OBJECT NOUN PHRASE DISLOCATION IN MANDARIN CHINESE

by

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ABSTRACT

This dissertation studies leftward dislocation of object Noun Phrases in Mandarin Chinese within the framework of Government and Binding theory. Although the canonical word order in Chinese is S(subject)-V(erb)-O(bject), it also exhibits OSV and SOV word orders. After an introduction in Ch. 1, I discuss OSV constructions in Ch. 2. I argue that the S-initial object NP is moved there, since its association with a gap in the canonical object position obeys the subjacency condition. Based on several diagnostic tests, I propose that Chinese has two kinds of short-distance NP fronting: one is A'-movement and the other is A-movement. Adopting the Split Infl Hypothesis, I postulate a fully articulated clause structure for Chinese. In particular, I propose that the fronted NP in A-movement lands in [Spec AgrOP] as a kind of overt raising, while the one in A'-movement further leaves that spec position and is CP-adjoined. I also examine long-distance NP fronting, showing that it is invariably A'-movement.

In Ch. 3, I investigate object shift, which yields SOV constructions. I argue that this syntactic process represents a type of A-movement, not A'-movement as concluded in previous studies. Specifically, I propose that the subject NP and the object NP in this construction overtly raise to [Spec AgrSP] and [Spec AgrOP] respectively.

In Ch. 4, I examine the interactions between an object wh-NP and dou, the adverb of universal quantification. I propose that wh-phrases, like indefinites, can be either presuppositional or existential. If they are within VP (i.e. remain postverbal), they are subject to existential closure and get an existential/interrogative reading. If, however, they are outside VP (i.e. shifted to the left of dou), they define the range of the quantifier dou and obtain the presuppositional/universal reading. The conclusion is that there is a strict correlation between the S-structure positions of the wh-phrase and its interpretations. The exhaustive list reading of
the in-situ wh-object associated with the interrogative reading is derived from the fact that it is in the scope of *dou* at S-structure.

In Ch. 5, I summarize the major findings of this dissertation and raise several issues for future research.
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Chapter 1 Introduction

1.1. Preliminaries

This dissertation studies leftward dislocation of an object Noun Phrase in Mandarin Chinese within the theoretical framework of Government and Binding (GB) theory. Although the canonical word order in Chinese is SVO (Li and Thompson 1981, Huang 1982, Travis 1984), it is by no means the only possible S-structure word order. In particular, the object NP can appear S-initially as in (2), resulting in OSV word order; or it can appear in a position after the subject but before the verb as in the SOV order shown in (3):

(1) wo kan-guo zheben shu. (SVO: canonical word order)
   I read-asp this book
   'I have read this book.'

(2) zheben shu, wo kan-guo. (OSV)
   this book I read-asp
   'This book, I have read.'

(3) wo zheben shu kan-guo. (SOV)
   I this book read-asp
   'This book, I have read.'

For ease of exposition, I call cases like (2) 'object NP fronting' and those like (3) 'object NP shift'. In both cases, the interpretation of the moved object NP is the same in terms of truth conditions as when the object is in-situ. This contrasts with cases which contain a wh-object and an adverb *dou* 'all'. In these cases, different positions of the wh-object with respect to the adverb result in different interpretations. As is shown in (4a) below, when the wh-object is in situ to the right of the adverb, it has the interrogative reading; however, when it is shifted to the left of the adverb as in (4b), it obtains the universal reading:
a. Wh-object to the right of dou:

John dou chi-guo shenme?
John all eat-asp what
'What has John eaten?' (interrogative reading)

b. Wh-object to the left of dou:

ta shenme, dou chi-guo.
he what all eat-asp.
'He has eaten everything.' (universal reading)
NOT: 'What has he eaten?'

Sentences like (2), (3) and (4) constitute the empirical cases for investigation in the following three chapters. Specifically, I will address the following questions:

(A) In the literature, the S-initial NP in (2) has been analyzed either as being moved there (cf. Huang 1982, Li 1990 among others), or as being base-generated (cf. Xu and Langendoen 1985, Cheng 1991). The first question I address is which of these two conflicting analyses is preferable. If there is movement involved, what kind of movement does this syntactic process represent? Is it uniformly A'-movement as traditionally held (cf. Huang 1982), or can it also be A-movement as in Mahajan’s account of Hindi (1990)? Furthermore, given the current Split Infl Hypothesis (Pollock 1989, Chomsky 1992), what is the syntactic position of the fronted NP?

(B) Object NP shift, as shown in (3), has not received as much attention in Chinese syntax as NP fronting. I first examine what kinds of NPs are eligible to undergo this syntactic process. I then apply several diagnostic tests commonly used in the GB framework to determine the nature of this movement and its landing site.

(C) For cases like (4), I first establish a descriptive generalization for the S-structure positions of wh-objects under the interrogative and the universal readings. I then address the question of the role the syntactic representation plays in the derivation of the semantic representation of wh-NPs. Specifically, I consider the relation between the S-structure
representation and the LF representation for the interrogative and quantificational sentences respectively.

In the rest of this chapter, I will briefly discuss the theoretical assumptions I adopt throughout this dissertation and introduce some syntactic characteristics of Mandarin Chinese.

1.2. Theoretical Background

The analysis in this dissertation is presented within the Government and Binding syntactic model, developed in Chomsky (1981, 1986, 1991, 1993). This theory aims to account for complex distributional problems through the interaction of relatively autonomous modules of grammar. Each module is characterized by a small number of simple, universal, but in some cases parameterized principles. The particular model of grammar I adopt is represented in (5):¹

(5)  

D-structure  
|  
S-structure  
/   \  
Phonetic Form (PF) Logical Form (LF)

D-structure is related to S-structure by the general transformational rule 'Move α'. S-structure is related to the interpretive components, PF and LF, which provide the interface between formal grammar and something in the 'real world': acoustic/articulatory properties on one hand, and semantic properties on the other.

¹Differing from Chomsky (1993) who eliminates D-structure and S-structure, I assume the conventional T-model of GB syntax which postulates the existence of both structures. Nothing in this thesis crucially hinges on this difference.
1.2.1. Lexicon

The lexicon is the component of the grammar where lexical items are stored, along with idiosyncratic information about them, such as their category. There exists a distinction between two major types of syntactic category: lexical categories such as nouns, verbs and adjectives, and functional categories. The latter group constitute closed class items, which are generally phonologically and morphologically dependent and sometimes phonologically empty. These two category types are crucially exploited by the Split Infl Hypothesis to be discussed in detail in Ch.2.

1.2.2. Phrase Structure

Phrase structure is projected from elements which are selected from the lexicon. Projections are assumed to conform to the following schema (Chomsky 1986):

(6) \[\begin{array}{c}
XP \\
/ \\
YP \ X' \\
/ \\
X \ ZP
\end{array}\]

In this schema, all phrases have a tri-level structure: the head X and its complement ZP form an X'-level constituent and the specifier YP is attached at the higher XP level. Chomsky (1993) proposes that there are only a small number of syntactically relevant relations within this structure. One is the head-specifier relation, which is exemplified in the tree by the relationship between X and YP. Another holds between different heads in a tree, such as X and Z, the head of its complement ZP. In addition, YP and ZP are relevant for binding purposes. One further kind of structural relationship to which I will refer in this dissertation is 'c-command', which can be defined as follows: \(\alpha\) c-commands \(\beta\) iff \(\alpha\) does not dominate \(\beta\) and every \(\tau\) that dominates
\(\alpha\) dominates \(\beta\) (Chomsky 1986b:8). In the tree in (6), \(X\) c-commands \(ZP\) and everything contained in \(ZP\).

1.2.3. Checking Theory and Movement

Chomsky (1993) proposes that lexical items are inserted into syntactic structures with inflectional features already attached. During the course of the derivation, each feature must be checked, or licensed under identity with a feature on another element within the structure. The checking requirements of a lexical item can potentially motivate syntactic movement (see also Chomsky and Lasnik 1991). Although Chinese has no overt morphology, I adopt the feature-checking mechanism as a null hypothesis. In particular, I assume that the in-situ object in Chinese raises to \([\text{Spec AgrOP}]\) at LF for feature checking.

This section has presented a brief introduction to some of the notions which are central to GB theory and relevant to the discussion in later chapters. I delay presenting a more detailed discussion of certain concepts and assumptions until later.

1.3. A Brief Introduction to Mandarin Chinese

In this section, I review some major properties of Mandarin Chinese and discuss assumptions which are relevant to the dislocation of object NPs.

1.3.1. Word Order

Huang (1982) correctly points out that Chinese is head-final except for subcategorized complements. Within NPs, however, either Ns do not have subcategorized complements and hence are always head-final, or \(N\) is simply an exception to the generalization that
subcategorized complements follow their heads. In brief, Huang’s observation captures the fact that Chinese is VO, prepositional and N-final.

Although SVO is the canonical word order in Chinese, OSV and SOV are also allowed under some specific conditions, for instance, when the object NP is definite or generic. Indefinite NPs are excluded from this process:

(7) *yi\ben shu wo kan-guo.
    one book I read-asp
    *'One book, I have read.'

In later chapters, I will provide an account for why such a constraint holds in Chinese.

1.3.2. ASPP

Except for two controversial future tense markers (see Y. A. Li 1990:22), Chinese has no overt markers for tense, only postverbal aspect markers: *zhe* (durative), *le* ((im)perfective) and *guo* (perfective). Given these facts, I assume that TENSE in Chinese is syntactically non-existent (at least in non-future sentences). Instead, it has ASP as the head of the clause (cf. Cheng 1991). Adopting the Split Infl Hypothesis, I further assume that Chinese has AgrSP and AgrOP despite the absence of morphological evidence. I delay a detailed discussion of Chinese clausal structure until Ch.2.

1.3.3. LF Movement of "V+Aspect Marker"

Adapting Chomsky (1993), I assume that the aspect marker is generated as an affix on the verb at D-structure, and that the verb-aspect amalgamation remains under the V node at S-
structure². Since Chinese is a morphologically poor language, the empty φ features (i.e. person, number) of the ASPECT head are invisible at PF. In accordance with the Economy and Procrastination principles (Chomsky 1993), the V+aspect amalgamation does not have to raise to the ASPECT head for φ feature checking until LF.

1.3.4. Bounding nodes in Chinese: NP and S

As in English, the bounding nodes for subjacency in Chinese are NP and S (Huang 1982). As illustrated in example (8), if an NP moves across more than one bounding node, a subjacency violation will occur, making the sentence ungrammatical:

(8) *zheben shu1, wo renshi [, t_j xie  t_i ] de ren_j .
this book I know write DE person
*"This book, I know [ the man [ who wrote ] ].

In this dissertation, I use the subjacency effect as the major test to argue for syntactic movement of the S-initial NP in the OSV word order.

1.3.5. No S-structure wh-movement, but Weak Crossover (WCO) effect obtains

One noted feature of Chinese is that it has no S-structure wh-movement. In particular, the word order of a wh-question does not differ from that of its declarative counterpart:

²Evidence for such an assumption comes from word order facts. For instance, insertion of material between the verb and the aspect marker is forbidden as is shown in (ii), and a preverbal PP argument or adjunct must precede the V+aspect amalgamation, as is shown in (iii):

(i) wo yong gunzi da-guo Bill.
I with stick hit-asg Bill
'I have hit Bill with a stick.'

(ii) *wo da yong gunzi guo Bill.
I hit with stick asp Bill

(iii) *wo da-guo yong gunzi Bill.
I hit-asp with stick Bill
In his seminal work on Chinese syntax, Huang (1982) proposes that, despite its absence at S-structure, wh-movement occurs at LF in wh-in-situ languages like Chinese. This analysis is supported by the WCO effect shown in (10b), on a par with the English example in (10a):

(10) a. *"Who_1 did his_3 brother see t_4?"

b. *tade_3 didi kanjian-le shei_4?
    his brother see-asp who
    *"Who_1 did his_3 brother see t_4?"

In contrast, Aoun and Li (1994) propose that there is no LF wh-movement. Their account for the WCO effect is that a [+Q] morpheme in COMP binds both the wh-phrase and a co-indexed pronoun at LF. In this thesis, I adopt Aoun and Li (1994) as will be shown in Ch.4.

1.3.6. BA constructions

In Chinese, a definite NP can not only be preposed to a preverbal position as in (11b), but also appear in BA constructions as is shown in (11c):

(11) a. wo kanwan-le zheben shu. (canonical word order)
    I finish-read-asp this book
    'I have finished reading this book.'

b. wo zheben shu kanwan-le. (object NP shift)
    I this book finish-read-asp
    'I have finished reading this book.'
c. wo **BA** zheben shu kanwan-le. (BA construction)
   I **BA** this book finish-read-asp
   'I have finished reading this book.'

**BA** has been analyzed as a coverb, a preposition or a dummy Case-assigner (cf. Li and Thompson 1981, Huang 1982, and Cheng 1991:14). Though both **BA**-NP and the shifted NP are in preverbal but post-subject positions, they are not derived by the same process, and are located in different positions. I will discuss these differences in detail in Ch.3.

1.4. An Outline of the Dissertation

This dissertation is organized as follows. In Ch.2, I first argue that when an S-initial object NP in OSV constructions is construed with a gap in the canonical object position, this empty category should be analyzed as the trace left by the movement of the NP. The major piece of evidence for this claim is that if the empty category is embedded in an island, the sentence displays a subjacency effect. In the course of the discussion, I also examine cases Cheng (1991) and others use to argue for the non-movement analysis. Having established that movement is involved in OSV constructions, I then apply several diagnostic tests to this syntactic process. I propose that Chinese has two kinds of short-distance NP fronting. Specifically, as is the case in Hindi (Mahajan 1990) and Japanese (Saito 1992), one type of fronting is A'-movement and the other is A-movement. In accordance with the Split Infl Hypothesis, I postulate a fully articulated clause structure for Chinese. In particular, I propose that the fronted NP in A-movement lands in [Spec AgrOP] via a kind of overt raising for feature-checking, while the one in A'-movement further moves from that spec position and gets CP-adjoined. This chapter ends with a discussion of an alternative analysis based on empty operator movement, and on the suspension of subjacency effects observed in extraction out of the S-initial domain.

In Ch.3, I discuss object NP shift, which yields SOV constructions. This process is
similar to NP fronting in that (a) the object NP is also 'dislocated', and (b) it must be definite or generic. It differs from the latter in that it lands in a position between the subject and the verb. Based on diagnostic tests including the absence of reconstruction effects and locality restrictions, I conclude that object shift represents a type of A-movement, just like the short-distance shift found in Hindi or Japanese (Hindi 1990, Saito 1992). I further propose that in the object shift cases, both the subject NP and the object NP overtly raise to [Spec AgrSP] and [Spec AgrOP] respectively, resulting in the SOV word order. This chapter concludes by addressing some problems inherent in the A'-type analysis proposed in Z. Lu (1991) and F. Lu (1993).

Ch. 4 investigates the position of a wh-object with respect to *dou* and the various readings associated with it. I first discuss the existence of the interrogative/exhaustive list reading associated with a wh-object to the right of *dou* at S-structure, an empirical fact which has not been discussed in the GB literature. I also provide data showing that a universal reading obtains if the wh-object is shifted to the left of the adverb. Based on Diesing (1992), I propose that wh-phrases, like indefinites, can be either presuppositional or non-presuppositional. If they are within VP, they are subject to existential closure and get the existential/interrogative reading. If, however, they are outside VP, they define the range of the adverb of quantification *dou* and obtain the presuppositional/universal reading. The conclusion is that there is a strict correlation between the S-structure positions of a wh-NP as an indefinite in the context of *dou* and its LF interpretations (cf. Diesing 1992 on German and other languages). The exhaustive list reading of the wh-phrase associated with the interrogative reading is derived from the fact that it is in the scope of *dou* at S-structure. In the last section of this chapter, I examine different syntactic structures where a wh-phrase and *dou* occur, and the resultant readings associated with the
former.

In Ch. 5, I summarize the major findings of this research and discuss their relevance to the study of Universal Grammar. I also bring up some questions as potential research topics for the future.
Chapter 2 Object NP Fronting

Chinese has constructions where a sentence-initial (S-initial hereafter) NP is related either to a full NP in the clause following it as in (1), or to a pronoun as in (2), or to an empty NP position as in (3). There is usually a pause between this S-initial NP and the rest of the sentence, which is traditionally known as the 'comment clause' (cf. Li and Thompson 1981).

(1) zheke shu1, yezi hen da.
    this tree leaves very large
    'This tree, its leaves are very large.'

(2) zhege ren1, wo jian-guo ta.
    this man, I meet-asp him
    'This man, I have met him.'

(3) zhege ren1, wo jian-guo e.
    this man, I meet-asp
    'This man, I have met.'

In the literature on Chinese syntax, the S-initial NPs in cases like (1) and (2) have been analyzed as base-generated while the one in (3) has received different treatments (cf. Huang 1982, Xu and Langendoen 1985, Li 1990, Cheng 1991, Xue 1991, Z. Lu 1991). In this chapter, I focus on investigating sentences like (3). I argue that (a) the S-initial NP is not base-generated, but is moved there; and (b) in contrast to the traditional analysis, this syntactic operation can be either an A-movement or an A'-movement. I use the theory-neutral term 'object NP fronting' to refer to the movement exemplified in (3), since topicalization as used in the literature implies A'-movement.
2.1. The S-initial NP: Base-generation vs. Movement

In sentences like (3) repeated below,

(3) zhege ren, wo jian-guo e.
    this man, I meet-asp
    'This man, I have met.'

the origin of the S-initial NP has been analyzed in various ways in the literature: Huang (1982) and Li (1990) argue that it is moved to the S-initial position while Xu and Langendoen (1985) and Cheng (1991) claim that it is base-generated, co-referent to a pro in the sentence by a kind of Left Dislocation. The purpose of this section is to examine the relevant data and to maintain the movement analysis. I will show that a subjacency effect is observed if the S-initial NP is related to a gap embedded in an island. I use this as a test to argue for the movement analysis for the NP. In the process of the discussion, I will also show that subjacency is suspended in some structural configurations where it is expected to obtain. A structural generalization is proposed governing these cases.

2.1.1. Relating to a Gap in a Relative Clause

As discussed in Huang (1982), a relative clause is an island for movement in Chinese.

In this chapter, I use subjacency as a test to support the movement analysis for object NP fronting: if a subjacency effect obtains in relating an element and a gap embedded in an island, it indicates that there must be syntactic movement involved.\(^1\)\(^2\) For ease of presentation, I use

---

\(^1\)One may argue that sensitivity to subjacency does not necessarily indicate that the NP is moved. What is moved may be an empty operator predicated of the S-initial NP. See Section 2.3.1. for a discussion of this alternative analysis.
the subscript \[\ell_p\ldots\] to mark clause boundaries, although I assume a fully articulated clausal structure for Chinese (see Pollock 1989 and others) which will be discussed later. Relevant data is given below, organized into five sets.

SET A. The gap is embedded in a relative clause in object position. As is shown below, relating to a gap in such a configuration is ungrammatical, no matter whether the gap itself is in the subject or the object position of the relative clause:

(4) The gap is the subject of the relative clause:

\[\text{*nage ren}_1, [\ell_p \text{ wo du-guo } [\ell_p \text{ t}_1 \text{ xie t}_1] \text{ de shu}_j].\]

\[\text{that man I read-asp write DE books}\]

\[\text{'*That man}_1, \text{ I have read books which t}_1\text{ wrote.'}\]

(5) The gap is the object of the relative clause:

\[\text{*nage xuesheng}_1, [\ell_p \text{ wo zhengzai zhao } [\ell_p \text{ jiao-guo t}_j] \text{ de laoshi}_j].\]

\[\text{that student I now look-for teach-asp DE teacher}\]

\[\text{'*That student}_1, \text{ I am looking for the teacher who has taught t}_j\text{.'}\]

In contrast to the two cases above, if the gap is replaced by a resumptive pronoun, both (4) and (5) become grammatical, exactly like their English counterparts:

(6) \[\text{nage ren}_1, [\ell_p \text{ wo du-guo } [\ell_p \text{ ta}_1 \text{ xie t}_1] \text{ de shu}_j].\]

\[\text{that man I read-asp he write DE books}\]

\[\text{'That man}_1, \text{ I have read books which he wrote.'}\]

\[\text{\textsuperscript{2}Xue (1991) explores similar extraction facts in Chinese. As discussed below, the conclusion he reaches is different from mine, as is his analysis, which is conducted within the theoretical framework of Generalized Phrase Structure Grammar.}\]
(7)  **náge xuěshēng**, [_{IP} wǒ zhèngzài zhào [_{AP} tǐ jiào-guò tǐ_{2}] de lǎoshī_{2}]].

that student  **I** now look-for  teach-asp him  DE  teacher

'That student, I am looking for the teacher who has taught **him**.'

If we assume that there is movement involved in (4) and (5), their ungrammaticality is accounted for. Subjacency is violated, since the fronted NP has to cross three bounding nodes (which are IP and NP in Chinese) to get to the S-initial position.

SET B: The gap is in a relative clause contained in a prepositional object NP. As is shown in examples (8-9), such structures are also ungrammatical:

(8)  **zhében shù_{1}**, [_{IP} jīngli yījīng [_{AP} gei [_{IP} tǐ xìe tǐ_{2}] de rén_{2}]] fa-le jiāngjīn ].

this book  manager already to  write  DE  man  give-asp reward

'*This book_{1}, the manager has already given a reward [to [ the man [ who wrote t_{2}]]].

(9)  **zhége rén_{1}**, [_{IP} jīngli yījīng [_{AP} gei [_{IP} tǐ xìe tǐ_{2}] de shū_{2}]] chu-le jiáqian ].

this man  manager already to  write  DE  book  give-asp price

'*This man_{1}, the manager has already offered a price for [the book [ which t_{2} wrote ]].

Again, the fact that subjacency obtains indicates that the S-initial NP is moved out of an island to its S-structure position.

SET C. The gap is in a relative clause in subject position. In contrast to the data in Sets A and B, relating the S-initial NP with a gap in such a position does not induce ungrammaticality:

(10) The gap is the subject of the relative clause:

**náge rén_{1}**, [_{IP2} [_{IP1} tǐ chuān tǐ_{2}] de yīfū_{2}] hén zāng].

that man  wear  DE  clothes  very dirty

Lit.: 'The man_{1}, [the clothes_{2} [which t_{2} wears]] are very dirty.'
(11) The gap is the object of the relative clause:

\[ \text{naben shu, [np [ip that] kan-guo de ren] bu duo]. } \]

that book read-as people not many
Lit.: 'That book, [people [who have read them]] are not many.'

In these two examples, the S-initial NP can relate to the gap across three bounding nodes without showing subjacency effects, a fact which may cast doubt on the movement analysis I have argued for so far. However, I propose that the absence of a subjacency effect in these cases does not necessarily mean that the S-initial NP is NOT moved there. Based on the empirical facts in Sets A and B, I maintain the movement analysis even for cases in Set C and attribute the lack of subjacency to the particular structural position of the gap. Notice that the gap is in an island contained in the S-Initial subject position. This suggests that this particular position may possess some special property that somehow voids the subjacency effect (see 2.3.2.2. for an account). In fact, in addition to crosslinguistic evidence, this hypothesis is supported by data in later sections where the S-initial NP relates to a gap in a sentential subject or a sentential complement to a subject NP.

SET D. An S-initial PP or adverb is related to a gap in a relative clause. I am not focusing on adverbial movement in this dissertation, but for completeness, I will briefly look at cases involving an S-initial PP and adverb. Notice that if the gap is not in an island, an S-initial PP or adverb can be construed with either the matrix clause or (marginally) with an embedded clause:

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3Hoji (1985:158-62) shows that in Japanese the contrastive topic NP-wa can be associated with a gap in a relative clause in subject position, but not in object position. Specifically, the gap as the subject/object of a relative clause in subject position is ok while the gap as the object of a relative clause in object position is bad. My prediction that the gap as the subject of a relative clause in object position is also bad has been confirmed by my Japanese consultants.
(12)  zai lou-shang, wo ti tingshuo [ ni ti fang-lei yiben shu ].
      at upstairs I hear you put-asn a book
      'Upstairs, I hear that you put a book.'

(13)  zuotian, wo zhidao ti [ ni ti duwan-le zheben shu ].
      yesterday I know you finish-read this book
      'Yesterday, I know that you finished reading this book.'

If the gap is embedded in a relative clause, the construal of the S-initial PP or adverb is complicated. It can be easily construed with the matrix clause, but its construal with the relative clause depends on the position of the NP containing the island.

(I) The gap is in a relative clause in object position: In the following set of data, an S-initial PP or adverb can only be construed with the matrix clause, not with the relative clause contained in an NP in object position (see also Li 1990:198).

      at that room-in I now look-for John write DE that book
      'In that room, I am looking for [the book [that John wrote ti]] ti.'

