ?kEse kis-ne   raam-ne kahaa ki gaaRii Thiik kii
      how   who-erg   Ram-erg said   car   fixed
      lit. Who did Ram say fixed the car how?

   c.?kEse kab raam-ne kahaa ki unhON-ne gaaRii Thiik kii
      how when Ram-erg said   they-erg car   fixed
      lit. How did Ram say that they fixed the car when?

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Since the order of the fronted wh-phrases does not make any difference, the notion of relativized minimality must be adjusted slightly so that in the case of multiple adjunction to an XP, the order of adjunction, i.e., the hierarchy of adjoined phrases, is not relevant. That is, the lower adjoined phrase in a configuration like (68) does not count as an 'intervening' potential governor.

(68)

```
            XP
          /    \
        ZP      XP
               /  \
             YP    XP
                  /  \
                 / ___ \
               t_xp   t_yp
```
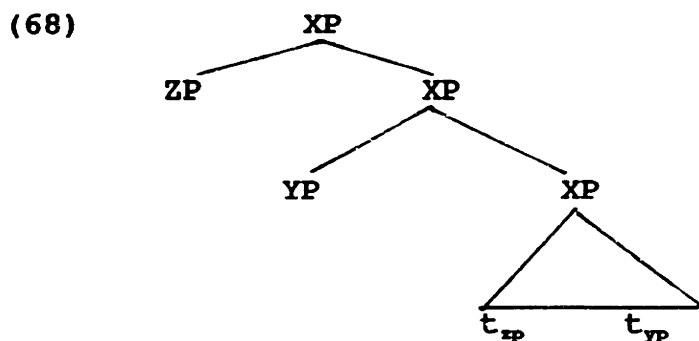
Recall that Rizzi's (1990) formulation of relativized minimality does not consider adjoined phrases to count as potential A-bar binders. However, I will show that adjoined phrases can indeed function as potential A-bar binders unless they are included in the same maximal projection as the actual antecedent as in representations like (68).

Hindi displays relativized minimality effects under longer movement when more than two clauses are involved. In this section, we will examine some such effects that bring up an interesting point with regarding the status of the

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intervening traces (under long distance movement) with respect to relativized minimality.

3.5.4.1. First of all, it should be noted that the restriction against having a wh-phrase within a non-question complement is absolute. This forces the wh-phrase which originates in the lowest clause in (69)a to move to the highest clause as in (69)c and not merely to move to an intermediate clause.

(69)a. *raam-ne   kahaa ki mohan-ne   socaa   ki kOn sii   Tiim
       Ram-erg   said   Mohan-erg thought   which   team
       jiitegii
       will win
       Which team did Ram say that Mohan thought will win?

   b.*raam-ne   kahaa ki kOn sii Tiim mohan-ne   socaa   ki
     Ram-erg   said   which   team Mohan-erg thought
     jiitegii
     will win   (=a)

   c. kOn sii Tiim   raam-ne   kahaa ki mohan-ne   socaa   ki
      which   team   Ram-erg said   Mohan-erg thought
      jiitegii
      will win   (=a)

However, if the matrix verb <u>kahaa</u> 'say' is replaced with <u>puuchaa</u> 'ask' which takes a question complement, then the wh-phrase originating in the lowest clause needs to move only to the intermediate clause as (70) shows:

(70) raam-ne   puuchaa ki kOn sii Tiim mohan-ne   socaa   ki
     Ram-erg   asked   which   team Mohan-erg thought
     jiitegii
     will win
     Ram asked which team Mohan thought will win.

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If the lowest clause in sentences like (70) contains more
than one wh-phrase, all of the wh-phrases must move out of
that clause. Two possibilities arise at this point: both the
wh-phrases move to the intermediate clause yielding an
indirect question or one of the wh-phrases moves to the
matrix clause and the other one moves to the intermediate
clause yielding a matrix question with an embedded indirect
question. The two possibilities are illustrated in (71):

(71) a. $[_{C'}$ $[_{IP}$ $[_{C'}$ $[_{IP}$ $[_{C'}$ wh$_1$ wh$_2$]]]]

b. $[_{C'}$ $[_{IP}$ $[_{C'}$ $[_{IP}$ $[_{C'}$ wh$_1$ wh$_2$]]]]
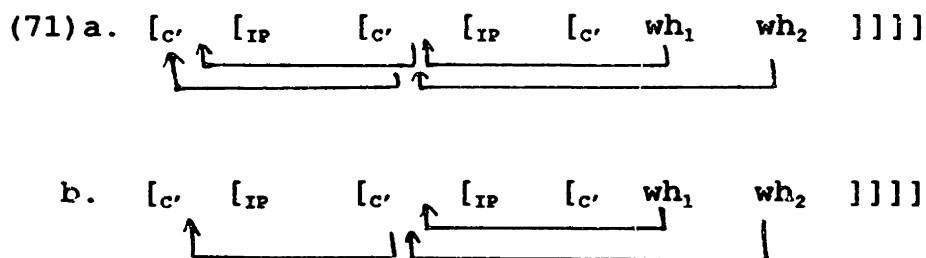
I am assuming that long distance movement is successive
cyclic in that adjunction to intermediate IP is used as a
step for long movement. This would certainly be required of
long distance adjunct movement (which is possible). Whether
or not it is also required for arguments depends on whether
antecedent government is required for arguments or not (see
Chomsky,1986b; Rizzi,1989; Lasnik and
Saito,1984,forthcoming). This issue is not directly relevant
to the point that we are making, so will ignore it here.
It is with respect to the two possibilities in (71) that
certain argument-adjunct asymmetries are observed. First of
all, note that if both the wh-phrases moved are arguments

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then both (71)a and (71)b are possible and it does not

matter which argument is moved to which clause.

(72)a.raam-ne puuchaa ki kOn sii Tiim kis-ko mohan soctaa hE
      Ram-erg asked   which   team who   Mohan thinks
        ki t t haraa degii
              will defeat
      Ram asked which team Mohan thinks will defeat who

  b.??kOn sii Tiim raam-ne puuchaa ki kis-ko mohan soctaa hE
      which   team Ram-erg asked   who   MOhan thinks
        ki t t haraa degii
              will defeat
      (=a)

c.??kis-ko raam-ne puuchaa ki kOn si Tiim mohan soctaa hE ki
     who   Ram-erg asked   which team Mohan thinks
        haraa degii
        will defeat
      (=a)

Both (72)b and c are somewhat deviant but have the same

status. Note that if successive cyclic adjunction to IP is

employed then all the intervening traces in (72)b and c will

be antecedent governed as indicated in (71)b (along with the

original traces being lexically governed as noted

earlier).[7] Compare (72)a-c with (73)a-c which involve

movement of an adjunct and an argument.

_____

    [7]We ignore here the question of whether the intermediate
traces need to be lexically governed or not. Since (72) involves
argument movement, the intermediate traces can be deleted (cf.
Lasnik and Saito,1984; Chomsky,1986b).

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(73)a.raam-ne   puchaa ki kOn sii Tiim ko kitne   ran se
      Ram-erg   asked   which   team   how many runs by
      ravii soctaa hE ki hamaarii Tiim haraaegii
      Ravi   thinks   our   team will defeat

   b.??kOn sii Tiim ko raam-ne   puchaa ki kitne   ran se
      which team   Ram-erg   asked   how many runs by
      ravii   soctaa hE ki hamaarii Tiim haraaegii
      Ravi   thinks   our   team will defeat

   c.*kitne ran se raam-ne puchaa ki kOn sii Tiim ko ravii
      how many runs by Ram-erg asked   which   team   Ravi
      soctaa hE ki hamaarii Tiim haraaegii
      thinks   our   team will defeat

Under our assumptions, both the wh-phrases first adjoin to

the lowest IP and then to the intermediate IP. that yields

(73)a which is well formed. In (73)b, the argument wh-phrase

is further moved to form a direct question. The resulting

sentence has the same status as (72)b,c. On the other hand,

if the adjunct wh-phrase is moved to the matrix clause, then

the sentence is ungrammatical. Similar ungrammaticality

results if both the wh-phrase are adjuncts.