(15)  zuotian, wo ti kanjian-le yixie [ ti t i shou-le shang ] de xuesheng.
      yesterday I see-asn some receive-asn wound DE students
      'Yesterday, I saw [some students [who were wounded t i]] ti.'

(II) The gap is in a relative clause in subject position: In contrast to the data in (I), an S-initial PP or adverb can be (marginally) construed with a relative clause in the subject NP. Admittedly, the construal is not as natural as the one with the matrix clause, but it is better than the construal with the relative clause contained in an NP in object position, as shown in (I) above:
In brief, the data in (I) is parallel to those where an S-initial NP is related to a gap in a relative clause contained in an object NP or in a prepositional object NP; the data in (II) is similar to those where an S-initial NP relates to the gap in a relative clause in subject position. The conclusion that emerges is that (a) the S-initial PP/adverb is moved there, and (b) lack of subjacency in (II) should be explained along the same line as for the data in Set C.

SET E: Summary and Apparent Counterexamples. To sum up, except when relating the S-initial NP to a gap in a relative clause in subject position, relating to a gap in a relative clause displays a subjacency effect. This constitutes the major piece of evidence for the claim that the S-initial NP does involve movement.

In recent studies on Chinese syntax, examples are provided to show that relating an S-initial NP to a gap in a relative clause in object position does not produce subjacency effects. Here are the two sentences culled from the relevant works:

(18) zhexie hua, wo dou mei kanjian [laox[b t i xihuan ei de ren].
these painting I all not see like men
"These paintings, I have not met a person who likes [them]."
(From Cheng 1991:147)
(19) *zhege wenti*, wo cong lai mei yudao-guo [\(_i^\text{sp} [\_t^i \text{neng huida e}_i \text{de ren}_i] \text{].*}

This question I ever not meet-asp can answer DE man
'This question, I have never met a person who can answer [it].'
(From Xu and Langendoen 1985:15)

According to these authors, lack of a subjacency effect indicates that the S-initial NP is base-generated, and that the gap e\(_i\) is a base-generated pro. Apparently, the movement approach as defended here has a problem: it predicts that examples (18-19) should be ungrammatical since the trace is embedded in an island contained in an object NP.

Notice that the fronted NPs in (18-19) are [-human] NPs which normally cannot be referred to by overt pronouns in Chinese:

(20) *zhexie xuesheng wo dou jiao-guo, wo hen xihuan tamen.*
these students I all teach-asp I very like them
'I have taught these students, and I like them very much.'

(21) *zhexie shu wo dou kan-guo, wo hen xihuan (*tamen).*
these books I all read-asp I very like them
'I have read all these books, and I like them very much.'

Based on the prohibition against using pronouns for [-human] NPs, one may hypothesize that (18-19) are generated as Left Dislocation constructions with an overt resumptive pronoun in the position of the gap. Later at PF, the language-specific prohibition deletes the overt pronouns, leaving a gap behind. However, there are reasons to believe that this hypothesis is not a valid one.

First, if e\(_i\) in (18-19) is the trace of PF deletion of an overt resumptive pronoun or is a

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They acknowledge that the acceptability of (19) is questioned by some speakers.
real pro as claimed by Xu and Langendoen (1985) and Cheng (1991), it should not exhibit a subjacency effect if it is further embedded in another island:

(22) *zhexie hua_{i}, wo hai mei kanjian \[_{np} \{_{p} t_{i} \{_{p} \{_{p} John xihuan e_{i} \} \} \} \} j zheyi yaoyan \].
*These painting I yet not see spread John like this rumour
DE man

(23) zhexie yanyuan_{i}, wo han mei kanjian \[_{np} \{_{p} t_{i} \{_{p} \{_{p} John xihuan tamen_{i} \} \} \} \} j zheyi
these actors I yet not see spread John like them this
rumour DE man

'These actors, I have not met a person who spreads the rumour that John likes them.'

In (22), e_{i} is separated from the S-initial NP by two islands. Specifically, it is embedded in the sentential complement to the NP 'rumour' which is in turn embedded in a relative clause in object position. If this e_{i} were a pro or a trace of PF deletion of a resumptive pronoun, it would be judged on a par with the following sentence which contains an overt pronoun:

(23) zhexie yanyuan_{i}, wo han mei kanjian \[_{np} \{_{p} t_{i} \{_{p} \{_{p} John xihuan tamen_{i} \} \} \} \} j zheyi
these actors I yet not see spread John like them this
rumour DE man

'These actors, I have not met a person who spreads the rumour that John likes them.'

The reason why (23) is grammatical is that both the S-initial NP and the resumptive pronoun are base-generated. Since they are not related by movement, they are insensitive to the intervening islands. Returning to (22), the fact that it exhibits a subjacency effect suggests that the S-initial NP must be moved there from the object position, and that the object empty category is indeed the trace of movement, not a pro or the trace left by PF deletion of a resumptive pronoun.

Second, the head nouns in both (18-19) are non-specific. If they are changed to [+specific] nouns by being modified by 'that', the sentences become very bad:
(24)  *zhexie hua*1, wo dou mei kanjian [\textsubscript{wp} t\textsubscript{j} xihuan e\textsubscript{j}] de nage ren\textsubscript{j}].
these painting I all not see like DE that person
'**These paintings\textsubscript{i}, I have not met that person who likes t\textsubscript{i}.'

(25)  *zhege went\textsubscript{i}, wo congai mei yudao-guo [\textsubscript{wp} t\textsubscript{j} neng huida e\textsubscript{j}] de nage ren\textsubscript{j}].
this question I ever not meet-asp can answer DE that man
'*This question\textsubscript{i}, I have never met that man who can answer t\textsubscript{i}.'

Contrast these two examples with the following grammatical example where an overt resumptive
pronoun is embedded in a relative clause in a specific NP:

(26)  John\textsubscript{i}, wo hai mei jian-guo [\textsubscript{wp} t\textsubscript{j} xihuan ta\textsubscript{j}] de nage ren\textsubscript{j}].
John I yet not meet-asp like him DE that person
'John\textsubscript{i}, I have not found that person who likes him\textsubscript{i}.'

The significance of the contrast is that if the empty category in (24-25) is a pro or the trace of
PF deletion of an overt pronoun, they should receive the same grammaticality judgement as (26).
This prediction is not fulfilled.

I propose that the contrast between (24-25) and (26) is accounted for if the empty
category in the former two examples is analyzed as a trace left by the movement of the S-initial
NP. Since the trace is in an island contained in a specific NP, movement out of this NP
constitutes a violation of subjacency and of the Specificity Condition which prevents extraction
out of a [+specific] NP (Huang 1982:419 quoting May 1977 and others; see also Nishigauchi
1990). In contrast, in example (26) with the resumptive pronoun, there is no movement
involved, and the Specificity Condition has no effect on the sentence.

Also notice that if (18-19) are changed from negative sentences into affirmative ones,
they become ungrammatical, presumably because the nonspecific reading of the containing NP
becomes unavailable, or difficult to get, in the absence of negation:
(27) *zhexie hua_i, wo dou kanjian [op t_j xihuan e_i de ren_j].
these painting I all see like DE men
"*These paintings, I have met the people who like t_i."

(28) *zhe ge wenti_i, wo yudao-guo [op t_j neng huida e_i de ren_j].
this question I meet-asp can answer DE man
"*This question, I have met the people who can answer t_i."

The proposal that specificity plays a role in (18-19) is supported by the following observation: if the object NP is modified by renhe 'any' under negation and is thus unambiguously nonspecific, extraction out of it is more acceptable. Look at the following sentences:

(29) zhaxie hua_i, wo mei kanjian renhe [op t_j xihuan e_i de ren_j].
these painting I not see any like DE men
'These paintings, I have not met any person who likes [them_i].' (cf. (18))

(30) zhe ge wenti_i, wo cong lai mei yudao-guo renhe [op t_j neng huida e_i de ren_j].
this question I ever not meet-asp any can answer DE man
'This question, I have never met any person who can answer [it_i].' (cf.(19))

What the last two sentences suggest is the mirror image of the Specificity Condition.5
Specifically, the generalization is that the more non-specific an NP is, the easier extraction out of it becomes. Assuming this generalization is correct, the next question is how to implement it syntactically, an issue which I leave it open for future research.6

5I owe my discussion of this part to Henry Davis and Hamida Demirdache.

6James Huang (p.c.) suggests that in cases like (18-19), there is an 'invisible but overt' inanimate pronoun. But the question is if there is such an invisible pronoun, why does the sentence display a subjacency effect if the gap is further embedded in another island, in contrast to an overt pronoun? He also correctly points out that these two examples show that non-referentiality may be a necessary condition for fronting, but it still remains that Subjacency would block any such extraction. One possible solution to this problem is to hypothesize that L-marking targeting the head NP penetrates to its relative clause CP if the NP is non-specific (Henry Davis p.c.), thus voiding the CP of its barrierhood. This technical speculation entails that L-marking or subjacency is inherently tied to the Specificity Condition, an implication which needs to be further studied in the long run. Also see Ch.4. for the proposal of (wh-) feature percolation out of non-specific NPs.
In brief, the exceptional cases (18-19), cited from Xu and Langendoen (1985) and Cheng (1991), do involve movement. This is because the embedded empty object displays island effects if it is further embedded in another island, as is shown in (22). Moreover, these two examples show Specificity Condition effects as illustrated in (24-25). Their grammaticality should perhaps be attributed to some property associated with the non-specific interpretation of the containing object NP.

To sum up section 2.1.1, there is a subjacency effect observed in construing the S-initial NP with the gap in a relative clause. This indicates that the NP is moved there from the relative clause, not base-generated S-initially. The data also exhibit two types of exceptions to the subjacency effect. One concerns construal between an S-initial NP and a gap contained in a relative clause in subject position (i.e. in \[ [\_p [\_p [\_p ... e ..] ...]] \]); an account for it will be offered in section 2.3. The other cases are discussed by Cheng (1991) and Xu and Langendoen (1985); I suggest that an account for these cases lies in the non-specific nature of the containing NP under negation.

2.1.2. Relating to a Gap in a Sentential Subject

In this section, I investigate cases where an NP is related to a gap contained in a sentential subject. Surprisingly, as in relativization out of a relative clause in subject position, there is no subjacency effect, even though two bounding nodes are crossed. I conclude, therefore, that the Sentential Subject Condition (SSC) does not hold in Chinese. Later in this section, I will discuss cases Huang (1982) cites for the opposite claim. Relevant data illustrating the point are provided below:
(31) The gap is in the subject position of a sentential subject:

zhexie ren, wo bingbu renwei ip1 [gap ip1 t_i gan zhezhong shi] bu heshi/hen qiguai.
these people I not think do this thing not proper/very strange 'These people, I do not think that (for them) to do this kind of thing is not proper/very strange.'

(32) The gap is in the object position of a sentential subject:

zhexie shi, wo bingbu juede ip1 [ip2 [gap ta shuo t_i] ] bu heshi/hen qiguai .
these matter I not feel he say not proper/very strange 'These things, I do not think that for him to talk about (them) is improper/very strange.'

In these sentences, the S-initial NP can be related either to the subject or object NP of the sentential subject, even though three bounding nodes are crossed. Notice again that the domain of the gap is the S-initial subject, i.e. [ip [ip [gap ..]]]. This recalls the case involving the gap in a relative clause in subject position, discussed in the section 2.1.1. Despite the lack of subjacency, I still maintain that there is movement involved, and that what suspends the subjacency effect has to do with a particular structural configuration.\(^7\)

Using lack of subjacency effects as evidence, Xu and Langendoen (1985:16) claim that a gap embedded in a sentential subject is in reality a pro. However, ungrammaticality will result if the gap is further embedded in an island like a relative clause, a surprise under the pro approach:

(33) *zhexie ren, wo jian-guo ip1 t_i shuo [ip [e_i gan zhezhong shi]] bu heshi ] de ren_j].
these people I meet-asp say do this thing not proper DE man
'*'These people, I met a man who said that [for t_i] to do this kind of thing is not proper.'

\(^7\)Jan Koster (1978:57) proposes that 'sentential subjects [in English] do not exist. Instead, there are satellite sentences binding the (phonologically zero) NP subject in the main sentence. In this conception, the main sentence is taken as an open sentence, satisfied by the satellite'.

If this 'satellite sentence' is A'-adjoined, extraction out of it can be accounted for by using the proposal advanced in Lasnik and Saito (1990). (See section 2.3.2. for details). I thank Leslie Saxon for directing me to Koster's work.
Compare (33) with the following sentence where the gap is replaced by an overt resumptive pronoun:

(34) zhêxié rén₁, wo jìan-guo [wɔ̌-[{ t̪] shuo [wɔ̌-[{ t̪] tamen₁ gan zhezhòng shi)] bu heshi] these people I meet-asp say they do this thing not proper de rén₁].
DE man
'These people, I met a man who said that for them, to do this kind of thing is not proper.'

To conclude, the fact that the gap displays a subjacency effect if it is further embedded in an island rules out the possibility that it is a pro. It must be a trace left by movement.

As part of his account of subjacency, Huang (1982) claims that Chinese displays the SSC. Note that in one of his later works (1984:562), he suggests that Chinese appears to lack the SSC effect as argued here. Below, I will review the data used in Huang (1982) to illustrate the SSC. I am interested in finding out how the examples formerly attributed to the SSC can be explained independently of this constraint. Notice that Huang’s judgement differs for each case in the following set of data.

(35) *wo mai-le [wɔ̌-[ Lisi mei kan t̪₁] zhen_qiguai] de naben shu].
I bought-asp Lisi not read really strange DE that book
*I bought the book, which [[ the fact that Lisi did not read t₁ ] is very strange].

(From Huang 1982:459 his (18)):

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8Huang (1984) does not explain why (35) below (from Huang 1982) is ungrammatical if it is not attributed to the SSC. See section 2.3.2.1. for more discussion of Huang (1984).
Let us analyze the contrast by looking at the predicates involved in the three sentences. First, if we change the embedded predicate *'really strange'* in (35) to that as used in (36), (35) becomes acceptable.

Below is another example like (35), but with a different embedded predicate, and hence a different judgement. This again shows that the type of predicate involved is relevant in
determining grammaticality judgement.

\[(35'')\text{?wo mai-le [\text{ap} [, [\text{ap} [, Lisi mei kan t_i] \text{hen bu heshi} ] de naben shu_i] ].}\]
\[\text{I buy-asp \quad Lisi not read \quad very not proper DE that book} \]
\['I bought the book, which [[\text{that Lisi did not read [it]]} \text{is not proper}].'\]

Conversely, if we replace the embedded predicate in (36) by the predicate used in (35), (36) becomes ill-formed:

\[(36') \text{* (wo kanjian-le ) [\text{ap}[\text{ap}, Lisi da-le t_i] \text{zhengigui} \text{] de nage ren_i] ].}\]
\[\text{I see-asp \quad Lisi hit-asp \quad really strange DE that man} \]
\['*I met the man, who [[the fact that Lisi hit t_i] \text{was really strange}].'\]

Now the crucial question is why \textit{zhengigui} 'really strange' is different from such predicates as \textit{shi wo bugaoxing} 'make me unhappy' and \textit{buheshi} 'not proper' in causing the difference in grammaticality judgement. Huang (p.c.) recently suggests that (35) is bad because an element is extracted out of a factive sentential subject predicated by \textit{zhengigui} 'really strange'. But the question is why such a prohibition is not observed in (37).

Right now, I have no syntactic analysis to offer as to why the use of the predicate \textit{zhengigui} 'really strange' makes a difference in grammaticality judgement. Nonetheless, I will make a descriptive generalization about its distribution, following a suggestion made by Xue. Xue (1991:63-64 fn 36) notes that \textit{zhengigui} 'really strange' has an exclamatory effect. An examination of exclamatory phrases reveals that such phrases cannot be used as the predicate of a relative clause. If \textit{zhengigui} is analyzed as an exclamatory phrase, we may find an explanation for the ungrammaticality of (35).
In Chinese, exclamatory phrases are AdjPs or VPs usually followed by an exclamation particle a. This particle has various allomorphs depending on the preceding syllable.

(38) a. zhepian wenzhang, [np Lisi pang wo xiu
gai t] jiao wo hao gaoxing a. This paper Lisi help me revise make me how happy particleLit.: 'This paper, [that Lisi helps me to revise t] makes me how happy.' Intended: 'This paper, how happy it makes me that [Lisi helps me to revise it].'

b. zhejian chenyi, [np ta chuan t] hao heshi ya. this shirt he wears how fit particleLit.: 'This shirt, [that he wears t] is how fit/suitable.' Intended: 'This shirt, how fit it is [for him to wear it].'

If an NP is relativized out of a sentential subject with an exclamatory phrase as its predicate, the sentence becomes bad:9

(39) a. *wo dawan-le [np [np Lisi bang wo xiu
gai t] jiao wo hao gaoxing a ] de napian I finish-type-as type Lisi help me revise make me how happy particle DE the wenzhang]. paper Intended: '*'I finished typing the paper that how happy it makes me [that Lisi helped me revise it].'

b. *wo mai-le [np [np Lisi chuan t] hao heshi ya] de najian chenshan]. I buy-as type type Lisi wear how fit particle DE that shirt Intended: '*'I bought the shirt that how fit it is [that Lisi wears it].'

Now let us return to example (35) repeated below,

9In English, an exclamatory phrase is introduced by 'how' for an AdjP or by 'what' for a NP. As in Chinese, it cannot be used in a relative clause:

(i) a. This is the movie star [whom I am very happy to meet].
b. *This is the movie star [how happy I am to meet ].

(ii) a. This is the movie star [whom it is my pleasure to introduce to you].
b. *This is the movie star [what a pleasure it is to introduce to you].
If we treat *zhēn qíguǎi* as an exclamatory phrase followed by a covert exclamation particle, we can then rule it out on a par with those in (39): an exclamatory phrase cannot occur as the predicate in a relative clause.

To sum up, Huang (1982) argues for the SSC in Chinese based on sentences like (35-37). However, I have shown that there is a grammaticality contrast between (35) and (36-37): only (35) is really bad. Since (35) and (36) involve the same kind of movement and (36) is grammatical, the ungrammaticality of (35) should not be attributed to a subjacency violation. Instead, I propose that it should be independently ruled out, since it involves embedding an exclamatory phrase in a relative clause. In other words, movement out of a sentential subject does not display the SSC, and this constraint does NOT really hold in Chinese, just as it does not in Japanese (Kuno 1973:240). In the following section, I will provide more data to show that extraction from an NP in subject position does not cause ungrammaticality.

### 2.1.3. Relating to a Gap in a Sentential Complement to an NP

In this section, I show that relating an S-initial NP to a gap contained in the sentential complement to an NP displays a subjacency effect, except when the containing NP is in subject position. Once again, this indicates that (a) syntactic movement is involved for the S-initial NP, and (b) lack of subjacency in the exceptional cases is due to the special properties of the extraction domain in subject position.
SET A. The gap is in the sentential complement to an NP in object position. The gap in (40a) is in the subject position of the sentential complement while the one in (40b) is in the object position.

(40)a. *nage ren_t1, wo xiangxin [(_p_1 t_jian-guo John] zhege yanchuan].
    that man I believe meet-asp John this rumour
    '*That man_t1, I believe the rumour that t_j has met John.'

b. *nage ren_t1, wo bu xiangxin [(_p_1 Lisi kanjian t ] zheju hua.
    that man I not believe Lisi see this saying
    '**That man_t1, I don't believe the statement that Lisi saw t_j.'
(From Huang 1982:459)

In both examples, there is a subjacency effect in relating the S-initial NP to the gap in the island. This suggests that the relation between the two is one of syntactic movement. But as repeatedly shown in this section, this subjacency effect is suspended if the extraction domain is located in subject position. This is clearly shown in SET B.

SET B. The gap is in the sentential complement to an NP in subject position. In the following pair of sentences, although the fronted NP crosses more than one bounding node, there is no subjacency effect and the sentences are acceptable. Notice again that the gap is located in the S-initial subject: [(_p_1 [(_p_1...gap...)]...].

(41) a. ?nage ren_t1, wo bu zhidao [(_p_2[(_p_1 t_jian-guo John] zhege xiaoxi] shi dajia name
    that man I not know meet-asp John this news make everybody so
    surprised
    'That man, I do not know that the news that [he] has met John makes everybody
    so surprised.'

b. ?nage ren_t1, wo bu zhidao [(_p_2 [(_p_1 John jian-guo t_j] zhege xiaoxi] shi dajia
    that man I not know John meet-asp this news make everybody
    name chijing ].
    so surprised
"That man, I don’t know that the news that John has met [him] makes everybody so surprised."

In (41a), the subject of the sentential complement is fronted; in (41b), it is the object that is fronted. Both sentences are grammatical.\(^{10}\)

In brief, the recurrent pattern emerging from the data so far is that the S-initial NP must be moved there at S-structure, since there is a subjacency violation if the gap is in an island. But if the extraction domain is in the subject position, subjacency is somehow suspended. In the next section, I will show subject position is not the only extraction domain that can void island effects.

2.1.4. Relating to a Gap in the 'Fronted' Object:

I have claimed in section 2.1.1. above that it is grammatical to extract out of a relative clause contained in a subject NP, but not out of a relative clause contained in an object NP.

\(^{10}\)Xue (1991:75) provides example (i) to claim that extraction of the object of the sentential complement to the subject NP is not grammatical, in contrast to the acceptable extraction of the subject as in (ii):

(i)  *heping, Lisi xiangxin [[xuesheng xunqiu t] de fang'an] hui yingde guangfande zhichi.  
      peace Lisi believe students seek DE plan will win wide support  
      'Peace, Lisi believes the plan [that students seek [it] ] will win wide support.'

      students Lisi think seek peace DE plan will win wide support  
      'Students, Lisi thinks that the plan that [they] seek peace will win wide support.'  

But heping 'peace', an abstract noun, cannot normally be fronted as shown below:

(iii) *?heping, xuesheng xunqiu t.  
      peace students seek  
      '*Peace, students seek.'

Thus it is not adequate to rely on (i) only to claim that extraction of the object of the sentential complement to a subject NP is ungrammatical, particularly in view of the grammaticality of examples like (41b).
Actually, the second half of the generalization is not entirely true: if the object NP containing
the relative clause is fronted, extraction out of it becomes acceptable.\footnote{This was first noted in Huang (1984:562). The following example is his:}

Consider the following pair of sentences:

\begin{equation}
\text{(42) a. Object NP containing the relative clause is in-situ:}
\end{equation}

\begin{quote}
\text{*Zhangsan, Lisi bu zhidao $[\text{ni yijing mai-le } [\text{ni xie t}_j \text{ de }] \text{ shu}_j ]]$.}
Zhangsan Lisi not know you already buy-aspect write DE book
Lit.: *'Zhangsan, Lisi does not know that you have already bought [the books that t$_t$ wrote].'
\end{quote}

\begin{quote}
\text{b. Object NP containing the relative clause is fronted to the beginning of the embedded clause:}
\end{quote}

\begin{quote}
\text{Zhangsan, Lisi bu zhidao $[\text{ni yijing mai-le } [\text{ni xie t}_j \text{ de }] \text{ shu}_j ]]$.}
Zhangsan Lisi not know write DE book you already buy-aspect
Lit.: 'Zhangsan, Lisi does not know that [the books that [he$_t$] wrote], you have already bought t$_t$.'
\end{quote}

Moreover, if the embedded object is fronted further to the front of the matrix clause, extraction
out of this embedded object also becomes acceptable:

\begin{quote}
This was first noted in Huang (1984:562). The following example is his:
\end{quote}

(i) \text{Zhangsan, e$_t$ changge de shengyin wo hen xihuan.}
Zhangsan sing DE voice I very like
'I, the voice with which [he$_t$] sings, I like.'

Contrast (i) with (ii) below from which (i) is derived:

(ii) \text{*Zhangsan, wo hen xihuan [e$_t$ changge de shengyin].}
Zhangsan I very like sing DE voice
'*I, the voice with which [he$_t$] sings.'

Huang's solution for (i) is to adopt the Generalized Control Rule (GCR) for the data. Specifically, e$_t$ is controlled
by Zhangsan since it is the 'closest' nominal element for it. See section 2.3.2.1. for more discussion of the GCR.
In short, examples which involve a gap in a relative clause but which are grammatical share the following property: the gap is embedded in the S-initial subject NP or in the S-initial fronted object as in (42b) and (43). One may stop here and list these two NP domains as exceptions to the subjacency effect. But there are reasons to believe that the generalization can go even deeper. Notice that once the object is fronted before the subject NP, extraction out of the relative clause in the subject position is no longer acceptable. First, consider example (44) which illustrates fronting out of the relative clause in subject position with the matrix object in situ:

(44) zhege laoshi, [w [np ti jiao-guo t] de xuesheng] dou jian-guo zhezhong hua.
    this teacher teach-asp students all see-asp this-kind plant
    'This teacher, the students [he taught] have all seen this kind of plant.'

However, when the matrix object NP is fronted and the NP 'this teacher' is extracted out of the subject NP across this fronted object as in (45), grammaticality deteriorates in contrast to (44):

    this teacher this-kind plant teach-asp DE students all see-asp
    *This teacher, this kind of plant, the students [he taught] have all seen t.'

Furthermore, with the matrix object fronted, fronting the NP 'this teacher' out of the subject NP to a position after the fronted matrix object induces ungrammaticality:
Given the data in (44-46), the correct generalization is that the extraction domain that voids subjacency must be in an **S-initial** position at S-structure, whether it is the subject or a fronted object. This applies to the S-initial NP of either the matrix clause (cf. 43) or an embedded clause (cf. 42).

2.1.5. **Summary:**

The central claim of this section is that movement is involved when the S-initial NP is related to a gap in the following 'comment clause'. This is supported by the subjacency effect which obtains if the gap is embedded in an island. However, there is a complication to the effect that subjacency does not obtain in the following environments:

(47) A. Movement out of the relative clause contained in an NP in subject position (section 2.1.1).

B. Movement out of a sentential subject (section 2.1.2).

C. Movement out of the sentential complement to the subject NP (section 2.1.3).

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12To ensure that 'this teacher' is really extracted out of the relative clause, (46) should be read with a pause after this NP.

13My conclusion is different from Xue's (1991), who, as mentioned early, also discusses extraction facts in Chinese. His conclusion is that the Complex NP constraint in general is NOT relevant to Chinese (Xue 1991:76). In particular, he claims that the impossibility of extraction from a complex NP in object position should not be attributed to the effects of the Complex NP constraint. His solution for the antecedent-gap relations is couched in the theoretical framework of Generalized Phrase Structure Grammar. The gist of his analysis for the extraction asymmetry is represented by his Linear Precedence rule: NP[SLASH] < [+V, -N]. This means that an NP which properly contains an empty category necessarily precedes the V. Since an object follows the verb in Chinese, only subject NPs can contain traces. In that work, Xue does not discuss extraction out of a fronted object NP, and the structural property shared by a complex NP in subject position and the one in the fronted object NP.

I thank Leslie Saxon for directing me to Xue (1991).
2.2. Types of Movement and their Landing Sites

Having established that the derivation of S-initial NPs involves movement, the next legitimate questions concern what type of movement it is and what is its landing site. In this section, I argue that, in contrast to the traditional view that NP fronting or topicalization is uniformly A'-movement in Chinese, A-movement takes place in some cases of short-distance fronting, as observed for Hindi by Mahajan (1990) and for Japanese by Saito (1992). This conclusion is based on the results of applying to the Chinese data some diagnostic tests commonly used in the literature. Assuming the Split Infl Hypothesis for Chinese clause structure, I also discuss the landing sites for the fronted object in both A and A'-type movements.

2.2.1. Two Types of Movement

Based on Hindi, Mahajan (1990:46) argues that argument shift and adjunction to XP exist as separate operations. Argument shift yields a structure that enters binding theory, overrides Weak Crossover (WCO) effects and is not reconstructible. It has the properties of A-movement (his 'L-movement'). Adjunction to XP, on the other hands, displays A'-movement properties, such as reconstruction effect. In this section, I will apply the same tests to Chinese, arguing that the distinction between argument shift and XP adjunction also holds in Chinese short-distance NP fronting where the object is fronted to the S-initial position of its own clause. I will discuss long-distance fronting in section 2.2.2.3.
2.2.1.1. A'-movement

The claim that some cases of NP fronting in Chinese are A'-movement is supported by the following tests.

Test A: Reconstruction Effect In Chinese, as in Hindi, the anaphor contained in the fronted NP can still be bound by the matrix subject. This indicates that reconstruction applies to the moved NP and that the NP fronting in question is an A'-movement. In the following pairs of sentences, (48a) shows the canonical word order while (49b) has a fronted NP containing an anaphor.

(48) a. \[\text{Bill}_1\ zui \ xihuan \ [_{ap} \ ziji_1 \ de \ haizi].\]
Bill most like self DE kids
Lit: 'Bill\textsubscript{1} most likes self\textsubscript{1}'s kids.'
Intended: 'Bill likes his own kids best.'

b. \[\text{[}_{ap} \ ziji_1 \ de \ haizi], \text{Bill}_1 \ zui \ xihuan \ t_j.\]
self DE kids Bill most like
Lit: 'Self\textsubscript{1}'s kids, Bill\textsubscript{1} likes most.'
Intended: 'Bill likes his own kids best.'

In (48a), the anaphor contained in the object NP is bound by the subject. In (48b), the fact that anaphor binding by the subject still obtains indicates that \(t_j\) left by the fronted object is a variable, and that the movement is an A'-movement: reconstruction applies to make binding possible.\(^{14}\)

\(^{14}\)As in Japanese (cf. Hoji 1985:126), variable binding under reconstruction in Chinese varies from speaker to speaker. In (i), the pronoun \(ta\) is bound by the universal quantifier:

(i) \[\text{meigeren}, \text{dou yijing qisu-le [da \ ta, de \ ren].}\]
everybody all already sue-aspect hit him DE man
'Everybody has sued the man that hit him.'

In (ii), after the object is fronted, the pronoun, according to some speakers, can still be marginally bound by the matrix subject quantifier:

(ii) \[?[\text{da \ ta}, \text{de \ ren}], \text{meigeren}, \text{dou yijing qisu-guole \ t}_j.\]
hit him DE man everybody all already sue-aspect.
Test B. Condition (C) Type Reconstruction Effect As discussed in Saito (1992:90), there is a Condition (C) type reconstruction effect which is observed only with A'-movement. An R-expression contained in a moved constituent cannot serve as the antecedent of a (matrix subject) pronoun unless it is more deeply embedded in that constituent. Here I use this test to argue that the landing site in some cases of NP fronting in Chinese is an A'-position. Look at the following pair of sentences. The NP 'John' contained in the direct object cannot act as the antecedent for the subject pronoun, whether the direct object is in-situ or fronted.

(49) a. Canonical word order:

\[ \text{ta}_{\text{w}1} \text{ yijing jigei-le Mary [John, de shu]_{k}}. \]
he already send-asp Mary John DE book
\'He,\textsubscript{w1} already sent Mary John\textsubscript{i}'s book.'

b. Direct object fronted:

\[ [\text{John, de shu}]_{k}, \text{ta}_{\text{w}1} \text{ yijing jigei-le Mary t}_{k}. \]
John DE book he already send-asp Mary
'John\textsubscript{i}'s book, he\textsubscript{w1} already sent to Mary.'

However, as is shown in (50b) below, the NP 'John' can become the antecedent if it is more deeply embedded in the fronted direct object.

(50) a. Canonical word order:

\* \[ \text{ta}_{1} \text{ yijing jigei wo [\text{wo tuo John, zai zhongguo mai }] de shu}_{k}. \]
he already sent me I ask John at China bought DE book
\*He\textsubscript{1} has sent me the book that I asked John\textsubscript{i} to buy in China.'

b. Direct object fronted:

\[ [\text{wo tuo John, zai zhongguo mai }] \text{ de shu}_{k}, \text{ta}_{1} \text{ yijing jigei-le wo t}_{k}. \]
I ask John at China bought DE book he already sent-asp me

\'The man,\textsubscript{1} that hit him,\textsubscript{2}, everybody, has sued.'

If the judgement for (ii) is reliable, it should be taken to indicate that reconstruction occurs, and that the fronting of the object NP is A'-movement.
"The book that I asked John to buy in China, he has sent to me."

'John' in (50b), but not in (49b), is deeply embedded in the relative clause contained in the fronted object NP, and it can function as the antecedent for the matrix subject pronoun. The fact that Condition (C) type reconstruction effect obtains indicates that the fronting in (50b) must be an A'-movement.

One question concerning this test is why it should be a test for A'-movement (David Ingram p.c.). This question can be answered by looking at a raising structure, a prototypical A movement:

(51) [John de didi] zai ta kanlai haoxiang[ t_1 hen congming ].
John DE brother to him look seem very bright
'John's brother, seems to him_1 [ t_1 to be very bright ].'

In (51), 'John' weakly c-commands ta 'him' as in (49b) above; yet it can be co-indexed with the latter. As (51) is an A-movement, the grammaticality contrast between (51) and (49b) under the co-indexed reading can only be explained if we assume that (49b) involves an A'-movement. If it is also an A-movement, it should not be different from (51) in grammaticality judgement.¹⁵

¹⁵James Huang (p.c.) points out that if object-fronting can be freely A' or A-movement, then all object-fronted sentences should be fully grammatical with respect to crossover effects, etc. In particular, examples like (49b) should be ok under the co-indexed reading as a kind of A-movement. Huang suggests an alternative account for (49b) based on Reinhart (1981). According to Reinhart (1981:614), the domain of a node A consists of all and only the nodes c-commanded by A. She also proposes (1981:617) that 'a given NP cannot be interpreted as coreferential with a distinct nonpronoun in its c-command domain.' This is how she explains the contrast between (i) and (ii):

(i) *Near Dan, he saw a snake.
(ii) Near him, Dan saw a snake.

In (i), 'Dan' is in the domain of the subject 'he' and is not a pronoun; therefore, coreference between the two is ruled out. In (ii), however, 'Dan' is not in the domain of 'him' (which only extends to the PP) and coreference between the two NPs is allowed. To return to the Chinese cases, (49b) may be treated as a legitimate A-movement as Huang suggests, but it is ruled out under the intended coreferential reading exactly for the same reason as for (i): the possessor NP 'John' is in the c-command domain of the subject 'he' and it is not a pronoun.

Note that in (50b), 'John' is still in the c-command domain of the subject, but its coreference with the
Summing up, based on the tests that NP fronting displays a Condition (A) reconstruction effect and a Condition (C) type reconstruction effect, I conclude that this process is an A'-movement, at least in some cases.

2.2.1.2. A-movement

In this section, I show that NP fronting can also display A-movement properties based on three tests.

Test A: Remedy WCO A pronoun can be bound by a wh- or quantifier phrase in a construction involving A movement. Take the following raising construction for instance,

(52) a. [sheì zai tadeì mama kanlai haoxiang [tì zui xingfu]]?
who at his mother view seem most happy
'Who seems to his mother [tì to be most happy]?'

b. [meige haitiì zai tadeì mama kanlai haoxiang [tì dou shi tiancai ]].
every child at his mother view seem all are genius
'Every child seems to his mother [tì to be a genius].'

In contrast, a quantifier undergoing LF A' movement cannot bind a pronoun it crosses. This subject pronoun is acceptable. Reinhart (1981:632) discusses the same kind of contrast found in English as a counterexample to her proposed anaphora restriction:

(iii) *In Ben's, box, he, put his cigars. (her (81a))

(iv) In the box that Ben brought from China, he, put cigars. (her (82c))

Reinhart's solution is that the anaphora rule obeys subjacency: in (iv), the antecedent is not subjacent to the pronoun, being separated by two bounding (NP) nodes, so the anaphora rule cannot apply to mark the two NPs as noncoreferential. Similarly, the contrast in Chinese between (49b) and (50b) can be explained along the same line as an alternative account. Also note that in (51), the c-command domain of the prepositional object also only extends to PP, thus allowing its coreference with 'John'.

There are two noteworthy points regarding Reinhart's solution for (i) and (ii). One is that it is no different from a Condition C type solution: (i) is ruled out since the name is bound. The other point is that the Split Infl Hypothesis is assumed in this dissertation. To adopt Reinhart's notion of c-command domain, we have to further assume that a clause basically has two c-command domains: VP-internal and VP-external. For the latter one, all functional projections constitute one c-command domain. Under the A-movement analysis for (49b), the subject pronoun 'ta 'he' would be in [Spec AspP], c-commanding the possessor name 'John' in the fronted object NP landing in the higher [Spec AgrOP]. See section 2.2.2.1 for the proposed landing sites for A-type fronting.
WCO effect is illustrated by LF Quantifier Raising (QR), an A'-movement, in the following English sentence:

(53)  *His_{i} mother loves everybody_{i}.

Likewise, in Chinese, a quantified object NP in-situ cannot refer to a preceding pronoun as a result of WCO induced by LF QR. However, if this NP is fronted at S-structure, it can bind a pronoun without inducing the WCO effect, a fact which supports the claim that the landing site of the moved NP must be an A-position on a par with the examples in (52), not with the one in (53). This is clearly illustrated in comparing (54a) with (54b):

(54)  a. Quantificational object is in-situ:

*wo xiang tamende_{i} jiazhang biaoyang-guo suoyoude xuesheng_{i}.
I to their parents praise-asp all student
*'In front of their parents, I praised all the students.'

b. quantificational object is fronted:

suoyoude xuesheng_{i}, wo dou xiang tamende_{i} jiazhang biaoyang-guo ti_{i}.
all student I all to their parents praise-asp
'All the students, I have praised [them] in front of their parents.'

As the S-structure fronting of the quantifier object NP overrides the WCO effect, the landing site in (54b) must be an A-position.¹⁶

¹⁶According to Lasnik and Stowell (1991:697), wh-phrases and other QPs do not occur as topics. This implies that topicalization and QR are separate operations. Since the topicalizable NPs (in English) are not real operators (while QPs and wh-phrases are), WCO does not obtain when these NPs cross a co-indexed pronoun to be fronted:

(i) This book_{i}, I will never ask its author to read.

In Chinese, however, at least QPs can be fronted/topicalized, as is shown in (54b). Note that QPs are real operators, and that there is nothing to prevent this overt fronting from being analyzed as S-structure QR. Yet, different from LF QR, there is no WCO effect in (54b). Therefore, the only way we can capture these facts is to claim that S-structure QR is different from LF QR in that it is an A-movement, without inducing WCO. Also note that as in English, non-operator NPs in Chinese can also be fronted:
Test B: No Reconstruction  When both the direct object and indirect object are in situ, the preceding indirect object cannot be a pronoun co-indexed with an element of the NP in the direct object position. But when the direct object is fronted leftward, co-indexing becomes acceptable.

(55) a. Canonical word order:
   *wo yijing gei-le ta1 [Johni de shu]i.
   I already give-asp him John DE book
   "I already gave himi Johni's book.'

b. Direct object fronted:
   [Johni de shu]i, wo yijing gei-le ta1 ti.
   John DE book I already gave-asp him
   'Johni's book, I already gave himi.'

Since reconstruction applies to the site of a variable, and there is no reconstruction effect, ti in (55b) must be an NP trace, not a variable. This indicates that the movement involved is an A movement, not an A'-movement.\(^7\)

(ii) zhexie xueshengi, wo yijing xiang tamende, jiazhang biaoyang guole.
these students I already to their parents praise-asp
'These students, I have already praised (them) to their parents.'

Lack of WCO in (ii) is subject to two possible analyses: (a) it is an A-movement as in (54b); (b) it is an A'-movement as in English, but since the fronted NP is not an operator, it does not induce WCO effect.

I thank James Huang for reminding me of Lasnik and Stowell (1991). Also see Choi (1991) for the view that the remedy of WCO does not necessarily differentiate between A- and A'-movements.

\(^7\)In section 2.2.1.1, I use the following sentences to show that the S-initial NP is moved to an A'-position, based on the Condition (C) type reconstruction effect:

(49) b. *[Johni, de shu]i, ta1 yijing jigei-le Mary ti.
   John DE book he already sent-asp Mary
   'Johni's book, he already sent to Mary.'

(55) b. [wo tuo Johni, zai zhongguo mai de shu]i, ta1 yijing jigei-le wo ti.
   I ask John at China bought DE book he already sent-asp me
   'The book that I asked John to buy in China, he has sent to me.'

One may argue that (55b) and (49b) seem to have the opposite judgement, and may thus doubt the analysis proposed. However, there is one difference between them which deserves our attention. The coindexed pronoun
Test C: The fronted NP as an A-binder: Another piece of evidence for the A-status of some fronted NPs is that they can function as an A-binder for a reflexive in the clause as shown in (56b) below. (56a) is a sentence with the canonical word order where anaphor binding does not obtain:

(56) a. *zi\textsubscript{j}i\textsubscript{j}, de laoshi biaoyang-guo [zuozai qianpai de xuesheng],
self DE teacher praise-asp seated front DE students
Lit.: *'Self,'s teacher has already praised students\textsubscript{i}, sitting at the front.'

b. ?[zuozai qianpai de xuesheng\textsubscript{j}], zi\textsubscript{j}, de laoshi yijing biaoyang-guole t\textsubscript{j}.
seated front DE students self DE teacher already praise-asp
Lit.: 'Students\textsubscript{i}, sitting at the front, self,'s teacher has already praised [t\textsubscript{j}].'

The fact that anaphor binding obtains in (56b) demonstrates that the fronted object NP must have landed in an A-position.

To sum up, we have applied three tests in this section. They are (a) remedy of WCO; (b) no reconstruction; (c) the fronted NP as the A-binder. The conclusion that emerges from these tests is that NP fronting in Chinese can be A-movement.

Since Chinese has both A-type and A'-type NP fronting, a question arises as to when a particular case of NP fronting belongs to one type, not the other one. Compare the following pair of sentences:

(57) a. taziji\textsubscript{i}, John\textsubscript{i} zuixihuant.
himself John most like
'Himself\textsubscript{i}, John\textsubscript{i} likes t\textsubscript{i} best.'

in (55b) is in object position while the one in (49b) is in subject position. Since all the Condition (C) type reconstruction effect examples given in (Saito 1992:90-91) use subject pronoun, we may conclude that the difference in judgement between (55b) and (49b) is due precisely to the difference in the position of the pronoun, and there is nothing contradictory about the judgement. Under Reinhart's analysis (1981), the possibility of coreference between 'John' and ta 'him' in (55b) (in contrast to that in (49b)) is attributed to the fact that 'John' in (55b) is located outside the c-command domain of the indirect pronoun, which only extends to VP.
b. John, [zijide; haizi] dou bu xihuan ti.
   John self's kid even not like
   'John, even his own kids do not like [him]."

Examples like (57a) are analyzed as A'-movement since they display reconstruction effect; in contrast, the one in (57b) is analyzed as A-movement since the fronted object can act as an A-binder for the anaphor contained in the subject. Now the question is why (57a) is not analyzed as A-movement while (57b) is not analyzed as A'-movement? I follow Deprez (1989:183) in assuming that both A and A'-possibilities exist in each fronting construction. But if some violation would result, the syntax dictates that movement to the position which leads to the lesser violation is the only one possible. Deprez's solution is applicable to the analysis of (57a-b). In (57a), under the A-movement analysis, the sentence should be bad since the anaphor is unbound; under the A'-movement analysis, it should be good since the fronted anaphor can be bound under reconstruction. Given the outcomes of the two analyses, the A'-type analysis is preferred to the A-type analysis. In (57b), the two options also exist. If it is A-movement, the anaphor can be bound and the sentence is good; if it is A'-movement, it is predicted to be bad since the anaphor would be left unbound. In this case, the A-type movement analysis wins over the A'-type one.

2.2.2. The Landing Sites of NP Fronting

In the previous section, I have established that there are two kinds of movement involved in cases of NP fronting. The next question is what are the landing sites for the A and A'-movements. Below I first make explicit my assumptions about the clausal structure in Chinese based on some recent theoretical proposals. I then advance my proposal for the landing sites for the two kinds of movement. Specifically, I claim that A-movement in Chinese lands in the
specifier position of AgrOP while A’-movement is CP adjunction.

2.2.2.1. The landing site of A-movement: [Spec AgrOP]

Maajan (1990) proposes an articulated clausal structure for Hindi based on the Split Infl Hypothesis (cf. Chomsky (1989) and Pollock (1989)). Under this hypothesis, a clause is not a simple projection of inflection syntactically represented as IP. Instead, inflection is split into various functional projections like AgrSP, AgrOP and TP etc. Such an expansion of IP makes additional Spec positions available, internal to the clause. The following tree is proposed by Maajan (1990:14) for Hindi:

(58)
In addition, Mahajan recognizes an L/non-L distinction among positions (1990:10). He proposes that **L-related positions** are specifiers and complement positions of a lexical item and functional heads projected from it. Within the clausal system, this includes Spec and Complement positions of V, Agr and T. In contrast, **non L-related positions** refer to all the other positions, including Spec CP and adjunction positions.

Adopting the same hypothesis, Chomsky and Lasnik (1991:33, 82) further propose that typological variations among languages should reduce to the **ordering parameters** and properties of functional elements. They try to derive various word orders by postulating **overt** or **covert** NP raising. Take a right-headed language for instance. If object raising is overt to [Spec AgrOP] at S-structure and subject raising to [Spec AgrSP] covert at LF, it results in what they call "scrambling", i.e. the OSV order at S-structure. If both subject and object raise overtly, we will get the SOV order. They also state that other options are possible.

The case of Chinese is more complicated than the cases discussed in Chomsky and Lasnik. Chinese first of all exhibits disharmony in its head positions across categories: it is strictly head-final for NP, head-initial for PP and head-medial for VP (Huang 1982, Li 1990, Goodall 1991, Travis 1989, Mulder and Sybesma 1992). Second, although its basic S-structure order is SVO, it can also have OSV ('NP fronting') or SOV ('object shift') orders. Given these facts and the theoretical assumptions outlined above, I propose that Chinese has the following D-structure representation:
This structure postulated for Chinese differs from the one proposed for English (as in Chomsky and Lasnik 1991) in the following respects: (a) it contains an AspP instead of TP, as in Cheng (1991); (b) AgrOP is higher than AspP. These possibilities are countenanced, though not explicitly discussed, in Chomsky and Lasnik (1991:23), as legitimate parametric variations.18

I further postulate an MP projected by a modal verb (cf. Cheng 1991:131), given data like (60c):

(60) a. ta kan-guo zheben shu.
   he  read-asg this book
   'He has read this book.'

b. ta yiding kan zheben shu.
   he must read this book
   'He must read this book.'

c. ta yiding kan-guo zheben shu.
   he must read-asg this book
   'He must have read this book.'

18My proposal coincides with the one proposed by Deprez (1989:223) for Mainland Scandinavian and Icelandic: AgrOP is also postulated higher than TP in these languages in order to accommodate word order facts.
(60c) shows that the modal verb and the aspect marker can co-occur in one sentence. When the V+asp amalgamation raises for feature checking at LF, it should move to a head distinct from the one headed by the modal verb, since it is impossible for a head to accommodate both the modal and the V+asp at LF. Hence, the postulation of both MP, headed by the modal, and AspP, headed by the raised V+asp at LF.

Regarding the SVO and OSV word orders found in Chinese, I propose that they are derived as follows:

SVO: the canonical word order: The subject NP, base-generated in [Spec VP], moves overtly to [Spec AspP] or [Spec MP] as an intermediate step for its final raising to [Spec AgrSP] for feature checking. (Alternatively, the subject can overtly land in [Spec AgrSP] for feature checking, though the S-structure effect would be vacuous in the SVO order.) The object NP remains as sister to the V and later undergoes covert movement at LF to [Spec AgrOP] for feature checking.19

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19This contrasts with Aoun and Li's (1993:23) claim that subject NP in Chinese remains in [Spec VP] at S-structure. One major problem with their proposal is that in the presence of a modal, the subject is obligatorily to its left:

(i) wo gan qu.
    I dare go
    'I dare to go.'

(ii) *gan wo qu.
     dare I go
     'I dare to go.'

If the ModalP is generated higher than VP, as commonly assumed, their no-subject-raising analysis predicts the opposite judgement for examples (i-ii).
(61) The S-structure representation of the canonical SVO order in Chinese:

```
AgrSP
/ \   
subj_1 AgrOP
/ \  
  MP
/ \  
t''_1 AspP
/ \  
t'_1 VP
/ \  
t_1 V'
/ \  
V  obj.
```

OSV: the word order for A-type fronting: The object NP undergoes overt raising to [Spec AgrOP]. The subject NP moves to and remains in [Spec AspP] or [Spec MP] at S-structure, but it later moves to [Spec AgrSP] at LF for feature-checking. Notice that what is novel about its raising is that it can stop either in [Spec AspP] (or [Spec MP]) as in OSV order, or it can overtly raise to [Spec AgrSP] as in SVO order. There is nothing in principle to stop this kind of semi-overt raising in [Spec AspP], given the peculiar facts of Chinese. This kind of partial raising is also discussed in Pollock (1989) and Sportiche (1988).20 In VSO languages like Arabic, if a sentence has an auxiliary, the subject can occur between the auxiliary or the verb, or before the auxiliary. Schematically, the order will be as follows: Aux-V-S, Aux-S-V, S-Aux-V. This shows that the subject, though not the object, can move through and stop in the intermediate spec positions of the functional projections.

20I thank Hamida Demirdache (p.c.) for pointing out to me the VSO facts.
The S-structure representation for the A-type fronting deriving OSV order is as follows:

(62)
```
AgrSP
  / \  
AgrOP  
  / \ 
Obj.,MP  
  /  \ 
subj.,AspP 
  / \ 
t' \ 
  / \ 
t  \ V' 
  / \ 
  V  tj
```

Given Mahajan's assumption that the spec position of a functional projection is an A-position, the A-movement properties of certain fronted NPs follow naturally from our proposal here.