(74)a. raam-ne   puchaa ki kitne   ran se   kab   ravii
       Ram-erg   asked   how many runs by   when Ravi

       soctaa hE ki vah   Tiim t t jiitegii
       thinks   that team   will win

   b.*kitne ran se raam-ne puchaa ki kab   ravii soctaa hE
      how many runs by Ram-erg asked   when Ravi   thinks

       ki vah Tiim t t jiitegii
          that team   will win

   c.*kab raam-ne puchaa ki kitne ran se   ravii soctaa hE
      when Ram-erg asked   how many runs by Ravi   thinks

       ki vah Tiim t t jiitegii
          that team   will win

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Note that under a successive cyclic adjunction approach, the original as well as the intermediate traces should be antecedent governed in all the examples of (72), (73), and (74). Take for instance (73)c which would have a representation like (75):

(75) kitne ran se$_1$ [raam-ne puchaa [t$_1$ [kOn sii Tiim ko$_2$
     [raam   soctaa hE ki [t$_1$' [t$_2$' [hamaarii Tiim   t$_1$" t$_2$"
     haraayegii]]]]]]]

Let us concentrate on the adjunct traces (since the original argument traces is in any case properly governed). t$_1$" is governed by t$_1$'. t2' cannot count as a potential antecedent. For one thing, intervening traces do not count as potential antecedents as shown by (76).

(76) kis din   kitne   ran se raam soctaa hE ki mohan-ne
     which day how many   runs by Ram   thinks   Mohan-erg

     kahaa ki uskii Tiim t t jiitegii
     said   his   team   will win

The grammaticality of (76) shows that the intermediate traces (both of them) as well as the original traces of adjunct phrases must be governed therefore none of the intermediate traces should block antecedent government for the other. Secondly, in (75), the intervening argument trace is simply deletable and therefore not relevant. t1 is properly governed by the adjunct phrase itself. The problematic trace therefore must be t1'. We suggest that t1

does not properly govern t1' (and therefore does not

antecedent govern it) because of the presence of the

intervening argument phrase that acts as a potential

antecedent governor. (73)c is therefore an ECP violation.

(74) b and c are ruled out on the same grounds.

The deviant status of (72)b,c, and (73)b can be attributed

to subjacency. Recall that we argued earlier that subjacency

is irrelevant at LF. However, (72)b,c, and (73)b involve

syntactic movement. The deviance of these examples can be

attributed to subjacency only if subjacency is sensitive to

'relativized minimality'. This provides support for theories

such as Chomsky (1986b) that argue for a unification of the

notion of 'barrier' for ECP as well as subjacency.

Let me conclude this subsection by summarizing the main

results. I have shown that HIndi shows certain argument-

adjunct asymmetries can be explained using the notion of

'relativized minimality'. I have also suggested that the

notion of relativized minimality may also be relevant in

defining subjacency barriers thus arguing for a unification

of ECP and subjacency barriers.

3.5.5 Wh-phrases in Infinitivals

Hindi nonfinite clauses do not undergo extraposition and

therefore precede the verb as illustrated by the examples

below:

(77) a. raam-ne [PRO siitaa-ko dekhnaa]   caahaa
         raam-erg   Sita   to see   want
         Ram wanted to see Sita.

     b. raam-ne mohan-ko [PRO siitaa-ko dekhne] ke liye kahaa
        Ram-erg Mohan   Sita   to see   told
        Ram told Mohan to look at Sita.

     c. raam-ne mohan-ko   jaane kaa vaadaa   diyaa
        Ram-erg Mohan   to go gen promise   gave
        Ram promised Mohan to leave.

     d. raam-ne mohan se   jaane kaa vaadaa   liyaa
        Ram-erg Mohan-obj   to go gen promise   took
        lit. Ram took a promise from Mohan to leave.

A wh-phrase within an infinitival clause in Hindi does not

have to move. The following are wide scope questions:

(78) a. raam-ne   kis-ko dekhnaa caahaa
        Ram-erg   who   to see   want
        Who did Ram want to see?

     b. raam-ne mohan-ko   kise   dekhne ke liye kahaa
        Ram-erg Mohan-erg   whom   to see   for   told
        Who did Ram tell Mohan to look at?

     c. raam-ne mohan-ko   kise maarne kaa vaadaa diyaa
        Ram-erg Mohan   who to hit gen   promise gave
        Who did Ram promise Mohan to hit?

     d. raam-ne mohan se   kise maarne kaa vaadaa   liyaa
        Ram-erg Mohan   who to hit gen promise took
        lit. Who did Ram take a promise from Mohan to hit?

Let me briefly suggest why wh-phrases do not have to move in

(78). there are two possible reasons. The first is that the

infinitive clauses in Hindi are not C's or even IPs. They

are AGRPs. If wh-phrases QR at LF to adjoin to IP then the

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first IP is the matrix IP in (78)a-d. Since AGRPs are not

barriers, QR of the wh-phrase ar LF will not cross any

barriers. I will however not pursue this since there is no

evidence to suggest that all infinitivals are AGRPs. In

fact, sentences like (78)b contain a complementizer like

postposition __ke liye__ 'for' that indicates that the

infinitivals in these cases are C's. Thus the other

possibility is that the infinitivals in (78) are C's

dominating IPs. At LF the wh-phrase QRs to adjoin to the

lower IP and the lower IP further QRs to adjoin to the

matrix IP yielding a representation like (79):

(79)
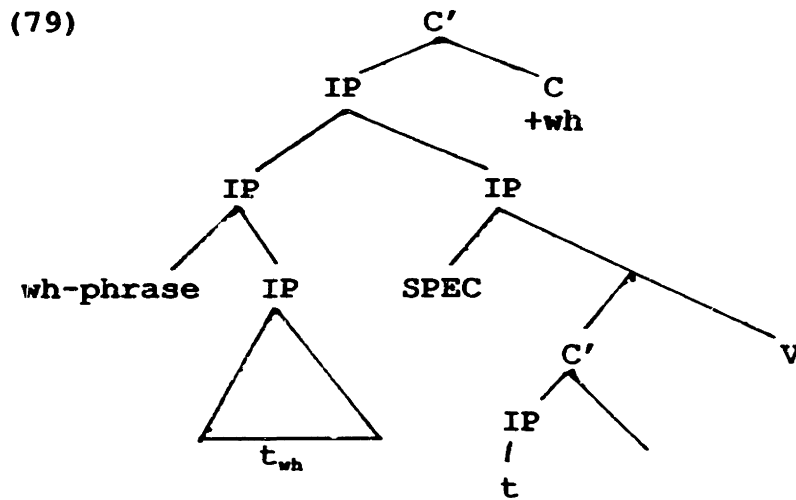
+wh in this configuration governs the wh-phrase. Note that

the movement of the IP from within the embedded CP is

possible because the CP is L-marked (being canonically

governed). As for the QR of the IP, I essentially follow

Fiengo et al (1988) in assuming that the adjunction of a wh-

phrase to an IP makes it quantificational and that makes it possible for it to QR. This analysis predicts that if the infinitival clauses are not canonically governed, a wh-in-situ in them will not be permitted. This prediction is fulfilled as shown in (81) where the infinitival clauses are rightward extraposed. Such extraposition is somewhat marked but is possible as shown in (80):[1]

(80) a. raam-ne caahaa siitaa ko dekhnaa
        Ram-erg wanted Sita   to see (=77a)

     b. raam-ne mohan ko kahaa siitaa ko dekhne ke liye
        Ram-erg Mohan   told Sita   to see for   (=77b)

     c. raam-ne mohan ko vaadaa diyaa ravii ko maarne kaa
        Ram-erg Mohan   promise gave Ravi   to hit gen (=77c)

     d. raam-ne mohan se vaadaa liyaa ravii ko maarne kaa
        Ram-erg Mohan   promise took Ravi   to hit gen (=77d)

(81) a. *raam-ne caahaa kis-ko dekhnaa
        Ram-erg wanted who   to see (=78a)

     b. *raam-ne mohan ko kahaa kis ko dekhne ke liye
        Ram-erg Mohan   told who   to see for   (78b)

     c. *raam-ne mohan ko vaadaa diyaa kis ko maarne kaa
        Ram-erg Mohan   promise gave who   to hit gen (78c)

     d. *raam-ne mohan se vaadaa liyaa kis ko maarne kaa
        Ram-erg Mohan   promise took who   to hit gen (78d)

Overt fronting of the wh-phrase is possible in (80) a-d and (81) a-d. In fact, fronting of wh-phrases in (81) a-d yields wh-questions:

---

[1] (81) a-d may be mildly acceptable as echo questions

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(82)a.?kis-ko raam-ne caahaa dekhnaa
      who   Ram-erg wanted to see

   b. ?kis-ko/kise raam-ne mohan ko kahaa dekhne ke liye
      who   Ram-erg Mohan   told to see

   c. ?kis-ko raam-ne mohan ko vaadaa   diyaa maarne kaa
      who   Ram-erg Mohan   promise gave to hit

   d.?kis-ko raam-ne mohan se vaadaa   liyaa   maarne kaa
     whc   Ram-erg Mohan   promise   took   to hit

I suggest that the extraction actually takes place before

extraposition since even wh-adjuncts can be fronted (see the

previous section).