The question is then how plausible it is to treat [Spec AgrOP] as the landing site for the A-type NP fronting, given that Chinese has no morphological agreement. Recall that one of the constraints for the fronted object NP is that it must be definite or generic. Notice that the definiteness requirement for the fronted object NP is also found in morphologically rich languages such as Turkish, Hindi and some European languages (Mahajan 1991, Runner 1994). Furthermore, these fronted NP are analyzed as landing in [Spec AgrOP] in these languages. This indicates that there may be a correlation between the definiteness of the fronted NP and the availability of [Spec AgrP], as attested by the morphology of these languages. Returning to Chinese, given the crosslinguistic correlation and the definiteness constraint for the fronted NP in Chinese, I propose that postulating [Spec AgrOP] as the landing site for the fronted object in this language is not as arbitrary as it at first seems to be. In Ch.3, I will discuss NP object shift (i.e. SOV) which is also subject to the same constraint. I delay a detailed discussion on the justification of Agr in Chinese until section 3.3.3 of that chapter.
2.2.2.2. The landing site of A’-movement: CP adjunction

Rochemont (1989) argues that topicalization in English is usually IP adjunction. But to account for two sets of his data, he also proposes adjunction to the matrix CP. Following him, I propose that A’-type NP fronting in Chinese is also CP-adjunction. This CP-adjunction proposal may run counter to one of the assumptions in GB syntax. According to Chomsky (1986b:6), adjunction is possible only to a maximal projection that is not an argument. Rochemont (1989) allows adjunction to the matrix CP precisely because it is not an argument, unlike embedded CPs. Notice that in Chinese, embedded A’-movement also occurs:

(63) wo xiang [nab guanyu ziji de shu]1, John1 yijing kanwan-ie ti.
    I think that about self DE book John already read-asp
    Lit.: 'I think that [the book about self]1, John1 has already finished reading ti.'

As the anaphor in the fronted NP can be bound by the embedded subject under reconstruction, the landing site of the containing NP must be an A’-position. If we assume that A’-fronting is CP adjunction and this embedded CP is an argument, this violates the ban on adjunction to an argument. One possibility to accommodate this embedded CP-adjunction is to propose that Chomsky’s constraint against argument CP adjunction is parameterized.\(^\text{21}\)

The anaphor binding facts illustrated in (63) not only force an A’-movement analysis, but also oblige us to assume that the 'variable' left by the CP-adjunction of the object must be lower than the subject. In particular, it must be in [Spec AgrOP] with the subject in the higher [Spec AgrSP]. Recall that the object NP has to move to [Spec AgrOP] for feature checking. Therefore,

\(^\text{21}\)Rochemont (1989:155) also provides data from Italian, showing that topicalization must be CP-adjoined in certain cases. This conclusion is based on examples like (i) below, where the embedded PP is topicalized to the left of the complementizer:

(i) Mi domando a Giovanni, se gli hanno presentato Piero.
    me I-ask to John that they have presented Peter
    'I ask if they have presented Peter to John.'
it cannot front from its postverbal D-structure position directly to the CP-adjoined position, for
this would deprive it of the opportunity to be in [Spec AgrOP] for feature checking. In order to
capture the A'-movement properties such as reconstruction and to accord with feature checking
theory, we have to assume not only that the S-structure position of the subject must be in [Spec
AgrSP], but also that the object first moves to [Spec AgrOP] for feature checking before it
adjoins to CP, leaving a 'variable' in that spec position. Here is the representation for the A'-
type fronting deriving the OSV order:

(64) CP
     / \                  
    obj. i CP
     / \                      
    AgrSP
     / \                     
    subj.i AgrOP
     / \                      
    t'j MP
     / \                    
    t''i AspP
     / \                  
    t'i VP
     / \               
    t_i V'
     / \     
    V t_j

In (64), while t_i, t'j, t''i and t_j are all traces of A-type movement landing in a Spec position, t'j
in [Spec AgrOP] is the variable left by the A'-type fronting of the object which is adjoined to
CP. Note that since t'j is the intermediate landing site for the object, it predicts that SOV is a
possible S-structure word order with the subject and the object in [Spec AgrSP] and [Spec
AgrOP] respectively. This prediction is indeed borne out by the data in Chinese which will be
explored in detail in Ch.3. The correctness of the prediction, in turn, lends support to the
proposed analysis for the various positions of relevant traces in A'-type fronting. Lastly, the fact
the fronted object in A'-movement has the same definiteness requirement as the fronted object in A-movement follows from our account: at S-structure, the fronted object NP in either case moves through or lands in [Spec AgrOP] which is associated with a definite reading (cf. section 2.2.2.1. above and section 3.3.3. below).

To sum up, in Chinese, A-type object NP fronting involves raising to [Spec AgrOP] as a kind of overt raising for feature checking while A'-type NP fronting involves CP-adjunction with an intermediate trace in [Spec AgrOP].

2.2.2.3 Long-distance Fronting

All the examples provided above are short-distance fronting, i.e. the object is fronted to the S-initial position of its own clause. What happens if the object from an embedded clause is fronted to the S-initial position of a matrix clause? Mahajan (1990) shows that in Hindi, while short-distance scrambling is either A or A'-movement, long-distance scrambling can only be A'-movement. I will show that the same conclusion applies to Chinese, based on the results of the following tests.

Test A: Reconstruction Effect In Chinese as in Hindi, an anaphor contained in an embedded object which is fronted before the matrix clause can still be bound by the embedded subject. This indicates that reconstruction applies to the moved NP, and that the NP fronting in question is an A'-movement. In the following pairs of sentences, (65a) shows the canonical word order, while (65b) has a fronted NP containing an anaphor.

(65) a. ni zhidaot Bill_{1} zui xihuan [w_taziji_{2} de haizi].
   you know Bill most like himself DE 'kids
   Lit: 'You know that Bill_{1} most likes self_{2}'s kids.'
   Intended: 'You know that Bill likes his own kids best.'
b.  [\text{taziji de haizil}, ni zhidao [ t'' \text{ Bill} t'_j zui xihuan t'_j ].]
   himself DE kids you know Bill most like
   Lit: 'Self's kids, you know that Bill likes best.

In (65a), the anaphor contained in the embedded object NP is bound by the embedded subject.
In (65b), anaphor binding by the embedded subject still obtains for the fronted embedded object. This shows that (a) t'_j left by the fronted object is a variable, and (b) the position of t''_j is an A'-position, and so is the final landing site of the fronted embedded object NP. This NP is "reconstructed" from its S-initial position back to t''_j and eventually to t'_j to make binding possible.

**Test B: Condition (C) Type Reconstruction Effect** First of all, let us review the data in (66) below which illustrate Condition (C) Type Reconstruction Effect in cases of short distance fronting. Specifically, the name in the embedded object fronted to the initial position of its own clause cannot refer to the embedded subject (as in (66-b)) unless it is more deeply embedded in the object as shown in (66-d).

(66) **Short-distance fronting:**

a. Canonical word order:

\begin{align*}
\text{wo zhidao} [\text{ta}_w \text{yijing jigei-le Mary [John} \text{ de shu}]_k].
\text{I know he already send-asp Mary John DE book}
\text{'I know that he}_w \text{ already sent Mary John'}_k \text{'s book.'}
\end{align*}

b. object NP fronting:

\begin{align*}
\text{wo zhidao} [[\text{John} \text{ de shu}]_k, \text{ta}_w \text{yijing jigei-le Mary} \text{ t}_k].
\text{I know John DE book he already send-asp Mary}
\text{'I know that John'}_k \text{'s book, he}_w \text{ already sent to Mary.'}
\end{align*}

c. Canonical word order with the name more deeply embedded:

*\begin{align*}
\text{wo zhidao} [\text{ta}_i \text{yijing jigei wo} [[\text{wo tuo John} \text{ zai zhongguo mai} \text{ de shu}]_k]].
\text{I know he already sent me I ask John at China buy DE book}
\text{'I know that he}_i \text{ has sent me the book that I asked John to buy in China.'}
\end{align*}
d. Direct object fronted:

wo zhidao [[[ wo tuo John zai zhongguo mai ] de shu]], ta
I know I ask John at China bought DE book he
yijing jigei-le wo ta.
already sent-asp me
'I know that the book that I asked John to buy in China, he has sent to me.'

In parallel, the same effects obtain in long-distance fronting as illustrated in (67): the name in
the **embedded** object fronted to the initial position of the **matrix** clause cannot refer to the
**matrix** subject as shown in (67-b) unless it is more deeply embedded in the fronted NP as shown
in (67-d):

(67) **Long-distance fronting:**

a. Canonical word order:

\[ \text{ta}_u \text{ yiwei} [ \text{ta}_u \text{ yijing jigei-le } \text{Mary } [\text{John}, \text{de shu}]], \]
he think he already send-asp Mary John DE book
'He\textsubscript{uj} thinks that he\textsubscript{uj} has already sent Mary John\textsubscript{1}'s book.'

b. Long-distance fronting:

\[ [\text{John}, \text{de shu}], \text{ta}_u \text{ yiwei} [ \text{ta}_u \text{ yijing jigei-le } \text{Mary } t_k] \]
John DE book he think he already send-asp Mary
'John\textsubscript{1}'s book, he\textsubscript{uj} thinks that he\textsubscript{uj} already sent to Mary.'

c. Canonical word order with the name more deeply embedded:

\[ \text{Ta}_u \text{ yiwei} [ \text{ta}_u \text{ yijing jigei-le } \text{Mary } [\text{wo tuo John zai zhongguo mai de shu}]], \]
he think he already send-asp Mary I ask John in China buy DE book
'He\textsubscript{uj} thinks [ that he\textsubscript{uj} already sent to Mary [the book that I asked John\textsubscript{1} to buy in
China]],]'.

d. Long-distance fronting:

\[ [\text{wo tuo John zai zhongguo mai de shu}], \text{ta}_u \text{ yiwei} [ \text{ta}_u \text{ yijing jigei-le } \text{Mary } t_k] \]
I ask John in China buy DE book he think he already send-asp Mary
'[The book that I asked John\textsubscript{1} to buy in China], he\textsubscript{uj} thinks that he\textsubscript{uj} already sent to
Mary.']
Examples (66b-d) and (67b-d) show that Condition (C) Type Reconstruction Effect obtains in both short and long distance fronting. If the former type of fronting is analyzed as A’-movement based on the test, the long-distance fronting cases should be analyzed the same way.

**Test C: WCO Effects** In Chinese, a quantifier object NP in-situ cannot refer to a preceding pronoun as a result of WCO induced by LF movement. While short-distance fronting of such an NP suppresses WCO as discussed above, long-distance fronting does induce WCO:

(68) a. Canonical word order:

*wo gaosu-guo tamende, jiazhang [ni xihuan suyououde xueshang].
I tell-asp their parents you like all student
*’I told their parents that you like all the students.’

b. Wh-object fronted:

?*suyououde xueshang, wo gaosu-guo tamende, jiazhang [ni xihuan ti].
all student you tell-asp their parents you like
*’All the students, I told their parents that you like t.’

In both cases, the embedded quantifier cannot refer to the pronoun in the preceding matrix clause. This is because the quantifier phrase in (68a) has to cross the co-indexed pronoun when undergoing Quantifier Raising (QR) at LF for the matrix scope reading; likewise, the quantifier phrase in (68b) is fronted to the matrix clause, though at S-structure. Notice that (68a) is ruled out because LF QR is an A’-movement resulting in WCO effects. If we assume that the S-structure long-distance fronting of the embedded quantifier in (68b) is also an A’-movement, its ungrammaticality can be accounted for in parallel to that in (68a): the embedded quantifier lands in an A’-position, A’-binding both the pronoun and its variable.

**Test D: The fronted NP cannot be an A-binder** Another piece of evidence for the A’-status of the long-distance fronted NPs is that they cannot function as an A-binder for a reflexive in the subject in the matrix clause as shown in (69b) below. (69a) is a sentence with the
canonical word order where anaphor binding does not obtain either.

(69)  a. *zijí de laoshi zhidao [wò biaoyang-guo zhexie xuesheng],
      self DE teacher know I praise-asp these students
      Lit: 'Self's teachers know that I already praised these students.'

      b. *?zhexie xuesheng], zijí de laoshi zhidao [wò yijing biaoyang-guo tī ],
      these students self DE teacher know I already praise-asp
      Lit.: 'These students', self's teachers know that I have already praised tī.'

The fact that anaphor binding does not obtain in (69b) indicates the fronted object NP must land in an A'-position.

To sum up, the long-distance fronted object shows reconstruction effect, induces WCO, and has other A'-movement properties. I therefore conclude that long-distance fronting in Chinese can only be A'-type movement. Recall that A-type fronting is analysed as overt raising of the object to [Spec AgrOP] for feature checking. Our finding that long-distance fronting cannot land in an A-position follows naturally from this feature checking theory. For the Spec position of the matrix AgrOP is reserved for the raising of the matrix object, and it is therefore unavailable for accommodating an embedded object as this would result in a feature clash. This line of argument, based on feature clash, also accounts for why the embedded object cannot land in a position between the matrix subject and the matrix verb (i.e. *S-Oem-V-[Sem-Vem-tj]) to be discussed in Ch. 3.

2.3. Residual Issues

In this section, I address two residual issues: (a) the fact that a subjacency effect obtains in relating the S-initial NP to a gap in an island is also open to an alternative analysis, that of empty operator movement; and (b) the subjacency effect is suspended in extraction out of the
S-initial subject or fronted object.

2.3.1. Empty Operator Movement: An Alternative Analysis

In Section 2.1, I use sensitivity to subjacency as a diagnostic test to argue that there is syntactic movement for the S-initial NP. In this section, I will briefly consider one alternative analysis: the fact that subjacency obtains may indicate that what is moved is not the S-initial NP, but an empty operator predicated of the S-initial NP. Under this analysis, the example in (70a) should have the structural representation indicated in (70b), where an empty operator moves across an island, resulting in a subjacency violation:

(70) a. *John\textsubscript{i},  wo renshi [[ t\textsubscript{j} jiao-guo e\textsubscript{i} ] de laoshi\textsubscript{j} ].
   John    I know    teach-asp    DE teacher
   *'John\textsubscript{i}, I know the teacher who has taught t.'

b. *John\textsubscript{i}, [Op\textsubscript{i}, wo renshi [sp\textsubscript{j} jiao-guo t\textsubscript{j} ] de laoshi\textsubscript{j} ]].
   John    I know    teach-asp    DE teacher
   *'John\textsubscript{i}, I know the teacher who has taught t.'

As discussed above, there are two types of NP fronting in Chinese: A-type fronting and A’-type fronting. But in the literature (cf. Chomsky 1986 among others), empty operator movement has only been defined as A’-movement. Now an interesting question arises as to how to apply this alternative analysis to the A-type movement cases.\(^\text{22}\) Look at the following sentence, which has been treated as A-type fronting of the S-initial NP:

(71) John\textsubscript{i}, [ ziji\textsubscript{i} de haizi ] dou bu zunjing t\textsubscript{i}.
   John    self    DE kid    even not respect
   Lit.: 'John\textsubscript{i}, even self\textsubscript{i}'s kids do not respect.'

\(^{22}\) I am indebted to Hamida Demirdache for her insight on this section.
Under the empty operator movement analysis, example (71) will be represented as follows:

(72) \( \text{John}_{1}, [\text{Op}_{i} [ [ \text{ziji}, \text{de haizi}, \text{dou bu zunjing} \text{t}_i ]]]. \)

John self DE kid even not respect
Lit.: 'John_{1}, even self_{1}'s kids do not respect.'

On a par with the structure proposed for the A-type NP fronting, one might propose that in (71), the empty operator first moves in [Spec AgrOP], A-binding the anaphor in the subject NP located in the lower [Spec AspP]. Then it is further CP-adjoined.

In recent studies on NP fronting in other languages, the analysis which various syntacticians have adopted is the movement of NP itself, not of an empty operator (see Deprez (1989) for Scandinavian languages, Webelhuth (1989) for German, Mahajan (1990) for Hindi and Saito (1992) for Japanese). The data in Chinese are compatible with either type of analysis, and I have no compelling evidence to rule out one for the other. However, following these previous works and by Occam's Razor, I opt for the conventional NP fronting analysis as the default analysis for Chinese; however, I still entertain the possibility of an empty operator analysis. Further research on both Chinese and other languages may determine the final choice between the two analyses.

2.3.2. Subjacency Suspension

The central claim of Section 2.1. is that there is a subjacency effect if the S-initial NP is moved out of an island. However, this effect does not show up if the extraction domain is the S-initial subject or fronted object. The data are summarized below:
A. Movement out of the relative clause in a subject NP (section 2.1.1.1):

Zhangsan, wo bu zhidao [t_2 [v_1 t_i xie t_j de shu_j] name changxiao].
Zhangsan I not know write DE book so popular
"Zhangsan, I do not know that the books which [he] wrote are so popular."  

B. Movement out of a sentential subject (section 2.1.1.2):

zhexie ren, wo bing bu renwei [t_2 [v_1 t_i gan zhe zhong shi]] hen heshi/qiguai .
these people I not think do this thing very proper/strange
"These people, I do not think [(for them) to do this kind of thing] is proper/strange."

C. Movement out of the sentential complement to a subject NP (section 2.1.1.3):

?nage ren, wo bu zhidao [t_2 [v_1 t_i jian-guo John] zhege xiao xi] shi dajia name chijing.
that man I not know meet-asp John this news make everybody so surprised
"That man, I do not know that the news that [he] has met John makes everybody so surprised."

D. Movement out of a fronted object (section 2.1.1.4):

? Zhangsan, wo bu zhidao [v_1 [v_1 t_i xie t_j de ] shu_j]k [v_1 ni yijing mai-le t_k]].
Zhangsan I not know write DE book you already buy-asp
Lit.: 'Zhangsan, I do not know that [the books that [he] wrote]k, you have already bought t_k.'

In this section, I try to answer the question as to why subjacency is suspended in movement out
of the S-initial subject or the S-initial object. I will first review two analyses from Huang (1982,
1984) and then propose my own account, based on Lasnik and Saito (1992).

---

\(^{23}\)I use the negative form of the matrix verb in order to exclude the potential parenthetical reading of the matrix clause. Using an affirmative sentence does not affect the grammaticality of the sentence:

(i)  Zhangsan, wo zhidao [t_2 [v_1 e xie] de shu_j] hen changxiao).
Zhangsan I know write DE book very popular
"Zhangsan, I know the books that [he] wrote are very popular."
2.3.2.1. Review of Previous Analyses

The first analysis to review is the 'alternative construal' analysis, proposed for sentences like the following (Huang 1982:459):

(74) zhebenshu1, [Lisi mei kan ti] zhen qiguai.
    this book Lisi not read really strange
    'This book Lisi didn't read t_i is really strange.'

In (74), object extraction is allowed out of a sentential subject. According to Huang, the reason that (74) is not ungrammatical is that the S-initial NP 'that book' may be alternatively construed as occurring within the sentential subject, thus violating no known constraints of grammar:

(75) [Lisi, zhebenshu1] zhen qiguai.
    this book Lisi not read really strange
    '[The fact] that this book, Lisi didn't read t_i is really strange.'

Likewise, we may extend this 'alternative construal' analysis to subject extraction out of a relative clause in a subject NP where no subjacency effect shows up. Thus, the example in (76) may be reanalysed as having the structure in (76'):

(76) naben shui, [ip, t kan-guo t_j de ren_j] bu duo.
    that book read-asp DE people not many
    'The book, the people who have read [it] are not many.'

(76') [ip, naben shui, t_j kan-guo t_j de ren_j] bu duo.
    that book read-asp DE people not many
    Same as (76)

In the above cases, the "alternative analysis" is possible since the S-initial NP and the matrix subject containing the relative clause are immediately adjacent to each other. However, this

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24 Though Huang (1982:459) indicates ?? for sentence (75), I judge it as grammatical. My judgement is consistent with the 'alternative construal' analysis he proposes.
"alternative construal" is not available for cases like the following:

(77)  Zhangsan, wo bu zhidao [l_2 [n [t_1 xie t_2] de shu_j] name changxiao].
Zhangsan I not know write DE book so popular
'Zhangsan, I do not know that the books [he] wrote are so popular.'

In (77), the S-initial NP is related to an empty category in a relative clause contained in the subject NP in an object complement clause. Notice that alternative construal is impossible for lack of immediate adjacency between the S-initial NP and the embedded subject NP containing the co-indexed gap. Similarly, alternative construal should not be available in (78) below, since the matrix clause 'he thinks' intervenes between the S-initial NP and the embedded sentential subject containing the co-indexed gap; yet the sentence is still grammatical:

(78)  zheben shu_i, ta juede [, [n [i, Lisi mei kan t_i]] zhen qiguai].
this book he think Lisi not read real strange
'*That book_i, he thinks that Lisi didn’t read t_i is really strange.'

Given data like (77) and (78), I do not think that "alternative construal" is the right analysis for the lack of subjacency effect in fronting out of a relative clause in subject position, or out of a sentential subject.\(^\text{25}\)

\(^{25}\text{Huang (1982:457) also gives the following sentence and marks it ungrammatical:}\)

(i)  *Nage ren_i, [[t_i kanjian t_j] de xuesheng] lai-le.
that man see de student come-asp
'The man_i, the students whom [he] saw have come.'

If 'alternative construal' applies in cases like (75), the question arises as to why it does not apply in (i). Huang does not discuss this difference in grammaticality judgement.

One solution to the contrast between (i) and (75) is that it has to do with the matrix predicate used. Notice that the matrix predicate used in (i) denotes an action and is a stage-level predicate, while the one in (75) denotes a state and is an individual-level predicate (cf. Diesing 1992). This observation is supported by the following pair of sentences:

(ii)  Nage ren_i, [[t_i jiao-guot,] de xuesheng] hen congming.
that man teach-asp de student very smart
'That man_i, the students whom [he] has taught are very bright.'
In a footnote in one of his later papers, Huang (1984:562 fn 30) proposes an operator movement account for sentences like (77). This solution is based on the functional determination of empty categories and the Generalized Control Rule (GCR). According to the GCR, an empty pronominal should be coindexed with the closest nominal element (Huang 1984:552). Take example (77) for instance. Under Huang’s analysis (1984), ‘Zhangsan’ originates from the operator position of the embedded complement clause under 'I do not know', and the subject empty category 'e' is base-generated as a pronominal. Because 'Zhangsan' in the embedded operator position is the closest nominal element for the empty category in subject position, the Generalized Control Rule applies to co-index these two elements. Then 'Zhangsan' undergoes movement into the matrix topic (or Comp) position, and the pronominal becomes a variable after co-indexing.

There are two problems with this proposal. One is theoretical, regarding the claim that the empty category starts out as a pronominal and becomes a variable after it is co-indexed with an NP. Current GB theory no longer endorses such "chameleon" empty categories (Brody 1985 among others). Second, such a proposal will force us to lose an account for the grammaticality of (79):

(iii)  *Zhangsan, [[e, xie] de shu ] mai-le.
       Zhangsan  write DE book  sell-asp
       'Zhangsan, the books that [he] wrote were sold.'

(with a stage-level predicate denoting action.)

I propose that in general, subjacency is suspended in movement out of a relative clause in subject position in Chinese. The fact that (i) is ungrammatical should be attributed to other factors. For instance, one speculation is that the subject of a stage-level predicate must be within the VP domain at LF or the post-LF level (cf. Diesing 1992). But the subject in (i) cannot move back to the VP at LF as it is semantically incomplete with 'that man' moved out of it at S-structure.
Suppose, as in Huang (1984), that 'these students' is base-generated in the operator position of the embedded clause under 'I do not know'. In contrast to (77), the empty category is in the object position, and therefore the NP 'these students' in this embedded operator position is not the closest nominal for ei. Instead, the closest nominal is ti, and, according to the GCR, 'these students' should not be co-indexed with ei. Yet, co-reference between these two elements is acceptable, and 'these students' can be construed as the object of the verb 'teach' in the relative clause. Given these two objections to Huang's account, I seek an alternative analysis, to be presented in the next section.

2.3.2.2. A'-position voids barrierhood

Lasnik and Saito (1992:102) propose that "A'-binders are not barriers for further extraction". Compare the following two English sentences. Extraction out of the embedded subject in-situ is bad since the embedded subject is a barrier. In contrast, as is shown in the (80b), extraction is grammatical if the subject NP itself is first topicalized. This, according to Lasnik and Saito, is due to the fact that the topicalized subject is in an A'-position and ceases to be a barrier. They further note that (80b) is marginal not because of subjacency, but because of the 'internal constituent effect' (Kuno 1973), which obtains in movement out of a non-rightmost branch constituent:

(80) a. *Who1 do you think that Mary believes [pictures of ti2] are on sale?

b. ??Who1 do you think that [pictures of ti2], Mary believes t2 are on sale?
Following Lasnik and Saito (1992), I propose that both the subjects and fronted objects can be CP-adjoined as A'-binders to void their barrierhood. Notice that the S-structure word order effect for such an adjunction is vacuous for some cases. Take adjunction of the S-initial subject for instance. We have proposed that S in the SVO order is in [Spec AgrSP], an A-position. In order to void its barrierhood, the S can be CP-adjoined (with vacuous S-structure effect) to allow extraction out of it. One may frown upon the idea that subject is vacuously moved. This is disallowed in English (Fiengo et al 1988:89):

(81)  *John, came yesterday.

In Chinese, subjects have certain properties that may justify vacuous subject movement. One is that Chinese has been treated as a topic-prominent language, and that its subject is often identified as the topic (Li and Thompson 1981). One piece of evidence for this claim is that topic tends to be definite crosslinguistically. In Chinese, subject must be a definite NP. The second property of the Chinese subject is that if it is a long one, it can be separated from the rest of the sentence by a comma in writing. In English, a topic is typically set off from the rest of the sentence by a comma. Given these properties, Chinese subjects should be identified as topics and vacuous subject movement should be allowed.

It is proposed above that A'-type NP fronting is CP-adjunction and hence the fronted NP in this position should not be a barrier for extraction, as proposed in Lasnik and Saito. In the case of an A-type fronted object in [Spec AgrOP], I propose that, just like the subject in [Spec AgrSP], the object NP is further adjoined to CP, as Mahajan (1991) does for Hindi. Specifically, the fronted object NP is first moved to the A-position, thus showing all the properties of A-

\[26\] Indefinite subjects in Chinese are obligatorily preceded by you 'exist'.
movement. It then moves vacuously to the CP-adjoined position to void its barrierhood. Here is the structural representation for extraction out of a fronted object NP:

\[
\begin{align*}
(82) & \quad \text{CP} \\
& \quad / \quad \text{\} NP_1 \text{ CP} \\
& \quad / \quad \text{\} NP_0 \text{ AgrSP} \\
& \quad \text{\} \quad \text{\} t_i \text{ AgrOP} \\
& \quad \text{\} \quad \text{\} t_o \text{ MP} \\
\end{align*}
\]

NP_o indicates that the object is CP-adjoined from [Spec, AgrOP], leaving a trace in that position. NP_1 is the element extracted out of the extraction domain NP_o in the A' -position.\(^{27}\)

To sum up, CP-adjunction provides a unified account for the data presented in this section. It correctly rules in all the grammatical sentences where the topic NP is extracted out of a relative clause in an S-initial subject NP or in a fronted object NP. It also correctly rules out ungrammatical sentences such as (83) below: the NP containing the gap in the object position cannot be a CP-adjoined extraction domain:

\[
(83) \quad *\text{Zhangsan}_i, \text{ wo bu zhidao } [\text{sp ni yijing mai-le } [\text{sp } e_i \text{ xie } t_i \text{ de shu}_j]]. \\
\quad \text{Zhangsan \ I not know \ you already buy-asp write DE book} \\
\quad *'*\text{Zhangsan}_i, \ I do not know that you have already bought books that } t_i \text{ wrote.}'
\]

\(^{27}\)As James Huang (p.c.) pertinently points out, Lasnik and Saito's proposal only exempts the S-initial phrase from barrierhood, but not any barrier it contains. Thus a relative clause contained in an NP is not de-barrier-ized if the containing NP occurs in an A' -position. Mike Rochemont (p.c.) suggests that the extraction in question can be accounted for if we assume that (i) the relative clause itself first moves out of the containing NP, and lands in an A' -position, (ii) the containing NP then moves, again to an A' -position, (iii) extraction occurs out of the relative clause. But the question is that there is no independent evidence to show that both the head and the relative clause can move either simultaneously as proposed here or separately.

Another hypothesis is that since the relative clause is in an A' -position, extraction out of it is allowed so long as the containing NP is A'-adjoined. In other words, a relative clause in Chinese is not a barrier for extraction out of it: whether extraction is eventually allowed or not depends on the position the containing NP occupies. This hypothesis is in line with Lasnik and Saito's proposal adopted in the text, but it also shares the stipulative nature of their proposal.

Fiengo et al (1988) also propose that QR at LF voids barrierhood.
Extractions out of a sentential subject and out of a sentential complement to a subject are subject to the same analysis.

2.4. Summary

In this chapter, I have investigated various kinds of object NP fronting. I propose that when an S-initial NP is construed with a gap in the following 'comment clause', this gap should be analyzed as the trace left by the movement of the NP. The major piece of evidence for this claim is that if the empty category is embedded in an island, a subjacency effect obtains. Furthermore, I show that there is a complication regarding the subjacency effect: it is suspended when the NP containing the gap is an S-initial subject or an object fronted to an S-initial position. I propose, based on Lasnik and Saito (1992), that it is because they are located in an A'-position that they cease to be barriers for extraction.

Having established that there is movement in cases of NP fronting, I then apply several diagnostic tests to this syntactic process. I propose that Chinese has two kinds of short-distance NP fronting: one is A'-movement and the other is A-movement, as is the case in Hindi and Japanese. Assuming the Split Infl Hypothesis, I further propose that A-movement involves raising to [Spec AgrOP] as a kind of overt raising for feature-checking, with the subject in the lower [Spec AspP]; on the other hand, the fronted NP displaying A'-movement properties is CP-adjoined after it first lands in [Spec AgrOP] (with the subject in the higher [Spec AgrSP]).
Chapter 3 Object NP Shift

This chapter focuses on investigating the syntactic properties of object shift, as illustrated in (1):

(1) wǒ zhè běn shū yǐ jìng zài huā yuán - lǐ kān wàn - le tī.
I this book already at garden-in finish-read-asp
Lit: 'I, this book, have already finished reading tī in the garden.'
Intended: 'I have already finished reading this book in the garden.'

In example (1), the object NP is shifted to a position after the subject. Phonologically, there is a slight pause after the subject. If the subject is a long one, a comma is used in writing. For ease of presentation, I refer to cases of this kind as object shift, reserving the term "NP fronting" for cases where the object is moved to the S-initial position as discussed in Ch. 2.

3.1. Properties of Object Shift

Object NP shift in Chinese has not received as much attention as NP fronting (but see Z. Lu 1991, F. Lu 1993). In this section, I examine the properties of this process in an attempt to establish a descriptive generalization about it.

3.1.1. Semantic Restrictions

There are semantic restrictions regarding what kind of objects can be shifted. As with the fronted NP, the shifted object must be a definite or generic NP denoting theme, and the subject is preferably an agent (Liu et al 1983:270). In the following sentences, these requirements are not met, making it impossible for the object to be shifted or fronted:
The theme NP in locative inversion (cf. Qu 1993), which must be indefinite, cannot be shifted or fronted either:

Although object shift and NP fronting are subject to the same semantic restrictions, the former is more restricted than the latter. F. Lu (1993:4) proposes the following constraint
regarding object shift: when both the subject and object are animate NPs, the object cannot be shifted, only fronted. Her constraint is formulated as follows:

\[(5) \quad \text{Animacy generalization: } \ast \text{ Subject NP } + \text{ Object NP } + V \\
\quad [ + \text{animate}] \quad [ + \text{animate}]\]

Her constraint correctly rules out reading (b) of the following sentence:

(6) \begin{align*}
\text{John} & \quad \text{Bill} \quad \text{jian-guo } t. \\
\text{John} & \quad \text{Bill} \quad \text{met-asp} \\
\text{(a) 'John, Bill has met t.' } \\
\text{('John' as the fronted object)} \\
\text{(b) Lit. 'John, Bill, has met t.'} \\
\text{Intended: 'John has met Bill.' } \\
\text{('Bill' as the shifted object)}
\end{align*}

Reading (6a) is allowed since there is no constraint against an animate subject NP preceded by a fronted animate object NP. Reading (6b) is out since an animate object NP is shifted and follows an animate subject NP. However, her constraint fails to rule out reading (b) in the following sentence:

(7) \begin{align*}
\text{niuyue shibao, tade wenzhang yijing piping-guole } t. \\
\text{New York times his article already criticize-asp} \\
\text{(a) New York Times, his article has already criticized t,'} \\
\text{('New York Times' as the fronted object.)} \\
\text{(b) Lit. 'New York Times, his article, has already criticized t.'} \\
\text{Intended: 'New York Times has already criticized his article.'} \\
\text{('His article' as the shifted object.)}
\end{align*}

In this sentence, both NPs are inanimate, but the second NP cannot be interpreted as the shifted object as is shown in reading (7b). This fact cannot be accounted for by Lu's animacy constraint.
Z. Lu (1991:51) also proposes a constraint, and he intends it to apply to both NP fronting and object shift. His idea is that the NP in object position (NP₀) cannot undergo either fronting or shift if the NP in subject position (NP₁) and NP₀ can switch thematic roles without violating selectional restrictions of the verb. Look at the following sentence with such a symmetric predicate as 'meet':

(8) John jian-guo Bill.
    John meet-asp Bill
    'John has met Bill.'

If we switch the positions of the two NPs in (8), we get (8'): the selectional restrictions of the verb jian 'meet' are not violated though the meaning of the sentence is different:

(8') Bill jian-guo John.
    Bill meet-asp John
    'Bill has met John.'

According to Z. Lu, since the two NPs in (8) can switch thematic roles without violating the selectional restrictions of the verb, NP₀ in (8) should not be fronted or shifted, or to quote him (1991:51), it should not "undergo either pre-O movement or topicalization". Suppose we front and shift the object in (8):

(9)   a. *Bill₁, John jian-guo t₂. (NP fronting)
      Bill₁ John meet-asp
      'Bill, John has met.' (The judgement is Lu's.)

   b. *John₁ Bill jian-guo t₂. (Object shift)
      John₁ Bill meet-asp
      'John has met Bill.'
Crucially, Lu judges both examples in (9) as ungrammatical, which conforms to his constraint. But evidence abounds in the literature showing that sentences like (9a) are grammatical (Xu and Langendoen 1985, F. Lu 1993). I also judge (9a) as grammatical, and thus consider his constraint too strong, although his basic insight is correct.

Given the empirical facts in (9), I will restate Lu’s (1991) descriptive generalization as in (10):

(10)  (a) If $NP_s$ and $NP_o$ cannot switch theta roles, $NP_o$ can be either fronted to the S-initial position or shifted to a position after the subject, provided the definiteness requirement of the NP is met.

        (b) If $NP_s$ and $NP_o$ can switch theta roles, then $NP_o$ can only be fronted to the S-initial position, not shifted.

The constraint in (10) can be formalized as follows:

(11)  Formalization of the constraint:

        \[ *NP_s + NP_{oi} + V + t_i \]

        (where $NP_s$ and $NP_o$ can switch $\Theta$ roles)

One way to interpret this constraint is that if there is an ambiguity due to the fact that either one of the two S-initial NPs can be the thematic agent, it should be disambiguated by treating the first NP as the fronted object. The reason that OSV is chosen over SOV is that OSV is the default option. Support for this claim comes from crosslinguistic evidence: fronting (or 'topicalization') is more common than object shift. For instance, English only has topicalization,
but no object shift.¹

Here is an example where the subject NP and the object NP CANNOT switch Θ roles:

(12) John jian-guozhezhong hua.
John see-asp this kind plant
'John has seen this kind of plant.'

(12') After switching Θ role:

*zhezhong hua jian-guojohn.
this plant see-asp John
*'This kind of plant has seen John.'

As the two NPs cannot switch Θ roles without violating selectional restrictions of the verb (see (12')), it falls outside of the constraint and the object NP can be both fronted and shifted:

(13) a. Object NP fronting of (12) is OK:

zhezhong hua, John, jian-guo t.
this plant John see-asp
'This kind of plant, John has seen.'

b. Object shift of (12) is also OK:

John, zhezhong hua, jian-guo t.
John this plant see-asp
'John has seen this kind of plant.'

¹James Huang (p.c.) also notes that object shift in Chinese is a fairly marked construction as opposed to object fronting, usually requiring a contrast. He further observes that although there is a general preference for interpreting NP NP V as a case of object fronting (OSV), but not as a case of object shift (SOV), this preference is completely non-existent in the following sentence, with the focus marker lian. The following sentence allows both SOV and OSV reading equally:

(i) Zhangsan lian Lisi dou bu pa.
Zhangsan even Lisi all not fear
a. 'Zhangsan is not even afraid of Lisi.' (SOV)
b. 'Lisi is not even afraid of Zhangsan.' (OSV)

I have no explanation for why the presence of lian undermines the reading preference noted in the text.
To sum up, NP fronting and object shift are very similar processes. The former is like the default case of object dislocation while the latter is an additional option for an object NP which cannot switch theta roles with the subject.²³

3.1.2. Object Shift and BA Construction

The object-shift construction looks similar to the BA-construction in having the object preverbally (see Li and Thompson 1981, Cheng 1991, Z. Lu 1991 on BA constructions):

(14) wo yijing zai huayuan-li BA zheben shu kanwan-le.
    I already at garden-in BA this book finish-read-asp
    'I have already finished reading this book in the garden.'

²For some speakers, if the subject is a pronoun and can switch theta roles with the object, the object can be not only fronted as in (ib), but also shifted as in (ic), contrary to our constraint:

(i) a. tamen jian-guo John.
    they meet-asp John
    'They have met John.'

   b. John, tamen jian-guo tā. (NP fronting)
    John they meet-asp
    'They have met John.'

   c. ? tamen John jian-guo tā. (Object shift)
    they John meet-asp
    'They have met John.' (or: 'John has met them.')

There are two possible solutions to this exception: one is that a pronoun is usually not topicalized (Henry Davis p.c.); the other is that a pronoun is deeper in the animacy hierarchy than an NP and is hence more agentive (James Huang p.c.). These two ideas may explain why the pronoun in (c) can be treated as the agent.

³One may replace the idea of theta role switching by the notion of 'symmetric predicate'. For instance, one may claim that (8) involves a symmetric predicate, and that it is the use of this particular predicate that makes it impossible for the object NP to be shifted. But as Mike Rochemont (p.c.) points out, the use of a 'symmetric predicate' is not isomorphic to switching theta roles. For instance, (12) uses the same 'symmetric' predicate jian 'see, meet' as in (8), but its subject is [+human] and its object is [-human]. Therefore the two NPs in (12) cannot switch theta roles as is shown in (12'). In other words, it is not true that the two NPs of a symmetric predicate can always switch theta roles. Because the NPs in (12) cannot switch theta roles, the object NP can be shifted as illustrated in (13b) despite the use of a 'symmetric' predicate. Given the set of data in (12-13), I follow Z. Lu (1991) in using the non-theoretical term 'theta-role switching', rather than 'symmetric predicate', as the constraint for object shift.
However, there are differences between object shift and BA construction. One of them is that the shifted NP can only precede an adjunct PP, as shown in (15a) below, not follow it, as is shown in (15b):

\[(15)\]  
\[\text{a. } \text{wo zheben shu}_1 \text{ yijing zai huayuan-li kanwan-le t.} \]
\[\text{I this book already at garden-in finish-read-asp} \]
\['I have already finished reading this book in the garden.'\]

\[\text{b. * wo yijing zai huayuan-li zheben shu}_1 \text{ kanwan-le t.} \]
\['I have already finished reading this book in the garden.'\]

In contrast, the BA-NP in (14) above can follow the PP, but not precede it as in (16):

\[(16)\]  
\[\text{** wo BA zheben shu yijing zai huayuan-li kanwan-le.} \]
\[\text{I BA this book already at garden-in finish-read-asp} \]
\['I have already finished reading this book in the garden.'\]

Another difference between these two constructions is the position of the negator: the BA-NP must follow the negator (see Li and Thompson 1981:478-480) while the shifted NP must precede the negator in the object shift constructions.

---

*Liu et al (1983:476) distinguish two kinds of positions for adjunct PPs with respect to the BA-NP. Take the locative PP for instance. If the PP also denotes the location of the subject, then it should precede the BA-NP. This is exemplified in example (14), which means that the subject 'I' is 'in the garden'. If, however, the locative PP only denotes the location of the BA-NP, it must follow the latter as is illustrated by the contrast in (i-ii):

\[(i)\]  
\[\text{wo BA daozi zai moshi-shang mohao-le.} \]
\[\text{I BA knife on grindstone sharpen-asp} \]
\['I have sharpened the knife on the grindstone.'\]
\[(The\ agent\ is\ not\ on\ the\ grindstone,\ only\ the\ knife.)\]

\[(ii)\]  
\[\text{wo zai moshi-shang BA daozi mohao-le.} \]
\[\text{I on grindstone BA knife sharpen-asp} \]
\['I sharpened the knife (while I was) on the grindstone.'\]
\[(semantically\ anomalous)\]
The third difference is that the BA-NP must be definite, not generic, while the shifted NP can be generic or definite.\(^5\)

(18) a.  *wo ba piju he-guo.
    I BA beer drink-asp
    'I have had the experience of drinking beer before.'

b.  wo piju he-guo.
    I beer drink-asp
    'I have had the experience of drinking beer before.'

c.  wo ba piju he-le.
    I BA beer drink-asp
    I drank (a specific bottle of) beer.

d.  ?wo piju he-le.
    I beer drink-asp
    I drank (a specific bottle of) beer.

As shown by examples (18b) and (18d), it is the aspect marker that seems to determine the generic or definite reading of the shifted NP. Even if we use the "right" aspect marker guo, the

\(^5\)Mahajan (1991) observes that the scrambled object in Hindi is specific. Diesing (1992) also notes that the NP outside the VP domain is definite or generic. See below for more discussion.
BA-NP in (18a) does not get the generic reading, unlike object shift in (18b). This establishes that the BA-construction is not the same operation as object shift.

In this chapter, we will focus on object shift constructions and discuss the syntactic properties of this process. Below I will first discuss the structural position of the shifted object with respect to other constituents such as adverbs and modal verbs. Then I will apply some diagnostic tests to the syntactic operation. I argue, based on these tests, that object shift is an A-type movement, as in some Scandinavian languages (Deprez 1989). Adapting Chomsky and Lasnik (1991), I further propose that the shifted object lands in the specifier position of AgrOP.

3.2. Interaction of the Shifted Object with Other Constituents

3.2.1. Interaction with Adverbs: the Shifted NP is to the Left of VP

Chinese has three kinds of adverbs, which have different distributions (Li and Thompson 1981:320, Chen 1987). They are (1) sentential adverbs, (2) non-manner adverbs and (3) manner adverbs. I assume that sentential adverbs are either VP-adjointed, which allows us to mark the VP boundary (cf. Diesing 1992:32 and Deprez 1989), or they are adjoined to any of the functional projections above VP; manner adverbs are V-adjointed (or V'-adjointed but immediately adjacent to the verb); non-manner adverbs are V'-adjointed.

---

6The function of these different aspect markers constitutes a very interesting topic for future research. See Z. Lu (1991:38) for some discussion of aspect and object shift. He proposes that perfective aspect licenses this syntactic process. However, this is falsified by data like (i):

(i)  wo zhexie dianying hen xiang kan.
    I these movies very like see
    'I would like to see these movies very much.'

7Sportiche (1988:432) assumes that sentential adverbs in French are adjoined to IP or I. Rizzi (1990:50) assumes that sentential adverbs like reason are adjoined to TP or AgrP and manner adverbs are adjoined to VP.
(A). **Sentential adverbs** occur either before or after the subject, or a fronted NP if any.

Examples of sentential adverbs are *jintian* 'today', *dagai* 'probably' and *xingkui* 'fortunately'. They do not occur after the PP adjunct. Like other adverbs, they never occur between the verb and the object or sentence-finally.

(19) **S-initially:**

```
xingkui  wo zai jia-li kan-guo zheben shu.
fortunately I at home-in read-asp this book
'Fortunately, I read this book at home.'
```

(20) **Between the subject and the PP adjunct:**

```
wo xingkui  zai jia-li kan-guo zheben shu.
I fortunately at home-in read-asp this book
'Fortunately, I read this book at home.'
```

(21) **Either before or after the fronted NP:**

a.  

```
xingkui  zheben shu, wo kan-guo ti.
fortunately this book I read-asp
'Fortunately, this book I have read.'
```

b.  

```
zheben shu, xingkui wo kan-guo ti.
this book fortunately I read-asp
'Fortunately, this book I have read.'
```

(22) **Not after the PP adjunct, between the verb and the object or sentence-finally:**

a.  

```
?*wo  zai jia-li xingkui  kan-guo zheben shu.
I at home-in fortunately read-asp this book
(* if using other sentential adverbs)
```

b.  

```
*wo  zai jia-li kan-guo xingkui  zheben shu.
I at home-in read-asp fortunately this book
'Fortunately, I read this book at home.'
```

c.  

```
*wo  zai jia-li kan-guo zheben shu xingkui  .
I at home-in read-asp this book fortunately
'Fortunately, I read this book at home.'
```
(B). The distribution of manner adverbs is limited to the position immediately before the verb. Such adverbs include manmande 'slowly' renzhen 'conscientiously', xiaoxinde 'carefully.'

(23) Immediately before the verb:

wo zai jia-li manmande kanwan-le zheben shu.
I at home-in slowly read-asp this book
'I finished reading this book at home slowly.'

(24) Not S-initially:

*manmande wo zai jia-li kanwan-le zheben shu.
slowly I at home-in read-asp this book
'Slowly, I finished reading this book at home.'

(25) Not between the subject and the PP adjunct:

*wo manmande zai jia-li kanwan-le zheben shu.
I slowly at home-in read-asp this book
'Slowly, I finished reading this book at home.'

(C). Non-manner adverbs, like manner adverbs, cannot occur sentence-initially; like sentential adverbs, they can occur between the subject and the PP adjunct. Such adverbs include henshao 'rarely', guyide 'purposely' (Chen 1987).

(26) Before PP (and after the subject) or after PP:

a. wo jingchang zai jia-li kan shu.
I frequently at home-in read book
'Frequently, I read books at home.'

b. wo zai jia-li jingchang kan shu.
I at home-in frequently read book
'I frequently read books at home.'

(27) Not immediately before the verb (after the manner adverb):

*wo zai jia-li manmande jingchang kan shu.
I at home-in slowly frequently read book
'Frequently, I read books slowly at home.'
(28) Not S-initially:

*jingchang wo zai jia-li kan shu.  
 frequently I at home-in read book  
 'Frequently, I read books at home.'

Given the distributions of various types of adverbs, I will provide object shift data below to establish where the shifted object is with respect to these adverbs.

The shifted object can occur either before or after a sentential adverb such as xingkui 'fortunately' whose position is marked by #:

(29) #1 wo ?#2 zheben shu, #3 zai huayuan-li kanwan-le t_1.
 I this book at garden-in finish-read-asp  
 'Fortunately, this book, I have finished reading in the garden.'

The shifted object occurs before (the PP and) the manner adverb as in (30a), not after them as in (30b-c):

(30) a. wo zheben shu, zai huayuan-li manmande kanwan-le t_1.
 I this book at garden-in slowly finish-read-asp  
 'I have finished reading this book slowly in the garden.'

b. *wo zai huayuan-li zheben shu, manmande kanwan-le t_1.
 I at garden-in this book slowly finish-read-asp  
 'I have finished reading this book slowly in the garden.'

c. *wo zai huayuan-li manmande zheben shu, kanwan-le t_1.
 I at garden-in slowly this book finish-read-asp  
 'I have finished reading this book slowly in the garden.'

Further as shown in (31a) below, the shifted object must precede the non-manner adverb, but not follow it, as is shown in (31b):

(31) a. wo zheben shu, zai huayuan-li manmande kanwan-le t_1.
 I this book at garden-in finish-read-asp  
 'I have finished reading this book in the garden.'

b. *wo zai huayuan-li zheben shu, manmande kanwan-le t_1.
 I at garden-in this book finish-read-asp  
 'I have finished reading this book in the garden.'
(31)  
\[ \text{a. } \text{ta zhezhong shi, henshao zai xuexiao-li shuo t.} \]
\[ \text{he this thing rarely at school-in say} \]
\[ \text{'He rarely mentions this kind of things at school.'} \]

\[ \text{b. } *\text{ta henshao zhezhong shi, zai xuexiao-li shuo t.} \]
\[ \text{he rarely this thing at school-in say} \]
\[ \text{'He rarely mentions this kind of things at school.'} \]

Notice that even if the shifted object precedes the non-manner adverb, the sentence is still bad if it follows the PP:

(32)  
\[ \text{?*ta zai xuexiao-li zhezhong shi, henshao shuo t.} \]
\[ \text{he at school-in this thing rarely say} \]
\[ \text{'He rarely mentions this kind of things at school.'} \]
\[ (* \text{if using such non-manner adverbs as guyide 'deliberately'.}) \]

This indicates that the shifted object must precede not only the non-manner adverb, but also the adjunct PP.