(83)a.? kEse raam-ne caahaa gaaRii Thiik karnaa
        how   Ram-erg tried car   to fix

   b.? kab   raam-ne mohan ko kahaa jaane ke liye
       when Ram-erg Mohan   told to go

Interestingly, the infinitivals containing the wh-phrase can

also be fronted. In this case the wh-phrase can stay in-situ

but still yield a wh-question.

(84)a. kis-ko dekhnaa   raam-ne caahaa
       who   to see   Ram-erg tried

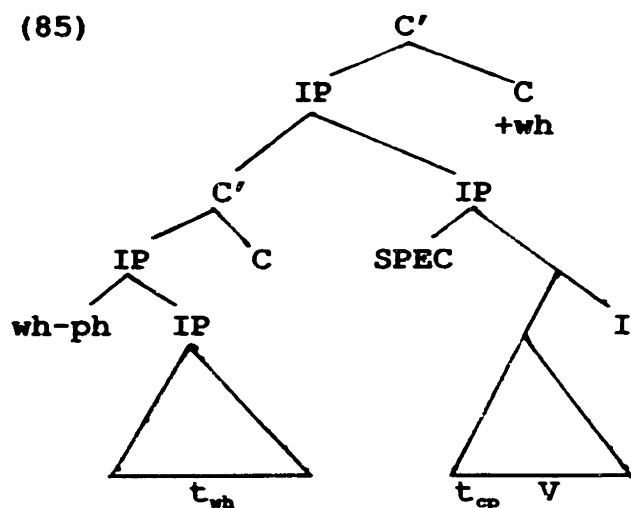   b. kis-ko dekhne ke liye raam-ne mohan ko kahaa
      who   to see   Ram-erg Mohan   told

   c.?kis-ko maarne kaa raam-ne mohan ko vaadaa   diyaa
      who   to hit   Ram-erg Mohan   promise gave

   d.?kis-ko maarne kaa raam-ne mohan se vaadaa   liyaa
      who   to hit   Ram-erg Mohan   promise took

I suggest that a sentence such as (84)b has the following

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representation:

(85)

```
                    C'
                   /  \
                  IP    C
                 / \    +wh
                C'   IP
               / \   / \
              IP  C SPEC \
             / \       /\  I
        wh-ph  IP     /  \ / \
              /\     /    \/   \
             /  \   / t_cp  V   \
            /____\ /_____\
             t_wh
```

I assume that the fronted clause is in fact L-marked by I
(containing the verb) since it is governed canonically. This
makes it possible for the +wh in C to govern the wh-phrase
(since no barrier intervenes between them). This gives the
sentence a question interpretation.

3.6 kyaa-questions

This strategy of forming wide scope questions involves the
scope of a wh-in-situ in a subordinate clause being
projected up be a **kyaa** particle preceding the matrix verb.
This is illustrated in (86) below:
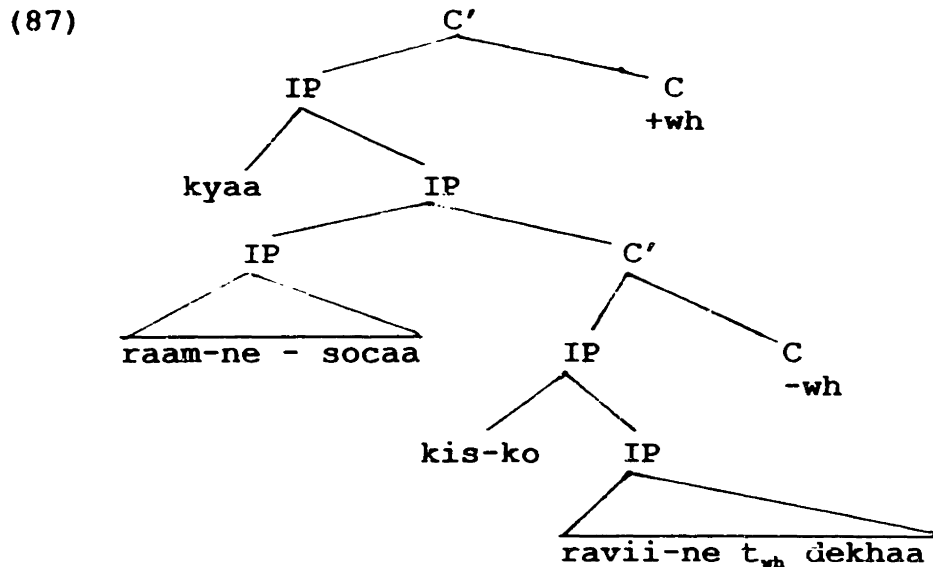
(86) raam-ne kyaa   socaa   ki ravii-ne kis-ko dekhaa
     Ram-erg KYAA   thought   Ravi-erg who   saw
     What did Ram think that Ravi saw?

In the subsections that follow I will provide a detailed

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account of this strategy within the theoretical framework that we are developing. In doing so, I will build on the suggestions in Davison (1986) and Mahajan (1987) where some aspects of this strategy are discussed.

3.6.1. Introduction: The particle _kyaa_ corresponds to the expletive _yah_ that we discussed in the previous section. The difference is essentially that _kyaa_ has an interrogative force and it permits the formation of wide scope questions. I should note here that McDaniel (1989) discusses some facts from Romani and German which seem to indicate that the strategy of projecting scope of a wh-phrase using a question particle is not unique to Hindi (see also Wahba(1987,89)). These languages also use a question particle corresponding to the Hindi _kyaa_ which is morphologically identical to the accusative wh-phrase. In Romani and German, however, this particle occurs in a clause initial position which is consistent with the fact that these languages have overt wh-movement. In Hindi, _kyaa_ occupies a pre-verbal position. This particle is, however, not morphologically attached to the verb because certain kinds of elements (such as negation, some adverbs, etc.) can appear between the verb and this particle. I will assume that _kyaa_ occupies the same position as the expletive _yah_ discussed in the earlier section. Based on the assumption that wh-in-situ QRs at LF in Hindi, I will suggest that the LF of a sentence like (86)

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is as in (87) where the expletive _kyaa_ QRs within its own
clause and the wh-phrase _kis-ko_ QRs to adjoin to the lower
IP (recall that I am assuming that the lower clause is base
generated in the extraposed position when it is associated
with an expletive):

(87)

```
                              C'
                         ____/  \____
                       IP            C
                      /  \           +wh
                    /      \
                 kyaa       IP
                          /    \
                        IP       C'
                       /\       /  \
                      /  \     /     \
                  raam-ne - socaa   IP      C
                                   /  \     -wh
                                  /    \
                              kis-ko    IP
                                       /  \
                                      /    \
                                 ravii-ne t_wh dekhaa
```

In such a structure, the scope marker _kyaa_ governs the wh-
phrase and +wh governs the marker. I will assume following
McDaniel (1989) that this permits the formation of a chain
that projects the scope of the wh-phrase. In (87), the trace
of _kyaa_ as well as of _kis-ko_ are antecedent governed. QR is
required since the IP is a barrier and QR voids this
barrierhood. There are two problems that need to be
addressed at this point. First, why is a -wh COMP in the
lower clause permitted to govern a wh-phrase? There is no
straightforward answer to this problem. McDaniel's (1989)
treatment of analogous facts involves ignoring the -wh

feature of the lower COMP once a complex wh-chain can be formed. Another possibility is that the kyaa element absorbs this feature. Recall that kyaa is an expletive argument associated with the extraposed clause. It is therefore plausible to view the absorption of the wh feature specification of the verb in a manner analogous to the absorption of the theta role of an object by an object clitic. Under this view, the embedded COMP in (87) is simply devoid of any wh feature, i.e., it is not +wh since the senten.e is not an embedded question, it is not -wh otherwise it will govern a +wh element thereby violating Lasnik and Saito's (1984) filter.