To summarize the interactions between the shifted object and adverbs:

(1) it can be preceded or followed by the sentential adverb;

(2) it must be followed by the non-manner adverb and the manner adverb as well as PP,

The conclusion based on these interactions is that the shifted object must be to the left of VP. Schematically, the positions of the constituents involved are represented below:

(33)  
\[ \text{Subject + S-adv. + Shifted Object, + S-adv. + non-manner adv. + PP + non-manner adv. + manner adv. + V + t.} \]

\[ 8 \text{An exemplification of (33) with all the adverbs present is given in (i):} \]

(i)  
\[ ?\text{wo xingkui zheben shu jintian zai jia-li guyide manmande kanwan-le.} \]
\[ \text{I fortunately this book today at home-in deliberately slowly finish-read.} \]
3.2.2. Interaction with modals: the Shifted Object is to the Left of Modals:

Chinese modals include the following: yinggai 'should', gan 'dare', bixu 'must', neng 'can'. As in English, they always precede the main verb. But they must follow the shifted object, if any.

3.2.2.1. Interaction with modals and PP:

Take the modal verb neng 'can' for instance. The canonical word order of a sentence containing this modal is as follows:

(34) ta neng zai tianhei-qian ganwan zhejian shi.
he can at dark-before complete this matter
'He can finish this thing before dark.'

Consider cases where the object is shifted. As shown in (35a), it is acceptable for the object to land in a position before the modal verb, but not after the modal verb and before the PP as in (35b), or after both the modal verb and the PP as in (35c):

(35) a. ta zhejian shi, neng zai tianhei-qian ganwan t.
he this matter can at dark-before complete
'He can finish this thing before dark.'

b. *ta neng zhejian shi, zai tianhei-qian ganwan t.
he can this matter at dark-before complete
'He can finish this thing before dark.'

Fortunately, I read this book deliberately slowly at home.'

The unnaturalness of (i) is due to the stacking up of adverbs, just as in its English translation.

9Modals are not raising verbs, since they never take aspect markers as verbs do. Also notice that yinggai 'should' has some idiosyncratic properties which are not shared by other modal verbs. For instance, it can co-occur with another modal verb. Moreover, it can occur S-initially. Cheng (1989) treats it as a kind of sentential adverb.
The descriptive generalization from the data above is that the shifted NP must precede the modal verb. In other words, it looks as if it occupies a position higher than the functional projection headed by the modal verb.

3.2.2.2. Interaction with a modal verb and an adverb:

In this section, we briefly examine the interaction of the shifted object with respect to the modal verb and adverbs.

A. Sentential adverb: As is shown in (36), the shifted object can precede the modal verb, but follow the sentential adverb:

\[(36)\]  
\[ta jintian zheben shu, neng kanwan t.\]  
he today this book can finish-read  
'He can finish reading this book today.'

In (37a-b) below, the shifted object can precede both the modal verb and the sentential adverb:

\[(37)\]  
\[a. ta zheben shu, neng jintian kanwan t.\]  
he this book can today finish-read  
'He can finish reading this book today.'

\[b. ta zheben shu, jintian neng kanwan t.\]  
he this book today can finish-read  
'He can finish reading this book today.'

(38) below is ruled out since the modal precedes the shifted NP.
(38)  *ta neng zheben shu, jintian kanwan t.
  he can this book today finish-read
  'He can finish reading this book today.'

B. Manner adverb: The following set of data indicate that the shifted object must precede the modal verb which must in turn precede the manner adverb:

(39)  a. ta zheben shu, neng renzhende kanwan t.
  he this book can conscientiously finish-read
  'He can finish reading this book conscientiously.'

b. *ta zheben shu, renzhende neng kanwan t.
  he this book conscientiously can finish-read
  'He can finish reading this book conscientiously.'

c. *ta neng zheben shu, renzhende kanwan t.
  he can this book conscientiously finish-read
  'He can finished reading this book conscientiously.'

To conclude, the interaction of the shifted object with respect to the modal and adverbs confirms the descriptive generalization reached earlier. It must precede the modal and the manner adverb, but it can precede or follow the sentential adverb.

3.2.3. Interaction with Negators: the Shifted Object is to the Left of the Negator

Chinese has different kinds of negators; the most common ones are meiyou 'not' (perfective) and bu "not" (future or volitional) (cf. Li and Thompson Ch.8). Both of them precede the main verb. Now consider the following negative sentences:

(40)  a. Canonical word order:
  John meiyou kan-guo zheben shu.
  John not read-asp this book
  'John has not read this book.'
When the object is shifted, it must precede the negator, not follow it:

(40) b. Object shift:

\[
\begin{align*}
\text{John zheben shu, meiyou kan-guo t\.} \\
\text{John this book not read-asp} \\
\text{John has not read this book.}
\end{align*}
\]

\[
\begin{align*}
\text{*John meiyou zheben shu, kan-guo t\.} \\
\text{John not this book read-asp} \\
\text{John has not read this book.}
\end{align*}
\]

Examples (40b-c) show that the object must be shifted to the left of the negator, not to the right of it. Let us assume that a negator in Chinese is an adverb adjoined to V’ or to the single bar level of one of the functional projections\(^{10}\). The data above are consistent with our conclusion reached earlier: the shifted NP is to the left of VP.

\(^{10}\)The claim that a negator is just an adverb is supported by the following data:

(i) \(\text{ta bu keyi lai} \)
he not may come
'He may not come.'
(or: 'It is not all right for him to come.')

(ii) \(\text{ta keyi bu lai.} \)
he may not come
'He may not come.'
(or: 'It is all right for him not to come.')

The fact that a negator can occur either before or after the modal indicates that there is no NEGP, and that the negator is simply adjoined as an adverb to V’ (like a non-manner adverb) or to the single-bar level of a functional projection. Deprez (1989:223) proposes that Negation is a sentential adverb, and does not head its projection in Icelandic and Mainland Scandinavian languages.

Chen (1987) claims that a sentential adverb cannot occur in a position after a negator. But the following example shows that this is a not valid claim:

(iii) \(\text{wo bu neng jin\textit{tian} lai.} \)
\(\text{I not can today come} \)
'I cannot come today.'

Under my analysis, \(bu\) as an adverb can be adjoined to a functional projection while \(\text{jintian}\) can be VP-adjointed.
What if there is a negator modifying a modal? Look at the following sentence:

(41)  
\text{ta bu \ keyi kan zheben shu. (canonical construction)}

he not may read this book

'He may not read this book.'

If the object is shifted, it can only land between the subject and the negator as in (42a), not between the negator and the modal verb as in (42b), or between the modal verb and the verb as in (42c):

(42) a.  
\text{ta zheben shu bu keyi kan ti.}

he this book not may read

'This book, he may not read.'

b.  
\text{*ta bu zheben shu, keyi kan ti.}

he not this book may read

'This book, he may not read.'

c.  
\text{*ta bu keyi zheben shu, kan ti.}

he not may this book read

'This book, he can not read.'

This group of data indicate that the correct linear order of the shifted object with respect to the negator and the modal verb is that it should be the first element after the subject. Now compare with the following sentence, where the negator is between the modal verb and the main verb which is modified by the negator.

(43)  
\text{ta yinggai bu kan zheben shu. (canonical construction)}

he should not read this book

'He should not read this book.'

Notice that even in this case, the shifted object must be the first element after the subject, as is shown in (44a). It cannot land between the modal and the negator (44b) or between the negator and the verb (44c):
The significance of this set of data is that, whether the negator modifies the modal verb or the main verb, the shifted object must precede the modal and the negator.

To conclude, interactions of the shifted NP with adverbs, modals and negators indicate that except for the sentential adverb, the shifted NP should be the first constituent after the subject, preceding the modal and its negator as well as other types of adverbs and PPs.

3.3. Object NP Shift and its Landing Site:

To summarize the descriptive generalizations discussed above, here is a schematic representation of the positions of the elements involved:

(45) subject - S-adv. - Shifted Obj. - S-adv. - modal - S-adv. - [\_\_ \_ non-mnr adv. - PP - non-mnr adv. - manner adv. - V - t₁ ]

In this section, we will examine the syntactic position of the shifted object NP. Z. Lu (1991:53, 69) assumes, without arguments, that the shifted object is VP-adjoined, while F. Lu (1993:7-9) claims that it is adjoined to ModalP since it is higher than the modal verb. What
these two proposals imply is that the shifted object lands in an A'-position. However, there are reasons to believe that their analyses are not correct.

3.3.1. Object NP Shift as an A-movement:

In this section, I apply some of the diagnostic tests used in Section 2.2.1.2. of Ch. 2. I will argue that the shifted object displays A-movement properties, not A'-movement properties. The three tests used in section 2.2.1.2. of Ch.2 for A-movement are (a) the ability to remedy WCO violations, (b) the absence of reconstruction effects, and (c) the ability of the displaced object NP to serve as an A-binder for an anaphor in the subject position. The last test does NOT apply here since the object does not cross the subject.11

Test A: The ability to remedy WCO violations: In (46a) below, the pronoun cannot be co-indexed with the universal quantifier object to its right. But if the quantified NP is shifted, co-indexing becomes acceptable as is shown in (46b):

---

11I used two tests for A'-movement in section 2.2.1.1. of Ch.2. One was 'Reconstruction Effect' test where the anaphor contained in the fronted object can still be bound by the subject. The other test was 'Condition C type Reconstruction Effect' test where a name contained in the fronted object NP cannot be co-indexed with the pronominal subject unless the name is further embedded in the fronted NP. As both tests rely on the subject across which the object NP is fronted to the S-initial position, they are not applicable here since the subject is not crossed, at least in the S-structure representations. For instance,

(i) John, bu xihuan [ziji, de wenzhang].
   John not like self DE papers
   Lit.: 'John, does not like self'si papers.'

(ii) John, [ziji, de wenzhang], dou bu xihuan ti.
    John self DE papers even not like
    Lit.: 'John, self'si papers, does not like.'

Although 'self' in the shifted object is still bound by the subject 'John' as is shown in (ii), it does not tell us anything about the nature of the position of the shifted object NP. Also note that the adverb dou in (ii) means 'even' (see Liu et al 1983).
The ungrammaticality of (46a) is due to a WCO configuration: the universal quantifier is subject to LF Quantifier Raising which is an A'-movement, A'-binding both the crossed pronoun and its variable. In (46b), although the universal quantifier object moves across the co-indexed pronoun at S-structure, it does not induce a WCO effect. This indicates that the S-structure shift of the object is an A-movement, not an A'-movement.

Test B: The absence of reconstruction effects: As demonstrated in Section 2.1.2.2 of Ch.2, when both the direct object and indirect object are in situ, the preceding indirect object cannot be a pronoun co-indexed with the NP in direct object position. But when the direct object is fronted, coindexing becomes acceptable. This co-indexing possibility also applies to object shift.

\[12\text{Notice that in (46b) there is the adverb of universal quantification } \textit{dou} \text{ though it is absent in (46a). The difference in grammaticality judgement between these two sentences has nothing to do with its presence or absence. } \textit{Dou} \text{ is independently required when a universal quantifier object is shifted or fronted, as observed in Ch.2:}\]

(i) wo (*dou) du-guo suoyoude jufashu.
I all read-asp every books-on-syntax
'I have read all the books on syntax.'

(ii) wo suoyoude jufashu, *(dou) du-guo t1.
I every books-on-syntax all read-asp
'I have read all the books on syntax.'
a. Canonical word order:

*wo gei-le \( t_a \) John \( i \) de shu.
I gave-asp him John DE book
*I gave him, John's book.'

b. Direct object fronted (from Ch.2):

\[ \text{[John} \_ \text{de shu]} \_ \text{wo yijing gei-le ta}_i \_ t_j. \]
John DE book I already gave-asp him
'John's book, I already gave him.'

c. Direct object shifted:

\[ \text{?wo \{John} \_ \text{de shu}\}_i \_ \text{yijing gei-le ta}_i \_ t_j. \]
I John DE book already gave-asp him
'John's book, I already gave him.'

Since reconstruction applies to the site of a variable, and there is no reconstruction effect, \( t_j \) in (47b-c) must be an NP trace, not a variable, and the movement is an A movement.

Another example can be constructed using the Chinese equivalent of the English verb 'show', as in (48) below:

a. \( \text{wo gei John} \_ \text{kan-guo [ zhezhang zhaopian ]}. \]
I to John see-asp this photo
'I showed John this photo.'

b. \( \text{wo gei John} \_ \text{kan [ taziji de zhaopian ]}. \]
I to John see himself DE photos
'I showed John his own photos.'

The complex anaphor in (48b), unlike a simple anaphor, is not subject-oriented (cf. Tang 1989) and can be bound by the prepositional object. If we shift the object containing the anaphor as in (49b), the sentence becomes ungrammatical, even though the object in this kind of constructions can be shifted independently as shown in (49a):
If the shifted object lands in an A'-position, the anaphor should be able to be bound under reconstruction at LF by the prepositional object and the sentence should be good. Lack of reconstruction effect in (49) indicates that the landing site of the shifted direct object is not an A'-position, but an A-position.

Test C: Locality Constraint: It has been shown in GB literature that A-type movement is bounded (cf. Chomsky 1986ab among others). For instance, "superraising", an unbounded A-movement, is ruled out as in the following English sentence:

(50) *John, seems [ that it is likely [t, to win the game ]].

As is shown below, Chinese object shift is also bounded. While the embedded object can be shifted to a position after the subject of its own clause as in (51a), it cannot be shifted to a position after the subject of the matrix clause, as is shown in (51b):

(51) a. wo renwei [p ta zheben shu, yijing kanwan-le t].
I think he this book already read-asp
'I think that he has finished reading the book.'

b. *wo zheben shu, renwei [p ta yijing kan-guo t].
I this book think he already read-asp
Lit.: *'I, this book, think that he has read t.'
If object shift is an A'-movement, we should expect that long-distance shift as in (51b) should be grammatical as in other long-distance A'-movement. Compare with the following sentence, which is a topicalization or fronting process across a CP boundary:

(52) "This book, I think he has finished reading [it] already."

As argued in Ch. 2, long-distance fronting in Chinese is an A'-movement, like long-distance scrambling in Hindi. The contrast between (51b-52) indicates that while NP fronting involves A'-movement and is therefore unbounded, object shift can only be A-movement and is therefore local. See section 3.3.4. for why object shift can only be local.

To conclude, the shifted object displays three syntactic properties: (a) it remedies WCO; (b) it shows no reconstruction effect; (c) it is clause-bounded. These properties indicate that object shift is an A-movement, not an A'-movement. The fact that the shifted NP exhibits A-properties thus invalidates the A'-adjunction analysis as proposed in Z. Lu (1991) and in F. Lu (1993).

A-type object shift is also found in other languages. For example, Tada (1990) as quoted in Saito (1992:111 fn. 7 and p.114 fn. 37) notes that Japanese has a so-called VP-internal scrambling where the scrambled object does NOT cross the subject. Further, this VP-internal scrambling has all the properties of A-movement. It remains to be seen whether this VP-internal scrambling is really VP-internal. The fact that scrambling/shift in both Japanese and Chinese exhibits A-properties suggests they may be the same process.

Mahajan (1990) claims that short distance scrambling can be either L- or non-L movement. In the data he provides (1990:34), the direct object does not display reconstruction
effect when it is shifted to a position after the subject, but it does when it is topicalized before the subject:

(53) raam-nei mohan-koj apnii_g kitaab lottaaii.
Ram (SUB) Mohan (IO) self's book-f(DO) return-perf-f
'Ram, returned self's book to Mohan.' (his (45))

(54) raam-nei [apnii_g kitaab]_k mohan-koj tk lottaaii.
Ram (SUB) self's book-f(DO) Mohan (IO) return-perf-f
'Ram, returned self's book to Mohan.'

(55) [apnii_g kitaab]_k raam-nei tk' mohan-koj tk lottaaii.
self's book-f(DO) Ram (SUB) Mohan (IO) return-perf-f
'Ram returned self's book to Mohan.'

(54) resembles our object shift in that the direct object lands in a position after the subject. Notice that the anaphor contained in the shifted direct object can no longer be bound by the indirect object across which the direct object has shifted. This, according to Mahajan, indicates that tk is not a variable and the shift is an L-movement. In contrast, the anaphor in the topicalized direct object in (55) can still be bound by the subject, thus indicating that tk' is a variable and that the second step of movement is a non-L movement. What is relevant to our discussion here is that the object shift demonstrated in (54) displays A-movement, exactly as in Chinese and Japanese.13

13According to James Huang (p.c.), in contrast to the unambiguous (55) in Hindi, the Chinese counterpart is ambiguous, admitting both i and j reading:

(i) tazijii_de fenshu, Zhangsan yijing gaosu LiSi le.
himself DE grades Zhangsan already tell Lisi particle
'His own grades, Zhangsan already told Lisi.'

As Huang suggests, one way to account for this ambiguous reading is to explore the possibility to directly front the direct object into the pre-subject position, rather than to first shift the direct object before fronting it. One potential problem with this direct A'-fronting is that the direct object would be deprived of an opportunity of moving through [Spec Agr OP] for feature/Case checking. I have no solution to this problem.
Deprez (1989) discusses object shift in such European languages as Mainland Scandinavian, Icelandic, German and Dutch. Her conclusion, based on similar tests to those used here, is that the object shift in these languages is also A-movement.

3.3.2. The Shifted Object in [Spec AgrOP]

As discussed in Ch.2, a fronted object NP can land in an A position since it can serve as an A-binder for an anaphor in the subject NP. For example:

(56) John1, ziji1 de haizi dou bu zunjing ti1. (OSV)
John self DE kids even not respect
Lit.: 'John1, even self’s kids do not respect ti1.'
Intended: 'Even John’s kids do not respect John.'

In (56), the fronted object NP acts as an A-binder for the anaphor in the subject NP. Hence the conclusion that there must be an A-position before/above the position of the subject. I have also shown in this chapter based on several diagnostic tests that a shifted NP lands in an A-position. This entails that there should be an A-position after the subject, but before the modal verb and VP. As subject is canonically in an A-position, there should be at least two A-positions S-initially in a sentence with the OSV or SOV order:

(57)

a. A-positions in the OSV word order (in A-type fronting):

A-position + A-position + modal + VP...
(for fronted obj.) (for subject)

b. A-positions in the SOV word order:

A-position + A-position + modal + VP...
(for subject) (for shifted obj.)
(57a) is illustrated by example (56) provided above, and (57b) by example (58) given below:

(58) John zheben shu, bu xihuan ti. (SOV)
    John this book not like
    'John does not like this book.'

In Ch.2, adapting Pollock (1989), Mahajan (1990) and Chomsky and Lasnik (1991:33, 82), I proposed the following clausal structure for Chinese:

(59)

I further proposed that the SVO and OSV word orders found in Chinese are derived as follows:

SVO: the canonical word order: The subject NP, base-generated in [Spec VP], moves overtly to [Spec AspP] as an intermediate step for Case assignment. (Alternatively, the subject can further move to [Spec AgrSP] for feature checking, though the S-structure effect could be vacuous in the SVO order.) The object NP remains as sister to the V and later undergoes covert movement at LF to [Spec AgrOP] for feature/Case checking.
OSV: the word order for A-type fronting: The object NP undergoes overt raising to [Spec AgrOP]. The subject NP moves to and remains in [Spec AspP] at S-structure, but it later moves to [Spec AgrSP] at LF for feature-checking.

Now for the NP shift word order SOV, I propose that both the subject NP and the object NP overtly raise to [Spec AgrSP] and [Spec AgrOP] respectively, and the result is the following S-structure word order:14

\[
(60) \quad \text{CP} \\
/ \backslash \\
\text{AgrSP} \\
/ \backslash \\
\text{subj}_i \quad \text{AgrOP} \\
/ \backslash \\
\text{obj}_j \quad \text{AspP} \\
/ \backslash \\
t_i \quad \text{VP} \\
/ \backslash \\
t_j \quad \text{V'} \\
/ \backslash \\
\text{V} \quad \text{t}_j
\]

Recall that in discussing short distance A'-fronting in Ch. 2, I proposed that both the subject and the object raise overtly to [Spec AgrSP] and [Spec AgrOP] respectively before the object is further CP-joined, thereby displaying A'-movement properties. The fact that Chinese overtly exhibits A-type object shift yielding SOV constructions lends strong empirical support for my

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14 Travis (1991) cites four analyses for the derived or scrambled object in the literature:
(a) Mahajan’s analysis (1990): it is in [Spec AgrOP], hence outside VP (or [Spec AGR2 for ‘VP-internal shift’ 1990:28-29]);
(b) Johnson (1990): it is in [Spec VP], hence inside VP;
(c) Sportiche (1990): it is inside VP in the Spec of the lower VP in the Larsonian sense of a layered VP.
(d) Travis (1991): it is in Spec of a second ASPP located between a higher VP and a lower VP.

The adopted structure for Chinese object shift resembles Mahajan’s proposal for Hindi.
proposal. Specifically, it justifies the 'overt raising' of the subject NP and the object NP as a legitimate intermediate step for deriving short-distance A'-fronting.

Take the following sentence for instance:

(61) John zheben shu_i kan-guo t_i.
John this book read-asp
'John has read this book.'

Its D-structure and S-structure are represented in (62a-b) respectively:

(62) a. D-structure for (61):

```
CP
 / \ AgrSP
    / \ AgrOP
       / \ AspP
          / \ VP
             / \ John_i V'
                / \ V NP_i
                     kan-guo [zheben shu]
```
To sum up, as NP shift is uniformly A-movement, I propose that the landing site of this shifted NP is [Spec AgrOP]. In the next section, I will justify the postulation of AgrP in Chinese even in the absence of morphological agreement.  

### 3.3.3. The Definiteness of the Shifted NP and the Postulation of Agr in Chinese

The three types of word order in Chinese are derived from the movement of the subject and/or the object to the Spec positions of Agr projections. Given that Chinese has no morphological agreement, an immediate question arises: how plausible is it to postulate an AgrP in the absence of morphological agreement in Chinese? It has been proposed in the literature that there is a correlation between the definiteness of the moved NP and agreement. For instance, Mahajan (1991) observes that the shifted object in Hindi has the specific reading and it is analyzed as moving into [Spec AgrOP]. Runner (1994:153) recently shows that there are five

---

15It has been proposed in the literature that overt object shift is predicated on overt verb movement (Deprez 1989, Mahajan 1990). Although Chinese has object shift as shown in this chapter, it does not exhibit overt verb (to Infl) movement. This suggests either that the proposed correlation between object shift or verb movement is wrong, or that object shift is not a unitary process crosslinguistically. See section 5.2. for more discussion.
ways in which the specificity reading of an NP correlates with Agr:

(63) Five Manifestations of the Correlations between Specificity and Agr (Runner 1994:153):

(a) DP itself bears certain Case, as in Turkish and Finnish;
(b) DP triggers object agreement on the verb, as in Hindi;
(c) both DP and the verb show Agr, as in Greenland Eskimo;
(d) DP overtly surfaces in [Spec AgrP], as in Spanish, German and Catalan;
(e) verbs overtly moves to Agr, as in Hungarian.

What is relevant for our discussion here is (63d). For instance, in Catalan, when an indefinite subject is postverbal as in (64a), it has the existential/non-specific reading; in contrast, when it is preverbal, i.e. in [Spec, AgrP] as shown in (64b), it gets the specific reading:

(64) (a) Ha caigut un roc
has fallen a rock
'A stone fell.'
(b) Un roc ha caigut.
a rock has fallen
'One (of the) stones fell.'

The same paradigm obtains for subject NPs of Chinese unaccusative verbs as shown in (65):

(65) (a) Zhao huo le.
burn fire particle.
'Fire! Fire!'
=there exists A fire.
(a') Huo zhao le.
fire burn particle
'THE fire has started.
(b) Chen chuan le.
sink boat particle
'There sank A boat'
= 'A boat has sunk.'
(b') Chuan chen le.
boat sink particle
'THE boat has sunk.'

Since subject NPs of unaccusative verbs in Chinese behave like their counterparts in Catalan, I propose that the correlation between specificity and Agr in Chinese should belong to group (d) as discussed in Runner, i.e. DP overtly surfaces in [Spec Agr]. In fact, this conclusion based on the unaccusative data provides independent support for my proposal for treating [Spec
AgrOP] as the landing site of the shifted object, which must be definite/specific.

Without assuming the Split Infl Hypothesis, Diesing (1992) also shows that an (indefinite) NP in German must be outside the VP domain to obtain a specific reading. Recall that in Chinese, the shifted and fronted NP must be definite or generic. The relevant data are repeated below.

(66) A. definite NP:
   a. *zheben shu, wo yijing kanwan-le ti. (fronting)
      this book I already finish-read-asp
      'This book, I have already finished reading.'
   b. wo zheben shu, yijing kanwan-le ti. (shift)
      I this book already finish-read-asp
      'This book, I have already finished reading.'

B. generic NP.16
   a. pijiu, wo he-guo ti. (fronting)
      beer I drink-asp
      'I have had beer before.'
   b. wo pijiu, he-guo ti. (shift)
      I beer drink-asp
      'I have had beer before.'

C. indefinite NP:
   a. *yiben shu, wo yijing kanwan-le ti. (fronting)
      one book I already finish-read-asp
      'One book, I have already finished reading.'
   b. *wo yiben shu, yijing kanwan-le ti. (shift)
      I one book already finish-read-asp
      'One book, I have already finished reading.'

---

16 Following a proposal by Kratzer, Diesing (1992:95-96) argues that generics are associated with a presuppositional reading, and are hence specific. I assume that in Chinese generics also have a presuppositional reading and therefore can be fronted and/or shifted on a par with definite NPs.
Since there is a correlation between the definiteness of the shifted NP and agreement in morphologically rich languages, the obligatory definiteness of the shifted and fronted NP in Chinese suggests that there are Agr projections in this language despite the absence of morphological evidence. This is on a par with the postulation of abstract Case in Chinese despite the absence of its morphological manifestation. Furthermore, this correlation further motivates our analysis that the landing site of the shifted NP and fronted NP (in A-type movement) in Chinese should be the Spec of an Agr projection.  

3.3.4. Evaluation of the Proposal:

The [Spec AgrP] substitution analysis allows us to capture a number of facts. First, it accounts for why only NPs, not other maximal projections like AP, can be shifted, for Spec typically accommodates NPs. In addition, the clausal structure postulated here gives us some intermediate A-positions before the VP: the spec positions of AspP, AgrOP and AgrSP. It thus accounts for why the shifted NP displays only A-movement properties, given that the spec position of AgrOP is an L-related position, as proposed in Mahajan (1990).

Second, it captures the same semantic restrictions for the fronted NP (to the S-initial position) and for the shifted NP. They must be a definite or generic NP, as is shown at the beginning of this chapter. For instance:

(67) a. ta daozi-le di-shang. (Object is a locative NP.)
   he fall-asp floor-on
   'He fell onto the floor.'

17 Some explanations have been attempted in the literature regarding why Agr is relevant for the specificity reading. Mahajan (1991) propose that Agr has pronominal features, thus making the NP in its Spec specific via Spec-head agreement. Runner (1994) suggests that Agr can be anaphoric to discourse. I leave the final decision open for future research.
Our analysis entails that object fronting and shift are similar syntactically in that both are overt raising of the object NP (either generic or definite). Therefore, it is only natural that these two processes should have the same semantic requirements.

Third, it accounts for the position of the sentential adverb with respect to the shifted object. Assuming that the sentential adverb is adjoined to VP or to any functional projections above VP, it predicts that a sentential adverb like *jintian 'today' can occur in any of the positions marked by #:

(68)  # ta # zhejian shi, # neng # ganwan ti,
      he  this thing  can  accomplish
      'He can finish doing this thing today.'

Under our analysis, the position of the sentential adverb between the shifted NP and the modal verb is expected. This is because the adverb can be analyzed as adjoined to MP, which is dominated by AgrOP:
Finally, my analysis solves two related problems noted in F. Lu (1993). The first one is that while the embedded object can be fronted to the S-initial position of either the embedded clause or to the matrix clause, it can only be shifted to the position after the embedded subject, not after the matrix subject:

(70) Wangwu shuo [Lisi duwan-le naben xiaoshuo].
Wangwu say 'Lisi read-asp that novel
’Wangwu said that Lisi finished reading that novel.’

(71) Wangwu shuo [naben xiaoshuo, Lisi duwan-le tJ]. (short-distance fronting)
Wangwu say that novel Lisi read-asp
’Wangwu said that that novel, Lisi finished reading (it).’

(72) naben xiaoshuo, Wangwu shuo [ Lisi duwan-le tJ]. (long-distance fronting)
that novel Wangwu say Lisi read-asp
’That novel Wangwu said that Lisi finished reading (it).’
Lu (1993:14) claims without argument that the object is shifted to obtain scope. Her solution for the contrast between (73) and (74) is that since only the finite clause can bear scope, the movement to the immediate sentential position as in (73) will satisfy the scope requirement. The Principle of Economy excludes further movement to the secondary preverbal position in the matrix clause as is shown in (74).

Lu's scope account can be challenged for the following reasons. First, she does not provide evidence to substantiate her claim that an object NP is shifted to obtain scope. Second, as we have shown above, NP fronting and NP shift are subject to the same requirements and represent very similar processes. If an NP is shifted to obtain scope, it is only expected that a fronted NP moves to obtain scope too. But if this is the case, Lu's account then predicts that the matrix fronting/topicalization case of (72) should be ruled out by Economy on a par with matrix shift case of (74): the NP can obtain scope in the S-initial position of the embedded clause as in (71); therefore, there should be no need for it to be further fronted to the S-initial position of the matrix clause. As (72) shows, however, fronting an embedded object to the matrix S-initial position is acceptable.

The contrast between (72) and (74) follows from our account. We have assumed with Mahajan (1991) that NP shift is an A-movement which is a local process while long-distance fronting is obligatorily an A'-movement. In (74), the object NP is shifted and it should be an A-movement, but it is a long-distance process, thus violating the locality restriction of A-
movement. This is in contrast to (73) which involves 'local' NP shift. (72) is grammatical because (a) it involves fronting, and (b) long-distance fronting as an A'-movement is allowed. Hence the contrast between (72) and (74). Alternatively, the ungrammaticality of (74) can be accounted for as follows. The embedded object is in the matrix [Spec AgrOP]. But this matrix [Spec AgrOP] should accommodate the object complement clause, not the embedded object. Due to this conflict, feature checking crashes. Notice that this is consistent with the locality constraint for A-movement if this process is viewed as a kind of feature checking as envisaged in the minimalist program.18

Another, and related, problem noted by Lu is that in a pivot construction, an embedded NP has to cross over the matrix verb to be shifted. A canonical pivot construction in Chinese is given in (75):

(75) Wangwu BI Lisi du-guo naben xiaoshuo.
    Wangwu force Lisi read-asp that novel
    'Wangwu FORCED Lisi to read that novel.'

In contrast to English, although the embedded verb can take an aspect marker, this aspect marker can only be construed with the matrix verb, not the embedded verb. (75) means that 'the forcing by Wangwu took place in the past, and it could be very well true that Lisi did not read that novel despite Wangwu's forcing.' (see Cheng 1989 and Li 1990 for more discussion). Lu correctly observes that whether it is fronting or shift, the NP involved cannot land within the lower clause, which, she claims, is an infinitive clause:

---

18 Another way to rule out (74) is that the embedded object undergoes improper movement (Mike Rochemont p.c.): it is first adjoined to the embedded CP in order to get out of the clause, then it raises to the matrix [Spec AgrOP], an A-position.
Fronting cases:

(76) *Wangwu BI naben xiaoshuo, Lisi du-guo ɨ.
    Wangwu force that novel Lisi read-asp
    Lit.: *'Wangwu forces, that novel, Lisi to read ɨ.'

(77) Naben xiaoshuo, Wangwu BI Lisi du-guo ɨ.
    that novel Wangwu force Lisi read-asp
    Lit.: 'That novel, Wangwu forces Lisi to read ɨ.'

Shift cases:

(78) *Wangwu BI Lisi naben xiaoshuo, du-guo ɨ.
    Wangwu force Lisi that novel read-asp
    Lit.: *'Wangwu forces Lisi that novel, to read ɨ.'

    Wangwu that novel force Lisi read-asp
    Lit.: *'Wangwu, that novel, forces Lisi to read ɨ.'

Lu’s account (1993:14) is that an NP cannot be shifted within an infinitive clause since infinitive clauses are 'tense dependent' and do not bear scope. However, this explanation is not adequate for the following reasons. First, it is not clear how she accounts for the fronting case in (76) which is also bad. If she assumes that a fronted NP moves in order to obtain scope as well, (76) can then be accounted for on a par with (78) since an infinitive clause is not a projection in which it can obtain scope. But under such an assumption, she loses her account for why (72) is good as we discussed earlier: the fact the embedded object can 'obtain scope' at the S-initial position of the embedded clause, as shown in (71), should preclude its further fronting to the matrix S-initial position by Economy. In short, Lu’s scope account cannot capture the facts in (71-79) consistently.

The second problem with Lu’s proposal is that it is questionable whether an infinitive clause cannot delimit a scope domain. Look at the following sentences:
(80) a. wo bu quan ta qu.
   I not persuade him go
   'I did not persuade him to go.'

b. wo quan ta bu qu.
   I persuade him not go
   'I persuaded him not to go.'

In (80a) the negation has scope over the entire clause, meaning 'It is not true that I did any persuasion.' In contrast, the negation in (80b) only has scope over the embedded clause, meaning that 'I persuaded him and the persuasion is that he should NOT go'. The interpretation of (80b) indicates that the infinitive clause can be used as a projection to delimit scope.

Under my analysis of NP-shift, the fact that an NP cannot be shifted to the embedded clause in a pivot construction has to do with the structural configuration of the latter. Adapting Cheng (cf. 1989:29), I assume that the infinitival at least in Chinese lacks AgrP and the construction in question is as shown below. As in Cheng (1989:29), the verb *bi 'force'* and the proposition it selects jointly select the NP *Lisi*. Later, the verb *bi* further moves up to the higher (empty) verb position (cf. Larson 1988).

---

19Hamida Demirdache (p.c.) informs me that Portuguese has infinitives with agreement (cf. Raposo 1987).
The proposed structure in (81) amounts to the claim that the whole sentence is monoclausal.

Evidence for this claim comes from the following facts:

(82) **Aspect construal:** The aspect marker attached to the lower verb is construed with the matrix verb (cf. Li 1990).

a. \( \text{wo bi-gu} \text{o John du zheben shu.} \)
   I force-aspect John read this book
   'I have forced John to read this book'

b. \( \text{wo bi John du-gu} \text{o zheben shu.} \)
   I force John read-aspect this book
   'I have forced John to read this book'

(83) **VP conjunction and the identical aspect constraint:** Not only two lower VPs can be conjoined, they must also have the same aspect marker.

a. \( \text{wo bi ta kan-gu} \text{o shu, xie-gu} \text{o zi.} \)
   I force him read-aspect books write-aspect words
   'I have forced him to read books and to write characters.'

b. *\( \text{wo bi ta kan-gu} \text{o shu, xie-le zi.} \)
   I force him read-aspect books write-aspect words

---

20I thank Rose-Marie Dechaine for discussing this part with me.
(84) **Anaphor binding:** The anaphor in the embedded object position can be bound by the matrix subject.

a. 
?wo₁ bi Mary xihuan wozijíᵰ.
I force Mary like myself
Lit.: 'I force Mary to like myself.'

b. 
*wo₁ renwei [Mary xihuan wozijíᵰ]
I think Mary like myself
Lit.: 'I think that Mary likes myself.'

(85) **Negative polarity:** The embedded object can be modified by 'any' if the matrix verb is negated.

a. 
wo méi bi ta du renhe shu,
I not force him read any books
'I did not force him to read any books.'

b. 
*Ibu zhidao [ta du-guo renhe shu].
I not know he read-asp any books
'I did not know that he had read any books.'

To return to our discussion of the contrast between (78) and (79), lack of AgrP in the infinitival entails lack of the embedded landing site for the shifted NP. This accounts for the ungrammaticality of (78), and the grammaticality of (79). Specifically, only the "matrix" clause has [Spec AgrOP] which under my analysis accommodates the shifted object.²¹

How is the fronting case of (76) to be captured in my account? I have shown that a fronted NP either raises to [Spec, AgrOP] as in A-movement or is further CP adjoined as in A'-movement. Since there is no AgrOP and CP in the embedded clause in the pivot construction,

---
²¹A question arises as to how the "upper" object Lisi in (79) gets Case. Hamida Demirdache (p.c.) suggests that it may get the inherent Case. Alternatively, one may posit three Agr projections as in the dative verb constructions. Another interesting point regarding the "upper" object and "lower" object in the pivot construction is that they are complementary in terms of undergoing syntactic processes. For instance, the "upper" object can only be passivized, but not fronted, shifted, relativized or pseudoclefed. In contrast, the "lower" object cannot be passivized, but can participate in all the other processes. The passive facts also obtain in English in the 'persuade-type' constructions.
embedded topicalization, along with embedded shift, is prohibited for lack of an embedded landing site.

While the proposed analysis has quite a few advantages, there remains at least one issue open to further research. In my analysis, even though Chinese has no overt agreement (cf. Chomsky 1993), overt raising for the subject in Chinese is obligatory, whether it is to [Spec AspP] or further to [Spec AgrSP]. There is a parallel between overt NP raising and pro identification. 'Pro-drop' has been found in languages which either have rich morphology like Italian or have no morphology such as Chinese (Huang 1984, Speas 1994). Overt raising is proposed for languages with rich morphology (Pollock 1989, Chomsky 1992). However, as discussed here, it is also found available in languages with no morphology at all as in Chinese. Now the question is why pro-drop and overt raising involve the two extreme cases of morphology.

One speculation for the obligatory raising of subject in Chinese is that since subject in Chinese is definite, it has to get out of the VP domain at S-structure (cf. Diesing (1992). Since Chinese has no morphology, the subject does not have to land in [Spec AgrSP] at S-structure, though it has to at LF ultimately. It is therefore free to raise half way to the Spec of AspP or MP as in the SVO or OSV word orders.

3.4. Summary

In this chapter, I have presented and analysed the 'object shift' phenomenon in Chinese. It is similar to fronting in that a definite or generic NP is literally 'dislocated'; but it differs from the latter in that the object NP lands in a position which follows the subject. Based on three diagnostic tests such as 'No reconstruction' and 'Locality Restriction', I conclude that the shifted
object NP lands in an A-position, just like the short-distance shift found in Hindi or Japanese. As for the exact landing site of the shifted NP, I follow the fully articulated clausal structure proposed in Ch.2, and propose the following analysis: both the subject NP and the object NP overtly raise to [Spec AgrSP] and [Spec AgrOP] respectively.
Chapter 4 WH-Object NP Shift and DOU Licensing

In Ch.3, I show that a definite object NP can be shifted to a position after the subject. In this chapter, I will investigate cases where a wh-object is shifted to a position after the subject, but before the adverb *dou*, and the interpretation resulting from the wh-object shift. In section 4.1, I provide the data and a descriptive generalization. In section 4.2, I undertake a detailed analysis of this syntactic process, based on the tree-splitting model advanced in Diesing (1992). Finally in section 4.3, I extend the analysis proposed for wh-object shift to a broader range of data in Chinese, followed by a summary in section 4.4.

4.1. Introduction

In a sentence containing a wh-phrase and the adverb *dou* 'all’, the wh-phrase has an interrogative reading when it is to the right of the adverb. However, when it is to the left of *dou*, it obtains a universal reading. Here are some basic facts:

**Wh-phrase as the direct object:**

A. **Without *dou***:

(1) ta chi-guo shenme?  
he eat-asp what?  
'What has he eaten?'

B. **In interaction with *dou***:

(2) Wh-phrase to the right of *dou*:

John *dou* chi-guo shenme?  
John all eat-asp what  
'What has John eaten?' (interrogative/exhaustive list reading)
In (1) and (2), the wh-phrase has the interpretation of a question word. For (2), the speaker implies that he wants as an answer a complete list of things which 'John' has eaten. If the hearer replies with an incomplete list of things, he then fails to answer this question. Hence, the expected answer for (2) is 'John has eaten apples, oranges and bananas' or 'John has only eaten apples.' (cf. Kuno 1973 calls this kind of reading in Japanese "exhaustive list reading").

(3) Wh-phrase to the left of dou:

\[
\begin{align*}
ta &\enspace shenme,\enspace dou\enspace chi-guo\enspace t\dot{\iota}. \\
he &\enspace what\enspace all\enspace eat-asp.
\end{align*}
\]

'He has eaten everything.' (universal reading)

NOT: 'What has he eaten?'

Here, the wh-object is between the subject and the verb, like the object NP shift discussed in Ch.3. For some speakers, the wh-object can also be fronted S-initially:

(4) \?

\[
\begin{align*}
Shenme,\enspace ta\enspace dou\enspace chi-guo\enspace t\dot{\iota}. \\
what\enspace he\enspace all\enspace eat-asp
\end{align*}
\]

'He has eaten everything.'

Notice that (4) is not as good as (3). Both S. Lu (1981) and Liu et al (1983) only give data like (3) where the wh-phrase is immediately adjacent to dou.

Dou, like other adverbs, cannot occur postverbally as is shown in examples (5-6):

(5) *ta chi dou shenme?

\[
\begin{align*}
he\enspace eat\enspace all\enspace what
\end{align*}
\]

'What does he eat?'

(6) *Ta chi shenme dou.

\[
\begin{align*}
he\enspace eat\enspace what\enspace all.
\end{align*}
\]

'He eats everything'
The data in (5-6) show that *dou* cannot occur immediately after the verb, nor sentence-finally.

**Wh-phrase as the indirect object:**

A. Without *dou*:

(7)  
\[
\begin{align*}
\text{ta gei-le shei } & \text{ F} \\
\text{he give-asp who } & \text{ F} \\
\text{'Who did he give an F?'}
\end{align*}
\]

B. In interaction with *dou*:

(8) Wh-phrase to the right of *dou*:

\[
\begin{align*}
\text{ta dou gei-le shei } & \text{ F} \\
\text{he all give-asp who } & \text{ F} \\
\text{'To whom did he give an F?' (exhaustive list reading)}
\end{align*}
\]

(9) Wh-phrase to the left of *dou*:

\[
\begin{align*}
\text{ta shei, dou gei-le } & \text{ t, F} \\
\text{he who all give-as } & \text{ F} \\
\text{'He gave everybody an F.' (universal reading)}
\end{align*}
\]

Notice again that, like the direct object, the indirect wh-object in (9) is located in a position after the subject. Furthermore, it can also be sentence-initial:

(10) \[
\begin{align*}
\text{?nage xuesheng, ta dou gei-le } & \text{ t, F} \\
\text{which students he all give-as } & \text{ F} \\
\text{'He gave every student an F.'}
\end{align*}
\]

**Wh-phrase as the subject:**

A. Without *dou*:

(11)  
\[
\begin{align*}
\text{shei qu-guo?} \\
\text{who go-as} \\
\text{'Who has been there?'}
\end{align*}
\]
B. **In interaction with** *dou*:

(12) **Wh-phrase to the right of** *dou*:

```plaintext
dou you shei qu-guo? all exist who go-asp 'Who has been there?' (exhaustive list reading)
```

Notice that when the subject NP in Chinese is indefinite, it is preceded by *you 'exist'* as in (12).

(13) **Wh-phrase to the left of** *dou*:

```plaintext
shei dou qu-guo. who all go-asp 'Everybody has been there.' (universal reading)
```

Generally speaking, the wh-phrase and *dou* should be within the same clause in order for the former to obtain a list or universal reading. Otherwise, neither reading will obtain:

A. **No list reading:**

(14) ni (*dou) renwei [, ta mai-le shenme ]? you all think he buy-asp what 'What (*list) do you think he has bought?'

In the above example, although *shenme* occurs to the right of *dou*, it is impossible for *shenme* to obtain the list reading. The reason is that these two elements are in different clauses. Lack of the universal reading in the following example follows for the same reason.

---

1Mike Rochemont (p.c.) points out that *dou* used in collocation with *lian 'even'* can be related to an NP located in a preceding clause:

(i) [ lian zhepian wenzhang gaidong-le najige zi ], [ ta dou jide 1 ].

   even this article change-asp which words he even remember

   'He even remembers which words are changed in this article.' (S. Lu 1981:326)

He also suggests that such a usage of *dou* should be considered as having the universal quantification force as well.
B. No universal reading:

(15)  a. *shei renwei [ ta dou hui lai ].
    who think he all will come.
    'Everybody thinks he will come.'

b. ?*nage xuesheng, wo renwei [ ta dou gei-le ti F ].
    which student I think he all give-asp F
    'I think he gave every student an F.'

In (15b), even though the wh-phrase is the object of the embedded clause containing *dou, it is
fronted to the S-initial position of the matrix clause at S-structure. As it is separated from *dou
which remains in the embedded clause, it fails to obtain the universal reading. What is
interesting about this example is that it shows that the locality constraint between *dou and a wh-
phrase cannot be satisfied by a trace left by the moved wh-NP.

What emerges from the data above is the following descriptive generalization
(preliminary):

A wh-phrase must be to the **right** of a clausemate *dou for the interrogative and list
reading; it must be to the **left** of the adverb for the universal reading;

This generalization is stated in linear terms. However, the contrastive judgement in the
two pairs of sentences in (16) below indicates that translating the generalization into
*configurational* terms is not only possible, but also preferable. In examples (16a-a’), neither wh-
object gets the exhaustive list reading even though it is to the **right** of the adverb. In (16a), the
adverb *dou is embedded in the relative clause in subject position. It is not only in a different
clause from the matrix object, but also fails to *c-command* the latter. The judgement for this
sentence is that it is entirely gibberish. This judgement contrasts with that for (16a’) where *dou
*c-command* obtains, but not the clause-mate requirement.
(16)  a.  **[ni dou renshi de nage ren] aishang-le shei?
you all know DE that person love-asp who
'*Who (list) did the person that you know fall in love with?

a'.  *ni dou renwei [ta aishang-le shei ]?
you all think he love-asp who
'*Who (list) do you think that he fell in love with?'

For the universal reading, *c-command* is also required apart from the locality constraint. In (16b), the wh-object and *dou* are in different clauses; moreover, the wh-phrase does not *c-command* the adverb, and the sentence is entirely ungrammatical. This judgement contrasts with that for (16b') where the fronted wh-object *c-commands* the adverb which is embedded in the subordinate clause.

he buy-asp what this news I all know
Intended: 'I know the news that he bought everything.'

b'.  *nage xueshengi wo renwei [ ta dou gei-le t F ].
which student I think he all give-asp F
'I think he gave every student an F.'

Given the judgement contrast in the two pairs of sentences in (16), I propose that the linear descriptive generalization should be reformulated in configurational terms as below:

A wh-phrase must be *c-commanded* by a clausemate *dou* at S-structure for the interrogative and exhaustive list reading. For the universal reading, a wh-phrase must *c-command* *dou* in the same clause at S-structure.2

The central issue I address in this chapter is the following: what role does the syntactic representation play in the derivation of the semantic representation of wh-NPs? Specifically, for

---

2Given the data so far, the wh-phrase must *c-command* *dou* at S-structure for the universal reading. In section 4.3, I will present and discuss some exceptional cases where *c-command* apparently does not obtain.
the interrogative sentences and quantificational sentences, what is the relation between their S-structure representation and their LF representation? I assume with Cheng (1993) that wh-phrases in Chinese are indefinites. But I further assume as in Diesing (1992) that indefinites can be either specific or non-specific. If they are specific, they are then presuppositional (to be defined in section 4.2.2.) and, following Diesing, must escape from the VP domain at S-structure. By this syntactic movement, they form a restrictive clause defining the range of the quantifier *dou*. This explains how a wh-NP to the left of the adverb obtains the universal reading, a reading which is presuppositional in nature. Wh-phrases can also be non-specific or non-presuppositional. In this case, they remain within the VP domain at S-structure, obtaining the interrogative reading as a result of existential closure and binding by a [+wh] trigger. In addition, I apply some diagnostic tests to the syntactic process of wh-object shift resulting in the universal reading. I argue that (a) the wh-object shift exhibits A-movement properties, as in the non-wh-object NP shift discussed in Ch. 3; and (b) its landing site is also [Spec AgrOP]. At the end of this chapter, I investigate the interaction of a wh-phrase and *dou* in other structural configurations.

4.2. Analysis of the Wh-object

Before presenting my analysis for the Chinese data, I will first review Diesing’s (1992) model, which I adopt below.³

4.2.1. Diesing’s Mapping Hypothesis (1992)

Within the GB-framework, the LF level is the intermediary between the syntax and the

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³I thank Hamida Demirdache and Henry Davis for the general line of research for this chapter.
logical representation. It is from this abstract level of syntactic representation that logical representations are derived. Diesing proposes that VP and the area above VP (at the IP level) are distinct domains for different kinds of quantification. Adopting a two-subject model of phrase structures ([Spec IP] and [Spec VP]) (see Kuroda 1988, Koopman and Sportiche 1991 among others), she proposes that the two subject positions are distinguished in mapping from the S-structure to LF representations. Her tree-splitting model is given in (17). Adopting terms from Heim's (1982), she calls the area above VP the 'restrictive clause' and the area below VP the 'nuclear scope':

\[
\begin{align*}
\text{IP} & \quad \text{Above VP} \\
\text{Spec} & \quad \text{"Restrictive clause"} \\
\text{I'} & \\
\text{I} & \quad \text{Below VP} \\
\text{VP} & \quad \text{"Nuclear scope"} \\
\text{Spec} & \\
\text{V'} & \\
\text{V} & \quad \text{NP}
\end{align*}
\]

Diesing's Mapping Hypothesis is as follows:

- Presuppositional NPs, including specific indefinites, form restrictive clause structures (cf. Berman's 1991 Presupposition Accommodation) and therefore must undergo Quantifier Raising;

- Non-presuppositional phrases remain in the nuclear scope and are bound by existential closure, licensing an existential reading.