The second problem is that the complex chain formation that permits wide scope interpretation of kis-ko in (86) must be allowed to take place across the clause boundary which we argued to be a barrier on the basis of some ECP effects in an earlier section. Under our account, the extraposed clause is a barrier. The presence of an expletive does not allow extraction from a preverbal position. The adjunct/argument asymmetries noted for extraction of an extraposed clause associated with an expletive (noted with yah clauses earlier) show up indicating that the extraposed clause is a barrier.

(88)a.?? vah kuttaa raam-ne kyaa kahaa ki kis-ne dekhaa thaa
        that dog   Ram-erg KYAA said who-erg saw
        That dog, who did Ram say that - saw?
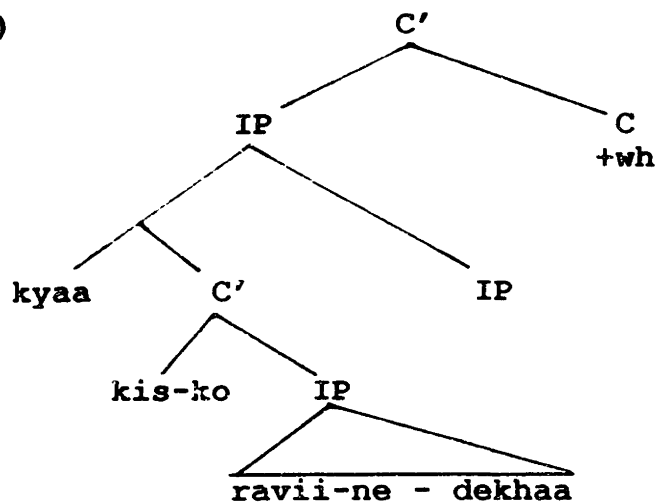
    b.*is jagah par raam-ne kyaa kahaa ki kis-ne vah kuttaa
        this place Ram-erg KYAA said   who-erg that dog
        dekhaa thaa
        saw
        In this place, who did Ram say that - saw that dog?

Our solution to this problem is essentially based up[on the
fact that while the examples in (88) involve overt syntactic
movements at s-structure, the coindexation of kyaa and kis-
ko in (86) takes place at LF (kyaa governs kis-ko at this
level since no barriers intervene). The violations in (88)
are s-structure violations and the representations for (88)a
and b are thus marked ?? and the * respectively at s-
structure and are therefore deviant or ill formed.[2]

On the other hand, the representation (86) is further
modified at LF, voiding the barrierhood of CP. We suggest
that the extraposed CP adjoins to the kyaa particle at LF
(this follows Chomsky's (1989) idex about expletive
replacement) yielding a representation like (88):

---

[2]This approach has the consequence of checking ECP at s-
structure for arguments as well as adjuncts in Hindi. This is
contrary to Lasnik and Saito's (1984) suggestions. I do not pursue
this point further here.

(88)

```
                            C'
                   _____/ _____
                  IP                  C
           _____/ _____           +wh
          /                \
        kyaa      C'        IP
              ___/ \___
             /         \
          kis-ko        IP
                    ___/ \___
                   ravii-ne - dekhaa
```

Under this approach __kyaa__ is an LF affix and its affixal
nature requires its associated CP to adjoin to it (the
interrogative nature of __kyaa__ further requires its associate
to contain a wh-phrase, this essentially follows from the
agreement requirement between the expletive and its
associate). The fronted CP can now be canonically governed
by the matrix I (which contains V and may have raised to C
at LF). This solution mimics the s-structure possibility we
discussed in connection with extractions out of fronted
infinitives.[3]

3.6.2 Multiple kyaa questions

The presence of __kyaa__ in a matrix clause permits multiple in-
situ wh-phrase in the subordinate clause. All of these

---

[3]Since overt fronting of finite clauses is rather difficult in
Hindi, it is difficult to check if the fronted finite clauses are
barriers in syntax or not.

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phrases must however take matrix scope:

(89)a. raam-ne kyaa kahaa thaa ki kis-ne   kis-ko   maaraa
       Ram-erg KYAA said   who   whom   hit
       Who did Ram say - hit whom?

  b.raam-ne kyaa kahaa thaa ki mohan-ne kis-ko kEse maaraa
    Ram-erg KYAA said   Mohan   whom   how hit
    How did Ram say that Mohan hit who - ?

  c.raam-ne kyaa kahaa thaa ki mohan-ne   kab kis-ko kEse
    Ram-erg KYAA said   Mohan-erg when whom   how
    maaraaa
    hit
    How did Ram say that Mohan hit whom when?

Multiple adjunct questions are possible as indicated by

(89)c. These cases are explained under our account as

follows: the embedded wh-phrases QR to adjoin to the

embedded IP. the extraposed CP adjoins to the expletive kyaa

at LF.

3.6.3. kyaa questions and multiple embeddings

The following paradigm shows that the presence of kyaa is

obligatory in the intermediate clause also if the scope of

the wh-in-situ is to be projected upwards.

(90)a.*raam-ne socaa ki ravii-ne kyaa kahaa ki kOn sa aadmii
       Ram-erg thought Ravi-erg KYAA said   which man
       aayaa thaa
       came
       Intended as: Which man did Ram think that Ravi say -
          came?

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b.*raam-ne kyaa socaa ki ravii-ne kahaa ki kOn saa aadmii
   Ram-erg KYAA thought Ravi-erg   said   which man
   aayaa thaa
   came
   (=a)

c. raam-ne kyaa socaa ki ravii-ne   kyaa kahaa ki
   Ram-erg KYAA thought Ravi-erg   KYAA said
   kOn saa aadmii aayaa thaa
   which man   came
   (=a)

The ungrammaticality of (90)a,b indicates that the scope of

wh-in-situ can only be projected if all of the non question

complements contain kyaa. This can be explained if an overt

kyaa is required (i) to absorb the -wh feature of COMP (ii)

for the associate CP to adjoin.

(90)a and b are ungrammatical because socaa 'think' and

kahaa 'said' are not allowed to take a question complement

unless kyaa absorbs their wh-feature. Furthermore, the

absence of kyaa in the matrix clause in (90)a and in the

intermediate clause in (90)b blocks the raising of the

lowest clause to the matrix IP. Note that if socaa 'think'

of (90)a is replaced with puuchaa 'ask' which takes a wh-

complement, the resulting sentence is good as an embedded

question.

(91)raam-ne puuchaa ki ravii-ne kyaa kahaa ki kOn saa aadmii
    Ram-erg   asked   Ravi-erg KYAA said   which man
    aayaa thaa
    came
     Ram asked which man did Ravi say - came.

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Since puuchaa 'ask' takes a +wh COMP, the presence of kyaa

in the intermediate clause permits the coindexation of the

+wh COMP to the embedded kOn 'who' via the mechanism that we

outlined earlier. On the other hand, a replacement of kahaa

'said' with puuchaa 'asked' in (90)b still produces an

ungrammaticality.

(92) *raam-ne kyaa socaa ki[ravii-ne puuchaa ki[kOn saa
     Ram-erg KYAA thought Ravi-erg   asked   which
     aadmii aayaa thaa]]
     man   came

The ungrammaticality of (92) shows that the presence of kyaa

in the matrix clause requires its associated CP to be an

interrogative clause which CP2 is not (it is an indirect

question).

Before leaving this subsection, let me note that the kyaa

strategy and the extraction strategy can be combined to

produce wide scope questions. Thus the ungrammaticality of

(90)b can be repaired either by inserting an intermediate

kyaa as in (90)c or by simply moving the wh-phrase kOn to

the intermediate clause.

(93)?raam-ne kyaa socaa ki kOn saa aadmii ravii-ne kahaa ki
     Ram-erg KYAA thought   which man   Ravi-erg said
     aayaa thaa
     came
     Which man did Ram think that Ravi said - came?

3.6.4 Extractions out of kyaa questions

As already noted in (88)a,b, s-structure extractions out of

kyaa questions are possible for arguments with subjacency

type deviance while extraction of adjuncts yields stronger

(possibly) ECP violations. Overt wh-extraction also follows

the same pattern as illustrated in (94):

(94)a.raam-ne   kyaa   kahaa   ki   hamaarii   Tiim   kOn saa gem
     Ram-erg   KYAA   said   our   team   which game
     kis   din   khelegii
     which day   will play

     On which day did Ram say that our team will win which
        game - ?

   b.??kOn saa gem raam-ne   kyaa   kahaa ki hamaarii Tiim
      which   game Ram-erg   KYAA   said   our   team
      kis   din   khelegii
      which day   will play (=a)

   c.*kis   din   raam-ne   kyaa   kahaa   ki   hamaarii Tiim
      which   day   Ram-erg   KYAA   said   our   team
      kOn saa gem   khelegii
      which   game   will play (=a)

(94)b can be further embedded under a kyaa clause as in

(95).

(95)ravii-ne kyaa socaa   ki [kOn saa   gem   raam-ne   kyaa
    Ravi-erg KYAA thought   which   game   Ram-erg   KYAA
    kahaa ki hamaarii Tiim kis   din   khelegii
    said   our   team which day   will play

    On which day did Ravi think that Ram say that our team
    will win which game - ?

The wh-phrase kOn saa mEc could also take matrix scope in

(95) without the kyaa by overt movement.

```
(96)??? kOn saa mEc ravii-ne    socaa ki raam-ne   kyaa  kahaa
        which match ravi-erg thought Ram-erg  KYAA  said
        ki  hamaarii  Tiim  kis   din   khelegii
        our           team  which day   will play  (=95)
```

3.7 Summary of the results of the previous six sections

We have argued so far that Hindi does not have wh-movement
either at s-structure or at LF. We use the term 'wh-
movement' as movement to SPEC CP - what Aoun et al (1980)
called 'wh-R' (see also Lasnik and Saito, 1984). We suggest
that Hindi wh-phrase simply QRs at LF (in this respect we
revive a suggestion made in Huang,1980). Since QR is
generally clause bound, we suggest that HIndi wh-QR is also
clause bound. This yields a variety of consequences. It
explains why wh-in-situ is possible in embedded questions
but ruled out in non question complements. It also explains
why wh-in-situ in complex NPs is unacceptable in Hindi.
Since wide scope questions cannot be formed with wh-in-situ,
Hindi uses two strategies to form wide scope questions. The
extraction strategy performs the function that LF QR cannot.
It moves a wh-phrase out of a finite clause to a position
from which LF QR can move it to the required position --- a
position governed by +wh COMP. The kyaa strategy provides
an expletive that absorbs the wh feature of the COMP of the
clause kyaa is associated with. Furthermore, kyaa
replacement provides a mechanism for projecting the scope of
a wh-in-situ. Several consequences of the treatment of the
extraction strategy and kyaa strategy are explored showing

that the extraposed clause must be a barrier in Hindi providing evidence for a derivational approach to syntax.

Our treatment of Hindi wh-questions raises a number of issues. First of all, Hindi is neither purely wh-in-situ, nor has obligatory wh-movement the way English does. This raises a question regarding the status of the wh-movement parameter. I suggest that as far as Hindi is concerned, simply classifying Hindi as -wh movement at s-structure yields the desired effects. Forced movement of the wh-phrase in the required contexts is yielded by making the assumption that the syntax of LF in Hindi treats wh-phrases as clause bound quantifiers.

In the next section we explore if this approach can be generalized. That is, is it possible to treat all wh-in-situ as LF quantifiers that can only undergo local QR? I will suggest that this approach seems plausible.

I will also reexamine the issue of whether or not subjacency plays a role at LF. I will suggest that if wh-in-situ simply QRs to adjoin to the immediately dominating IP, then this movement will never cross a barrier (VP not being a barrier under this approach) and therefore subjacency will never be disobeyed by LF movement of a wh-phrase. This simply makes the question of whether or not subjacency applies at LF

immaterial.

3.8 Wh-in-situ in English:

It is generally assumed that wh-in-situ in English moves at
LF to SPEC CP (cf. Aoun et al,1980,Huang,1982, Lasnik and
Saito,1984 and Chomsky,1986; see however Pesetsky,1987 for
arguments that not all wh-in-situ move at LF in English).
Since English does have s-structure wh-movement to SPEC CP,
it is plausible that the learner simply assumes that all wh-
phrases move to SPEC CP in this language. If they do not do
it at s-structure then they do it at LF. This view does not
conflict with the approach that I have outlined so far where
it is suggested that if the child does not get any overt
evidence for s-structure wh-movement wh-movement to SPEC CP
then he assumes that the language in question does not have
wh-movement to SPEC CP -not even at LF.

In this section we pursue a somewhat different approach. We
suggest that the syntax of LF treats all wh-in-situ as
quantifiers - in languages like Hindi as well as in
languages like English. There are major empirical
consequences of adopting such an approach and we will
explore some of those in the subsections that follow.

4.8.1. Uniclausal Multiple Questions: Doubly filled COMP

English does not allow for two wh-phrases to occupy SPEC CP

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at s-structure. Our approach implies that SPEC CP can never be doubly filled at any level of representation. This is because only the wh-phrase that has moved to SPEC CP at s-structure will be in that position at LF, the other wh-phrases will be adjoined to the IP. There is an immediate consequence of this approach.

Consider (96) which is acceptable to many speakers:[4]

(96) Who left why?

This sentence is problematic under standard approaches since it is ruled out as an ECP violation. If _who_ moves first to SPEC CP, and _why_ moves to SPEC CP at LF, the trace of _why_ will not be antecedent governed. Alternatively, under a vacuous movement account, _who_ could be in-situ at s-structure permitting _why_ to move first at LF. Under this account, the trace _who_ will not be antecedent governed (this derivation will also violate superiority) . Under our approach both the wh-phrases move to adjoin to IP at LF and therefore both the traces are antecedent governed.[5]

---

[4]This sentence is unacceptable to many speakers. Lasnik and Saito(1984) consider it ungrammatical. For many other speakers, there is a contrast between (96) and (i):
(i) I asked who left why?
(i) is worse than (96).

[5]For my purposes it is enough to claim that there is no s-structure movement of subject wh-phrases in root clauses. Vacuous movement hypothesis faces many problems with respect to the subject

An ECP account of the contrast in (97) is no longer possible.

(97)a. *What did John do why?

    b. Why did John do what?

Under ECP based approach for this contrast, (97)a is ungrammatical because the LF trace of why will be an ECP violation since the SPEC CP is already filled and indexed with what (see Lasnik and Saito,1984). (97)b is grammatical since the trace of what is lexically governed. Under our approach, the LF for (96)a,b will look like (98)a,b:

(98)a. $[_{CP}$ what$_1$ $[_{IP}$ why$_2$ $[_{IP}$ John do t1 t2$]]]$

    b. $[_{CP}$ why$_2$ $[_{IP}$ what$_1$ $[_{IP}$ John do t1 t2$]]]$

I suggest that (98)a is not an ECP violation and is ruled out independently as a superiority violation (and also under an interpretation of Chomsky's recent suggestions about chain formation under which shorter chains must be formed first). (98)b is however a problem under our account. As it stands it should be an ECP violation since it violates relativized minimality since what will be an intervening

_____

wh-phrase in embedded clauses. Note that if who in (i) of the previous footnote does move at s-structure then at LF, the moved why and who are no longer included in the same maximal projection. This may be responsible for the degraded status of (i) as compared to (96).

potential governor for the trace of why. Unless the trace of why is gamma marked at s-structure (contrary to Lasnik and Saito,1984), (98)b will be a problem under our account. There is, however, an alternative explanation for the grammaticality of (97)b. This involves the assumption that wh-movement in root clauses in English is actually to SPEC IP (cf. Pesetsky,1989). If that is the case, then the LF for (97)b will not be (98)b but (98)b' below:

(98)b' [$_{IP}$ what$_1$ [$_{IP}$ why$_2$ did John do t$_1$ t$_2$]]

The representation (98)a and auxiliary assumptions about wh-movement in English root clauses can be modified accordingly. Since nothing much in what follows depends on this assumption I will continue to give the representations in a conventional way.

3.8.2. Wide scope wh-in-situ in English:

The most significant problem for our suggestion that wh-in-situ in English is also a clause bound quantifier at LF comes from sentences like (99) in which what is interpreted as paired with matrix who (cf. Baker,1970).

(99) Who wonders where John bought what?

It may be noted here that for many speakers the who/what paired reading is nonexistent or very marginal. However given the fact that many speakers do find this reading possible to get, we have to account for such a reading without resorting to long distance movement of what at LF. There are two distinct possible approaches to this problem. One is to claim that what in (99) does not move at LF and is treated as a d-linked wh-phrase that can be coindexed with the matrix wh-phrase. This possibility essentially follows Pesetsky's (1987) remarks in this respect. This approach depends on answers to questions about whether or not absorption (necessary for forming paired questions, cf. Higginbotham and May,1980) requires government or not. There is some evidence that this approach is not plausible. This evidence also bears upon the question as to whether long distance movement is proper mechanism for forming wide scope questions or not. The evidence comes from sentences such as (100):

(100) Who thinks that Bill wonders where John bought what?

This sentence disallows a paired reading of matrix who and the embedded what phrase.[6] what can only be paired with

_____

[6]David Pesetsky(p.c.) notes that there is a contrast between (100) and (i) below:
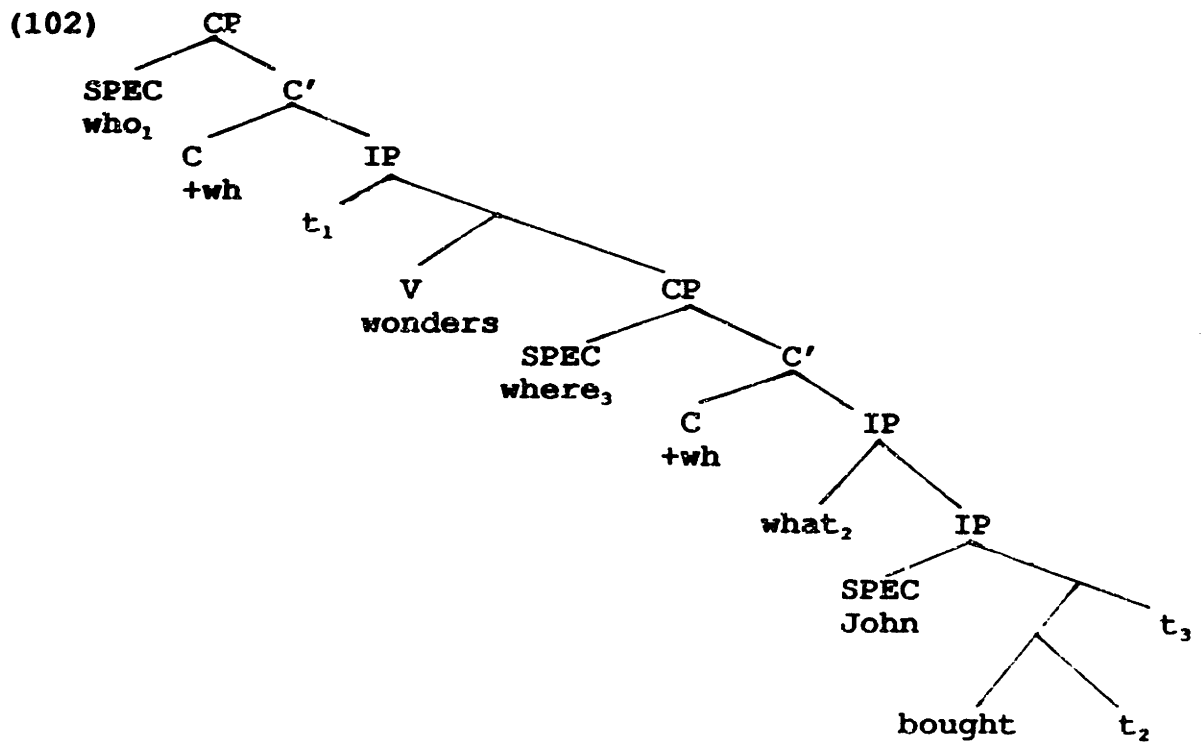(i) Who wonders where Bill thinks that John bought what?
(i) does allow for a paired reading between who and what while (100) does not.

where. If paired readings could be obtained without movement then (100) should allow for a paired who/what reading. This sentence also shows that long distance movement of what is not responsible for the paired who/what reading in (99). This is because (100) also allows for long distance movement of what under standard approaches. That is an LF like (101) is not ruled out under approaches such as Lasnik and Saito(1984);

(101) [CP who1 what2 [IP t1 thinks that Bill wonders where John bought t2]]

The unavailability of an LF like (101) argues against the long distance movement of the what phrase in sentences like (99) and (100).

Our account of wh-in-situ can be extended not only to get paired what/ who reading in (99), but to also rule out a similar possibility in (100). Our account is based on the original hypothesis of this chapter that wh-in-situ is universally a clause bound quantifier along with some suggestions in Fiengo et al (1988). This will derive an intermediate representation for (99) such as (102):

(102)

```
              CP
           /      \
        SPEC       C'
        who₁      /   \
                 C      IP
                +wh    /  \
                 t₁   
                      V        CP
                   wonders   /    \
                          SPEC     C'
                          where₃  /   \
                                 C     IP
                                +wh   /  \
                               what₂   IP
                                      /   \
                                   SPEC    t₃
                                   John   /  \
                                      bought  t₂
```
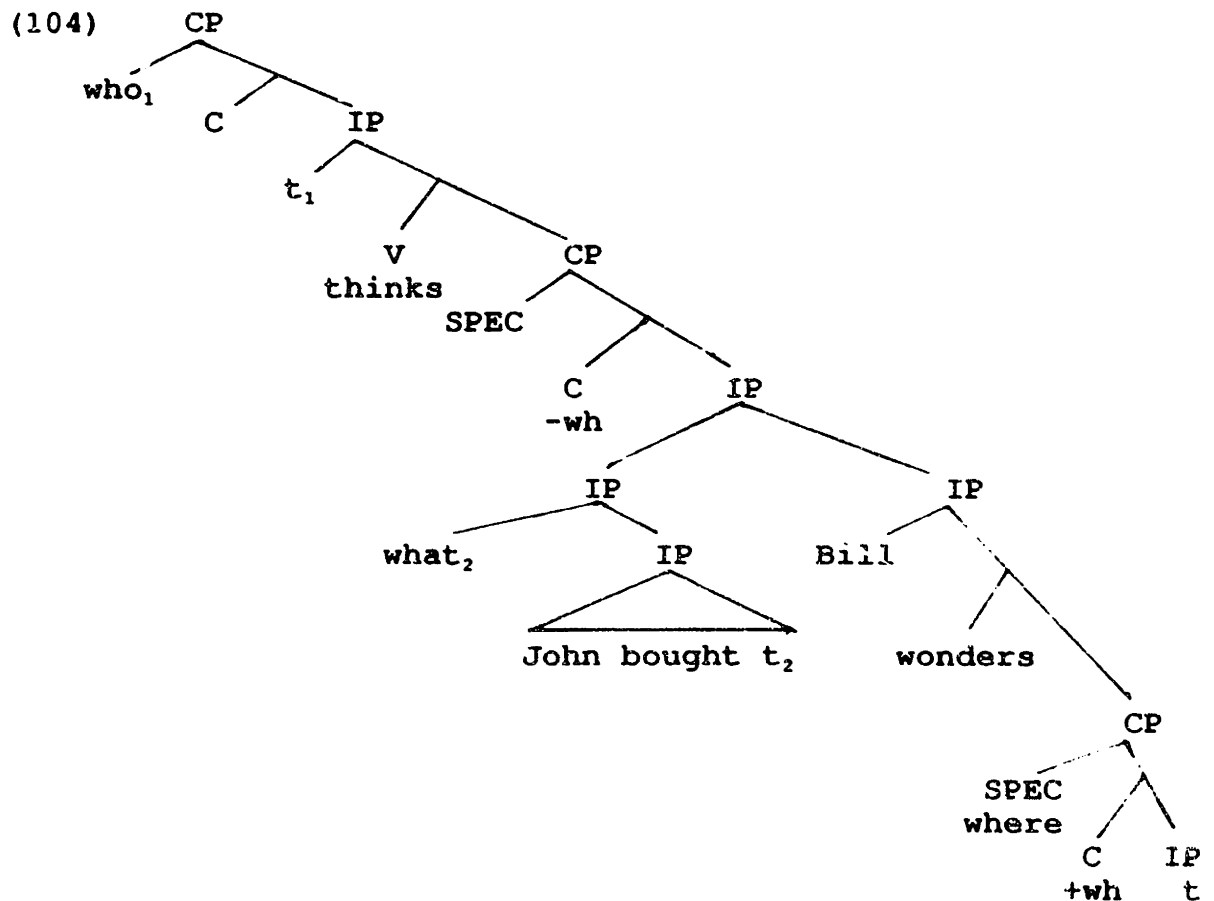
Following Fiengo et al(1988), we assume that the lowest IP
being quantificational can QR to adjoin to the matrix IP
yielding a representation like (103):

(103)

```
            CP
          /    \
       who₁     C'
               /   \
              C     IP
             +wh   /    \
                 IP       IP
               /   \     /   \
           what₂    IP  t₁
                   /  \     V      CP
              John bought  t₂ t₃  /    \
                                SPEC    
                                where   C     t?
                                       +wh
```

John bought t₂ t₃
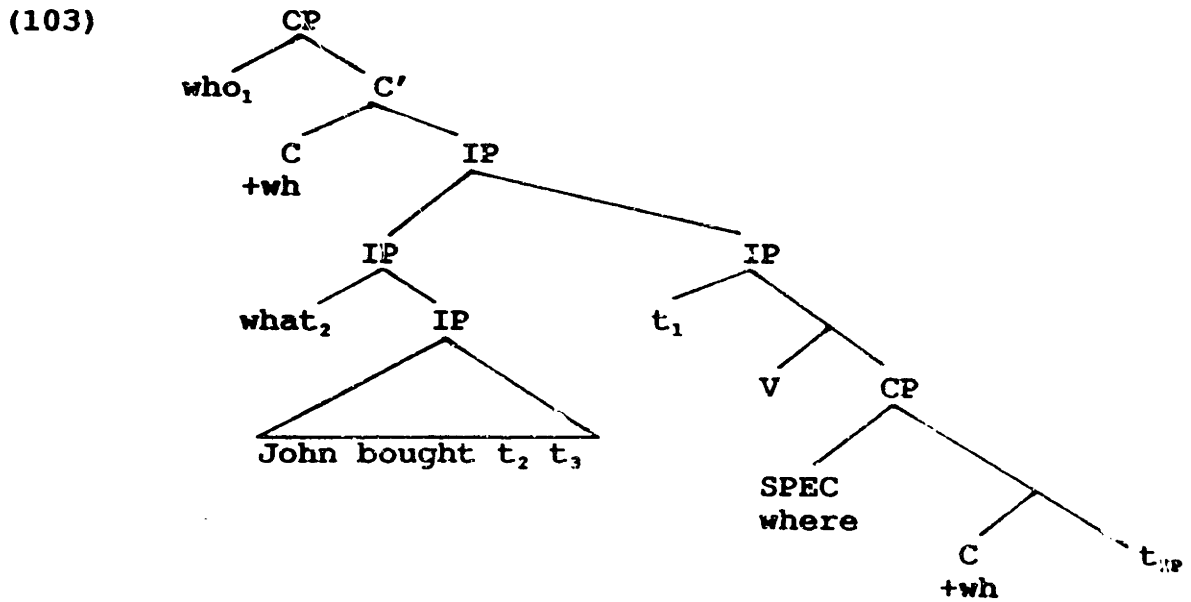
We are assuming that the lowest CP is L-marked and is not a barrier.

Note that in (103), _what_ is now governed by the matrix +wh as well as _who_. We suggest that this configuration suffices for absorption to apply. This would yield a paired _who/what_ reading for (99). On the other hand the clause boundedness of QR makes such a reading unavailable for (100) since _what_ is not governed at LF by _who_ as shown by (104).

(104)

```
          CP
        /
    who₁
         \
          C     IP
              /
            t₁
              \
               V      CP
             thinks  /
                   SPEC
                      \
                       C      IP
                      -wh    /
                           IP          IP
                          /  \        /  \
                     what₂    IP    Bill
                            /    \        \
                         /        \        \
                      John bought t₂     wonders
                                                \
                                                 CP
                                               /    \
                                           SPEC     /\
                                           where   /  \
                                                  C    IP
                                                 +wh   t
```

This approach then does not face the same problems as the

unbounded movement approach or the d-linking approach does.

3.8.3. On Adjunction to IP in English:

Chomsky(1986b) suggests that adjunction of wh-phrases to IP must be prohibited. Under Barriers system this is required to yield a subjacency effect in sentences such as (105):

(105)? What did John wonder whether Bill bought?

If _what_ was allowed to adjoin to the lowest IP then no single move in (105) will cross any barriers predicting (105) to be perfect. Since our system allows for adjunction to Ip as a possibility in Hindi it would be interesting to explore the possibility whether such a move could be made in English also. Under our approach then (105) must be a subjacency violation even if adjunction to IP is allowed.

One may note that even under a Barriers type approach, adjunction to IP must be allowed for quantifiers at LF. Barriers system therefore has to stipulate that only wh-phrases can not adjoin to IP at either s-structure or at LF. Furthermore, overt adjunction to IP of non wh-phrases is allowed under Lasnik and Saito(forthcoming, also see Baltin,1980) type approaches to topicalization in English. Frampton(1989) makes a proposal for allowing adjunction of wh-phrases to IP even in languages like English. Our

approach to this problem is somewhat similar to that of

Frampton in that it allows for free adjunction to IP. It may

be noted however that there could be independent conditions

on adjunction. We will follow Frampton in assuming that

there is a head government condition on adjunction. This

condition rules out adjunction of subject to IP in English

while allowing for adjunction of objects to it. Since Hindi

is a head final language, we will assume that both subjects

as well as objects will be able to able to adjoin to IP.[7]

As noted above, under our approach (105) should be perfect

given the possibility of the following derivation:

(106) What did John wonder[CP whether[IP t2 [IP Bill bought

t1]]

There are no barriers between t1 and t2 and between t2 and

what. Embedded CP is not a barrier (and we are assuming that

VP is not a barrier). This sentence will be a subjacency

violation only if t2 is not present but there is nothing in

our system that rules out the presence of t2 or rather

adjunction to IP as a possibility. I suggest that a

representation such as (106) actually violates a version of

---

[7]This does bring up the old problem about subject quantifiers
and their adjunction site at LF. The problem is somewhat compounded
if vacuous movement of root clause wh-in-situ is allowed as an
adjunction to IP at LF. We will ignore this problem here.

relativized minimality. Rizzi's(1989) account of relativized
minimality effects were originally formulated to yield ECP
type effects. Rizzi does note however that there is a
tension between relativized minimality and the notion of
barrier. Our approach to this problem would be to include
the notion of relativized minimality within the definition
of barriers. An informal way of doing it is characterized in
(107):[8]

(107) α is a barrier for β if α is a parent to a potential
(lexical) antecedent for β.

(108) α is a parent to β if α is a maximal projection or a
segment of a maximal projection immediately superior to β.

(107) has the effect of turning even a segment in an
adjunction structure into a barrier if that segment is a
parent of a potential antecedent for a trace. The bracketed
'lexical' part implies that the presence of the overt wh-
phrase is required and that intermediate traces themselves
are not relativized minimality inducers. This approach
brings Rizzi's approach closer to the Barriers approach in
that it unifies barriers for ECP with barriers for

---

[8]This definition will act as a supplement to the original
notion of barrier as a non L-marked maximal projection. Other
relevant definitions remain the same as in barriers except for the
fact that we are assuming that IP is barrier and VP is not.

subjacency.

(106) is now a subjacency violation because the embedded CP
that dominates (and is a parent of) the <u>whether</u> phrase
becomes a barrier for movement. Since the intermediate IP
adjoined trace is deletable, there is no ECP violation for
this trace. Consider now (109) which is parallel to (105)
except for the fact that the moved phrase is a subject.

(109) *Who does John wonder whether saw Bill?

As noted above, adjunction of subjects to IP is disallowed
and (109) is therefore correctly ruled out as an ECP
violation since the subject trace is neither antecedent
governed nor lexically governed.

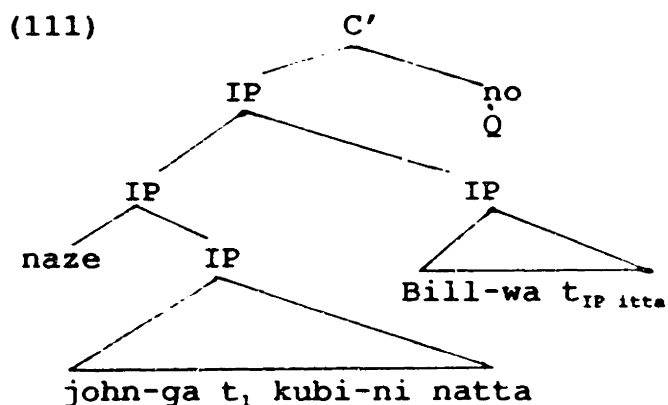### 3.9 wh-in-situ in Other languages:

Our treatment of wh-in-situ in Hindi also has implications
for the analysis of wh-in-situ in languages like Chinese,
Japanese and Korean. In this section I outline briefly how
an account like ours may be extended to the treatment of wh-
in-situ in these languages.

As is well known Chinese and Japanese have no syntactic wh-
movement (cf. Huang,1982; Saito,1984; Nishigauchi,1987).
Following Kim(1989) and the account that we developed for

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Hindi, we suggest that these languages also lack LF wh-movement to SPEC CP and have LF QR for the wh-in-situ. While this assumption is rather straightforward for simple clauses, there is an immediate problem when we turn to wide scope questions. Recall that Hindi does not permit a wh-in-situ in a non question complement. But Chinese, Japanese and Korean have no such problem. Thus the following Japanese example from Lasnik and Saito(1984) is readily construed as a matrix wh-question:

(110) Bill-wa [John-ga naze kubi-ni natta tte]itta no?
      Bill-topic John-nom why was fired   Comp said Q
      Why did Bill say that John was fired t?

Lasnik and Saito(1984) (see also Fukui,1989) assume that naze moves to the matrix Comp at LF. I suggest, following my account of Hindi, that Japanese also lacks COMP to COMP wh-movement at LF and the wide scope reading for naze is derived by a mechanism similar to the one that I proposed for English. That is, naze in (110) QRs to adjoin to the lower IP which in turn QRs to adjoin to the matrix IP. In this configuration the Q morpheme governs naze deriving a matrix question. The relevant representation would be:

(111)

```
                          C'
                _____/‾‾‾‾‾‾‾_____
              IP                       no
           __/‾\___                     Q
          /        _____
        IP                       IP
      _/‾\_                    __/‾_____
   naze    IP                /           \
        __/‾_____      Bill-wa  t_IP itta
       /            \
    __/‾‾‾‾‾‾‾‾‾‾‾\__
  john-ga  t_1  kubi-ni natta
```

This account can be extended to similar cases in Chinese and Korean though in Chinese an overt Q morpheme is not always present.

It may be noted that the Polish case discussed in Lasnik and Saito(1984, p.238) will receive a similar treatment. Polish requires only partial wh-movement in sentences like (112) below (taken from Lasnik and Saito,1984):

(112) Maria mysli, [ze   co [Janek kupil t]]

       Maria thinks that what Janek bought

       What does Maria think that Janek bought?

Lasnik and Saito note that (11) posits a problem for the view that LF wh-movement must originate from argument positions (Aoun el al,1980). Under the account that I am suggesting (112) has a representation similar to the one for Japanese (110), i.e., as in (111). The wh-phrase itself does not move any further even in Polish preserving the original

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hypothesis about prohibition on movement from A-bar positions at LF (also disallowing successive cyclic COMP to COMP movement of Huang,1982 and Lasnik and Saito,1984). What derives a matrix question reading for Polish is the QR of the lower IP that adjoins it to the matrix IP permitting the matrix +wh to govern the wh-phrase.

Note that the mechanism that we are suggesting here is very similar to the one that we suggested for kyaa questions for Hindi where we suggested that the lower CP adjoins to the kyaa particle at LF to derive matrix questions in Hindi. There is however a problem when we come to multiple embeddings in languages like Japanese. We noted that the presence of kyaa was obligatory in intermediate clauses in sentences like (113):

(113)a.*raam-ne socaa ki ravii-ne kyaa kahaa ki kOn sa
      Ram-erg thought Ravi-erg KYAA said   which
      aadmii aayaa thaa
      man   came
      Intended as: Which man did Ram think that Ravi say -
         came?

   b.*raam-ne kyaa socaa ki ravii-ne kahaa ki kOn saa
      Ram-erg KYAA thought   Ravi-erg said   which
      aadmii aayaa thaa
      man   came
      (=a)

   c. raam-ne kyaa socaa ki ravii-ne   kyaa kahaa ki
      Ram-erg KYAA thought   Ravi-erg   KYAA said
      kOn saa aadmii aayaa thaa
      which man   came
      (=a)

The dialect of Japanese most commonly reported allows only
sentences like (113)b suggesting that Japanese wide scope
questions may require a different treatment. I will
tentatively suggest that even sentences parallel to (113)b
contain abstract intermediate Q morphemes. It has been
suggested that such morphemes are overtly spelled out in
some Japanese dialects. Under our account Chinese will also
have such abstract Q morphemes that permit wide scope wh-in-
situ.

I should point out that another crucial difference between
Hindi and Japanese follows directly from our account. This
concerns wh-in-situ taking scope out of a complex NP. As
noted earlier, Hindi does not permit it making the sentences
with wh-in-situ in a complex NP strongly ungrammatical. We
suggested that this follows if the extraposed CP of the
complex NP was a barrier which would not permit QR of the IP
containing the wh-in-situ making the sentence a selectional
violation. Japanese does not have CP extraposition in
complex NPs. This suggests that QR of the IP containing the
wh-phrase should be possible at least for the cases of noun
complements making it possible to form matrix clause
questions for wh-in-situ in a subcase of complex NPs in
Japanese.

There are many facets to this problem. Some of these concern

the interpretation of wh-in-situ in islands (cf.

Nishigauchi,1986; Pesetsky,1987). Before leaving this

section I will note a couple of points. Under the account

sketched for wh-in-situ within complex NPs, we do not expect

any asymmetries between argument wh-phrases and adjunct wh-

phrases but it is well known that such asymmetries exist

(cf. Huang,1982; Lasnik and Saito,1984). However, from the

discussion in Fukui(1988) it appears that the asymmetries

cannot be very sharp since even naze can have wide scope

reading out of a complex NP is some cases. It is in this

context that our account makes certain predictions that seem

to tie in with Fukui's account in an interesting way. Fukui

notes that naze can take scope out of noun complements (at

least marginally) while it can't do so out of a relative

clause.

(114)a. *? Taroo-ga naze sore-o te-ni ireta koto-o
           Taro Nom why it   acc obtained   fact-ACC
           sonnani okotteru no
           so much be angry Q
           Why are you so angry about the fact that Taro
           obtained it t?

     b. * Taroo-ga sore-o naze wataita otoko-o sitte-iru no?
          Taro Nom it ACC why handed   man   know
          Why do you know the man to whom Taro handed it?

Fukui reports similar contrasts for naze scope from bridge

vs non bridge complements. Like Fukui we attribute contrasts

such as (114) to the fact that the complement of the noun in

(114)a may be L-marked while the corresponding relative

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clause is not. In our terms this implies that QR of the IP

containing the wh-phrase is possible out of the noun

complements while it is not in relative clauses. Similar

effects are expected in bridge verb vs non-bridge verb

contrasts and they do obtain as noted by Fukui. Note that

since Hindi noun complements as well as relative clauses are

extraposed obligatorily, they are expected to be barriers

for extraction of the quantificational IP and therefore no

contrast in grammaticality is expected in Hindi sentences

parallel to the Japanese cases. This expectation is

fulfilled as noted in earlier sections.

4.10. Conclusion: In this chapter, I have argued for an

approach to wh-movement which eliminates wh-movement to SPEC

CP at LF. This facilitates the formulation of the wh-

movement parameter. Languages are clearly divided as having

or not having wh-movement. If a language does not have wh-

movement to SPEC CP, then it does not have this movement at

LF either. Instead LF employs a rule of QR that moves the

wh-in-situ to adjoin to the minimal IP that contains it.

This approach yields a number of desirable consequences in

Hindi syntax. On the basis of some Hindi facts, I have

argued that a derivational approach to syntax is to be

preferred over a purely representational one.

I have suggested that the general approach developed in this

chapter can also be extended to other languages. In particular, I argue that wh-in-situ in English does not move to SPEC CP at LF. This indicates that the only rule that the syntax of LF may have is QR.

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