For instance, the sentence "Every llama ate a banana" has the following Logical Form:

\[
(18) \begin{align*}
\text{Every} & \quad [x \text{ is llama}] \\
\uparrow & \\
\text{quantifier} & \quad \text{restrictive clause} & \quad \text{nuclear scope}
\end{align*}
\]
In this example, the quantificational NP 'every llama' is presuppositional: it presupposes a set of llamas over which the Quantifier 'every' ranges. In Diesing's tree-splitting model in (17), this NP gets mapped from [Spec VP] into [Spec IP] to form the restrictive clause, specifying the set of things the quantifier 'every' quantifies over. On the other hand, 'a banana' is a non-specific indefinite: it remains within VP (the domain of Nuclear Scope), and receives the existential reading via existential closure by a default E operator introduced at the VP level. Notice that the quantifier itself constitutes the third part of the logical representation, in addition to the restrictive clause and nuclear scope. Specifically, Diesing proposes that in the presence of QR, there must be a means of excluding the actual quantifier from both the restrictive clause and the nuclear scope. Following Heim's term (1982:133), she assumes a rule "Quantifier Construal" which adjoins every quantifier to IP, leading to a tripartite tree. Below is the LF representation of example (18) using Diesing's model:

(19)

\[
\begin{array}{c}
\text{IP} \\
\text{every} \\
\text{QC} \\
\text{QR}
\end{array}
\]

\[
\begin{array}{c}
\text{IP} \\
\text{VP} \\
\text{VP'}
\end{array}
\]

\[
\begin{array}{c}
\text{ate} \\
\text{a banana}
\end{array}
\]

In English both QR and QC occur at LF. As a parametric variation, QR can also occur at S-structure. In German, for instance, whether an indefinite NP receives a presuppositional or a non-presuppositional reading can be 'read' off its S-structure position. The following examples are from Diesing (1992:78):
She assumes that when the subject appears to the right of the particle 'indeed', it is in [Spec VP]; and when it appears to the left of the particle it is in [Spec IP]. Thus the particles are used to diagnose the position of the subject. Specifically, she proposes (1992:78) that varying the position of the subject in this way produces an alternation in the reading of the subject NP zwei Cellisten 'two cellists'. In (20a), the subject NP is analyzed as in [Spec VP], and the cardinal reading is most salient. The sentence asserts the existence of two cellists who have taken rooms in the hotel. This existential or cardinal reading follows from her tree-splitting algorithm which maps the subject occupying the [Spec VP] position into the nuclear scope of the logical representation. In (20b), however, the subject NP is in [Spec IP], and the presuppositional reading becomes available. In this case, the two cellists are two of some larger set of cellists. The indefinite subject in [Spec IP] is mapped into a restrictive clause by tree splitting. This restrictive clause represents the existential presupposition of the subject NP, leading to the interpretative contrast between (20a) and (20b). As will be shown in the next section, the presuppositionality of indefinites in Chinese is positionally marked at S-structure, as in German.

4.2.2. The S-structure Positions of the Wh-object and its Interpretations

Before I propose my analysis, I will briefly review Cheng’s (1993) analysis of wh-phrases and dou since, to my knowledge, it represents the latest analysis within the GB paradigm (see also Huang 1982, Lee 1986). Cheng (1993:26) proposes that the universal reading of a wh-
phrase obtains if the adverb m-commands the wh-phrase. This is how she accounts for the following sentence:

(21) ta shenme, dou chi-guo ti.
    he what all eat-asp
    'He has eaten everything.'

One problem with this m-command account is that in the following wh-in-situ cases which are absent from her database,

(22) ta dou chi-guo shenme?
    he all eat-asp what
    'What has he eaten?' (interrogative and list)

dou m-commands the wh-object; yet it does not trigger the universal quantifier reading in the latter. To put it differently, if dou-m-command is the real requirement, there is then no motivation for the wh-object in (22) to be shifted as in (21) to obtain the universal reading. Given this objection, I seek an alternative account for the Chinese data.

Following Cheng (1991, 1992, 1993), I assume that a wh-phrase in Chinese is indefinite: it can have an interrogative, universal or indefinite reading depending on the environment (cf.

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4Data of this kind are also provided in the traditional studies of Chinese grammar, e.g. S. Lu (1981:153) and Liu et al (1983:137).

5Another potential problem with Cheng’s m-command account is that a wh-object can precede the subject as in (i):

(i) ?shenme ta dou chi.
    what he all eat
    'He eats everything.'

If m-command refers to the first maximal projection (cf. Chomsky 1986), clearly dou does not m-command the fronted wh-object and the universal reading should not obtain, contrary to fact. But as Leslie Saxon (p.c.) points out, if m-command is understood in terms of the entire category rather than just the lower segment, this criticism does not go through. It is not clear which notion of m-command Cheng adopts (1993:8).
Heim on indefinites 1982:127). In contrast to Cheng, I further assume that an indefinite NP in Chinese is either quantificational (i.e. presuppositional), or non-quantificational (i.e. non-presuppositional), depending on its S-structure positions. Note that my use of the term 'presuppositional' is syntactically defined and is thus more restricted than its common usage. It is commonly assumed that wh-phrases as question words are also presuppositional. For instance, a non-D-linked wh-phrase 'what' or 'who' carries a presupposition associated with the whole sentence, whereas a D-linked wh-phrase like 'which' carries a presupposition associated with a common noun. In this dissertation, NPs associated with the particular notion of presupposition are operationally defined as those which cannot occur in the existential you context in Chinese, such as the underlined NPs in (23a-b). If an NP can occur after you, it is then not associated with such an 'existential presupposition' as in (23c-d):

(23)  a. *you meige ren dou zai kanshu.  
exist every person all presently study.  
'Everybody is studying.'

b. *you shei/nage xuesheng DOU lai-guo.  
exist who which student all come-asp  
'Everyone/every student has come.'

c. you ren zai qiao men.  
exist person presently knock door  
'Somebody is knocking on the door.'

d. (you) shei/nage xuesheng lai-guo?  
exist who/which student come-asp  
'Who/which student has come?'

As will be discussed below, such existential presuppositions induced by quantified NPs must be incorporated into a restrictive clause, i.e. above VP (cf. Diesing 1992:62).

In addition to these assumptions about Chinese wh-phrases and presupposition, I further assume that the adverb of quantification dou is adjoined to the bar-level of any of the functional
projections above VP (see section 4.2.3.2.1. for evidence and discussion). For ease of presentation, I focus on wh-objects in this section. The data are repeated below:

(24) a. ta dou chi-guo shenme? (interrogative and exhaustive list reading)
    he all eat-asp what
    'What has he eaten?’

   b. ta shenme dou chi-guo t. (universal reading)
    he what all eat-asp
    'He has eaten everything.’

Adopting Diesing’s framework, I propose that the different interpretations of the wh-phrase result from its different S-structure positions. In (24a), the wh-object shenme remains within VP at S-structure. It receives the default existential reading via existential closure. Furthermore, it obtains the interrogative reading because it is bound by default by the covert [+wh] morpheme in COMP (cf. Cheng 1991).\(^6\) Crucially, the wh-object does not provide the restriction for the adverb of quantification dou because of its S-structure position (i.e. to the right of the adverb). Notice that there is a correlation between the interrogative reading and its S-structure position. As suggested by Partee (1991) and Diesing (1992), VP is the focus domain. As the wh-phrase in (24a) remains within the VP domain at S-structure, it automatically gets the focus reading that is typical of interrogative wh-phrases.

\(^6\)Note that the post-verbal wh-object is interrogative because it follows from the tree-splitting hypothesis (which gives it an existential interpretation), and from the existence of a (covert) Q-operator (which makes it an interrogative). However, in an appropriate ‘affective’ context (Neg. etc.), the wh-phrase becomes ambiguous. Look the following sentence (Li 1992, James Huang p.c.):

(i) ta mei chi shenme?
    he not eat what
    a. What did he not eat? (interrogative existential)
    b. He did not eat anything? (non-interrogative existential under negation)

The conclusion is that binding by the covert Q-operator is by default, and that the presence of an affective context will induce the existential but non-interrogative reading.
There is an added fact in example (24a): the wh-phrase also has the 'exhaustive list' reading. To my knowledge, there is no discussion on this topic in the GB literature on Chinese syntax. Its presence is clearly related to the presence of *dou*. I propose that this exhaustive list reading is derived from the fact that the wh-phrase is within the scope of *dou* at S-structure. A parallel can be drawn between this list reading under the scope of *dou* and the licensing of polarity items under the scope of negators.\(^7\) In Chinese, the use of negative polarity items like *renhe* 'any' is licensed by a c-commanding negator as is shown in the following group of sentences:

\[(26)\]

\[\begin{align*}
\text{a. } & \text{ wo mei kanjian renhe ren.} \\
& \text{I not meet any people} \\
& \text{ 'I haven't met anybody.'}
\end{align*}\]

\[\begin{align*}
\text{b. } & \text{ *wo kanjian renhe ren.} \\
& \text{I meet any people} \\
& \text{ '*I have met anybody.'}
\end{align*}\]

\(^7\)Here it is important to differentiate the polarity reading of English 'any' and its free choice reading. The latter reading obtains in the presence of a modal (including an invisible modality operator as proposed in Cheng 1991:134).

Henry Davis and Leslie Saxon (p.c.) inform me that in English it is acceptable to say 'Who all did you see?' with the wh-phrase having an exhaustive list reading.
In short, just as the use of 'any' is licensed by a c-commanding negator at S-structure, the exhaustive list reading of a wh-object should be attributed to the c-commanding trigger dou at S-structure as well.\(^8\)

Let us look at example (24) repeated as (27) below:

\[(27)\quad \text{ta shenme, dou chi-guo ti.} \quad \text{(universal reading)} \]

\[
\begin{align*}
\text{he what all eat-asp} \\
'\text{He has eaten everything.'}
\end{align*}
\]

Here, the indefinite wh-object provides the set over which the quantifier dou quantifies over. To serve as the range of a quantifier, it has to be outside the domain of VP at S-structure to form the restrictive clause. Being outside the VP domain triggers the indefinite wh-phrase for the presuppositional reading. At LF, dou further moves out to become the leftmost immediate constituent of S by the rule 'Quantifier Construal' (cf. Heim 1982). Since I am using CP, I

\(^8\)James Huang (p.c.) suggests an alternative analysis for the postverbal wh-phrases in the context of dou. For example, in a sentence like (i),

\[
\begin{align*}
\text{(i) John} & \text{ dou mai-le shenme?} \\
\text{John all buy-asp what} \\
'\text{What (interrogative and exhaustive list) has John bought?'}
\end{align*}
\]

dou quantifies over several events, i.e. the event of 'buying' is dissolved into several distinct buying events, and the speaker wants to find out what John has bought during each distinct event of buying. The advantage of this alternative analysis is that it successfully maintains the uniform leftward quantification of dou. Yet it remains to be determined how to represent quantification over these 'subevents' syntactically, and how to explain sentences like the following which does not contain an action verb:

\[
\begin{align*}
\text{(ii) ni jia-li dou} & \text{ you shenme ren?} \quad \text{(Liu et al 1983:137)} \\
\text{your family all has what people} \\
'\text{Who are the members of your family?'}
\end{align*}
\]
assume that the *dou* is adjoined to CP.

(28) (Irrelevant details about the structures are ignored here.)

a. S-structure for (27)  
b. LF representation of (27):

```
  CP                       CP
  / \
  IP                 / \
  / \                 / \  
  NP  ...         dou  IP
  he   /   ...     / \   
  shenme /         he / ...
  V'   /   
  / \   
  V  t_i /   
  eat
  VP
  / \   
  V  t_i   
  eat
```

(28a) is the S-structure representation for (27): the wh-object moves outside the VP domain and it forms a restrictive clause for the quantifier *dou*. At LF as is shown in (28b), *dou* further adjoins to CP for Quantifier Construal. Notice that the contrast between (23) and (27) resembles the German examples in (20) in that it is the S-structure position of the indefinite NP (with respect to *dou* in Chinese) that determines whether it is interpreted as quantificational or non-quantificational. Also notice that as in English, the quantifier undergoes 'Quantifier Construal'.

However there is a morphological difference between English and Chinese. In the English sentence 'Everyone has come', the subject NP consists of both the quantifier 'every' and its range 'one': the whole NP 'everyone' first undergoes QR as a whole at LF; then the quantifier is separated from its range and undergoes Quantifier Construal. In Chinese, the quantifier *dou* and its range *shenme* are separated morphologically to begin with. The indefinite NP denoting
the range is shifted (QRs) on its own at S-structure and lands to the left of *dou* so as to escape from the Nuclear Scope and form the restrictive clause of the quantifier.

Note that the tree-splitting model only gives the wh-phrase to the left of *dou* the 'presuppositional' or 'quantificational' interpretation (as opposed to the 'existential' or 'cardinal' reading), but does not make it non-interrogative or universal. In other words, why does a shifted D-linked wh-object such as the one in (29) lose its interrogative reading even though its D-linking carries with it a presuppositional reading (James Huang p.c.)?

(29)  
\[ ta \ naben \ shu \ *dou \ kan-guo. \]
\[ he \ which \ book \ all \ read-asp \]
\[ 'He has read every book.' \]
\[ NOT: 'Which books has he all read?' \]

Note in Chinese, a wh-phrase with the interrogative reading cannot be shifted or fronted (cf. Lasnik and Stowell 1991).

(30)  
\[ *ta \ naben \ shu \ kan-guo? \]
\[ he \ which \ book \ read-asp \]
\[ 'Which book has he read?' \]

In the literature (see Heim 1987, Diesing 1992 among others), the term 'presuppositional or quantificational reading' has been used to refer to either the non-interrogative universal reading ('everything') or the interrogative universal reading ('which X all'). In this thesis, I adopt a syntactically defined notion of presuppositional reading as discussed above, i.e. it refers to the non-interrogative universal reading. Such a restrictive use of the term is consistent with what the data in (29-30) reveal. Specifically, since the interrogative reading for the shifted D-linked wh-object is independently ruled out by the syntactic position it occupies as shown in (30), what we get for the shifted wh-phrase in the context of *dou* in (29) is, by default, the non-interrogative
universal reading. What emerges from this empirical fact is that in the presence of *dou*, the distinction between the D-linked wh-phrase ('which X') and non-D-linked wh-phrase ('what') is lost: if they are (descriptively) to the right of the adverb, they maintain their interrogative reading with an added exhaustive list reading; if, however, they are shifted to its left, they lose their interrogative reading (independently) and obtain the presuppositional, and more specifically, universal reading by c-commanding the adverb.

To summarize our analysis, if the wh-phrase remains downstairs at S-structure (i.e. within VP), it receives the non-presuppositional reading of interrogatives. If, however, the wh-phrase moves upstairs at S-structure, i.e. if it is above the VP domain, it defines the range of *dou*, triggering the presuppositional reading. This analysis is consistent with Huang’s Isomorphic Principle (1982) in the sense that S-structure configuration determines LF interpretation in Chinese. In Section 4.3, I will show that the proposed analysis is applicable to more complicated cases as well.

4.2.3. The Landing Site of the Shifted Wh-object

It is proposed above that the presuppositional wh-object moves outside the VP domain. The next legitimate question is what is the nature of this movement and what is its landing site. In this section, I first review Cheng's analysis for the position of the wh-object. Then I argue that the wh-object shifting is an A-movement and that it is moved to [Spec AgrOP] position on a par with non-wh-object shift discussed in Ch.3.
4.2.3.1. Review of Cheng (1991):

Cheng (1993:6, 29) observes that the wh-object is "preposed", but she does not specify where it lands. In her earlier dissertation (1991), Cheng is more explicit about the position, but she does not assume a movement analysis. She gives the following example:

(31) Qiaofeng [shenme, [pro, dou chi pro1]]

Qiaofeng what all eat

'Qiaofeng eats everything.'

In (31), Cheng (1991:166, 167) proposes that for an object to be modified by dou, it has to be in the topic position, and if 'what' is a topic, then 'Qiaofeng' has to be a topic as well. Specifically, 'Qiaofeng' is in the position for aboutness topics, which she later explains as "topics without a gap" (1993:5). Structurally, she assumes that 'Qiaofeng' is adjoined to CP, co-indexed with pro1 in [Spec IP], and that 'what' is base-generated in [Spec CP], co-indexed with pro1 in the canonical object position.

This analysis is questionable for the following reasons. First, Cheng does not justify why the wh-object has to be in [Spec CP]. If nothing prevents it from being moved into the spec of one of the functional projections, then there is no motivation for the subject 'Qiaofeng' to be base-generated adjoined to CP. Second, Cheng posits two pros in both subject and object positions in (31). What this entails is that the two lexical NPs are base-generated S-initially and are not related to the subject and object positions by movement. This predicts that there should be no subjacency effect if these two empty categories are embedded in an island. However, this prediction is not fulfilled. For example, in (32), the empty categories are in the sentential complement of the object NP and the sentence is ungrammatical:
The ungrammaticality (due to the subjacency effect) of this sentence indicates that the postulation of pro is untenable, and that the S-initial NPs and the empty categories in both the subject and the object positions are related by movement, as indicated by the island effect.9

Third, it is not clear how pros are identified in her account. There is a problem if she assumes Huang's (1989) generalized control theory. The subject pro does not have a control domain in the sense of Huang (1989), and therefore should not be controlled. But the fact is that the pro subject, if present, obligatorily refers to, or is "controlled" by, 'Qiaofeng', and the sentence unambiguously means 'Qiaofeng is the person who eats everything', not 'As for Qiaofeng, somebody else eats everything'. Incidentally, this may be a general problem for the generalized control theory in accounting for left dislocation in Chinese.

In short, given these objections, I reject the non-movement hypothesis of Cheng (1991). Instead, I argue for a movement analysis and discuss its syntactic properties in the next section.

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9One may argue that (32) is ruled out independently since dou and the wh-phrase are in separate clauses. Recall that example (15a) repeated as (i) below is ruled out precisely because of the violation of the locality constraint:

(i) *shei renwei [ ta dou hui lai ].
   who think he all will come.
   'Everybody thinks he will come.'

However, (32) is worse than (i). I propose that the deterioration in (32) is caused by the subjacency violation in addition to the locality constraint illustrated in (i).

Also notice that (32) is worse than ordinary subjacency violations presumably because the paths are crossed between NP₁ and the gap coindexed with it on one hand, and NP₂ and its co-indexed gap on the other.
4.2.3.2. Wh-NP Shift as A-movement and its Landing Site

In this section, I will first discuss the position of *dou* with respect to other elements. I will then argue that the movement of the wh-object is an A-movement and that its landing site is [Spec AgrOP].

4.2.3.2.1. The Position of *Dou*

Assuming that a clause is projected as AspP instead of IP and that adverbs are licensed by a head feature, Cheng (1993:14) proposes that *dou* can be adjoined to ASP', ASP as well as V' and V since these elements are extended projections of a verb. In contrast, I propose that the adjunction site of this adverb should be restricted to the bar-level of any of the functional projections. One advantage of such a restriction is that it can be used to demarcate the dividing line between the "restrictive clause" and the "nuclear scope".

[1] Sentential adverbs: I assume that sentential adverbs are adjoined sentence-initially, to a functional projection or to VP, serving to mark the VP boundary (cf. Ch.3). The adjunction site of *dou* can be ascertained by its position with respect to these adverbs. The conclusion is that its distribution is consistent with adjunction to the bar-level of any functional projection.

Set One: *dou* quantifies over a subject: *dou* can follow or precede the sentential adverb, though this results in different scope readings.

(33) a. *tamen zuotian dou shi-guo.*
they yesterday all try-asp
'They all tried yesterday.'
b. ??tamen dou zuotian shi-guo.
    they all yesterday try-asf
    'All of them tried yesterday.'

Supposing that the sentential adverb is adjoined to one of the functional categories in both cases, the fact that dou can follow or precede it is consistent with the proposal that dou is analyzed as adjoined to (the bar-level of) any functional projection.

Set Two: dou quantifies over the shifted non-wh-object: dou must follow the shifted object, which is in [Spec AgrOP] (cf. Ch.3). Further, this shifted object can follow (as in (34a)) or precede (as in (34c)) the sentential adverb.

(34)  a. ta xingkui zhhexie shu, dou kan-guo ti.
    he fortunately these books all read-asf
    'He has fortunately read all these books.'

b. *ta xingkui dou zhhexie shu, kan-guo ti.
    he fortunately all these book read-asf
    'Fortunately, he has read all the books.'

c. ? ta zhhexie shu, dou xingkui kan-guo ti.
    he these book all fortunately read-asf
    'Fortunately he has read all these books.'

d. ta zhhexie shu, xingkui dou kan-guo ti.
    he these books fortunately all read-asf
    'He has fortunately read all these books.'

As a sentential adverb can be adjoined to any of the functional projections, the fact that the shifted object can precede or follow it, but invariably precedes dou is consistent with the proposal that this adverb of quantification should be adjoined to the bar level of any functional projection. If the shifted object is a wh-phrase, the same distributional facts obtain as shown in (34') below:
(34') a.  
\[ \text{ta xingkui} \text{ shenme shu}, \text{ dou kan-guo ti}. \]
he fortunately what books all read-asp 'He has fortunately read every book.'

b.  
\[ *\text{ta xingkui} \text{ dou shenme shu}, \text{ kan-guo ti}. \]
he fortunately all what book read-asp 'Fortunately, he has read every book.'

c.  
\[ ?\text{ta shenme shu,} \text{ dou xingkui kan-guo ti}. \]
he what book all fortunately read-asp 'Fortunately he has read every book.'

d.  
\[ \text{ta shenme shu}, \text{ xingkui} \text{ dou kan-guo ti}. \]
he what books fortunately all read-asp 'He has fortunately read every book.'

[2] Manner adverbs: As discussed in Ch.3, I assume that manner adverbs are adjoined to V or to V' but must occur immediately adjacent to V. This predicts that \textit{dou} can only occur \textit{before} a manner adverb, not \textit{after} it. This prediction is borne out by the following data.

Set One: \textit{dou} quantifies over a subject: \textit{dou} can only precede the manner adverb.

(35)  
a.  
\[ \text{tamen dou manmande gan}. \]
they all slowly do 'They all did it slowly.'

b.  
\[ *\text{tamen manmande dou gan}. \]
they slowly all do 'They all did it slowly.'

Set Two: \textit{dou} quantifies over a shifted non-wh-object: \textit{dou} which follows the shifted object must precede the manner adverb.

(36)  
a.  
\[ \text{ta zhexie shu,} \text{ dou manmande kanwan-le ti}. \]
he these books all slowly read-asp 'He finished reading all these books slowly.'
'dou' must precede the V-adjoined manner adverb as in (36a) and (36b), but follow the shifted object as shown in (36a) and (36d). Its interaction with manner adverbs indicates that its position is consistent with its adjunction to the bar-level of a functional projection. If *dou can be V-adjoined as assumed in Cheng (1993), it should be able to be ordered freely with the V-adjoined manner adverb, contrary to fact:

(37) a. *tamen *manmande *dou *gan.
they slowly all do
'They all did it slowly.'

b. *?ta *zhexie *shu *manmande *dou kanwan-le.
he these book slowly all read-asp
'He finished reading all these books slowly.'

Cheng herself also notes (1993:3) that 'for some unknown reason *dou cannot appear after manner adverbs.' Our assumption that *dou is adjoined to the bar-level of a functional projection while a manner adverb is V'/V-adjoined provides an answer to this mystery.

If the shifted object in (36) is replaced by a wh-phrase, we get the same distributional patterns with respect to *dou:
(38) a. ta shenme shu, dou manmande kanwan-le ti. 
he what books all slowly read-asp
'He finished reading every book slowly.'

b. *ta shenme shu, manmande dou kanwan-le ti. 
he what books slowly all read-asp
'He finished reading all these books slowly.'

c. *ta manmande shenme shu, dou kanwan-le ti. 
he slowly what book all read-asp
'He finished reading every book slowly.'

d. *ta dou shenme shu, manmande kanwan-le ti. 
he all what book slowly read-asp
'He finished reading every book slowly.'

[3] Modal verbs: In Ch. 3, I assume that a modal verb heads MP in Chinese. In the following example, I use the modal verb bixu 'must' for illustration.10

Set One: dou quantifies over a subject: dou can precede or follow the modal verb bixu.

(39) a. tamen dou bixu lai. 
they all must come
'They all must come.'

b. tamen bixu dou lai. 
they must all come
'They all must come.'

Examples (39a-b) are consistent with the proposal that dou is adjoined to the bar level of a

---

10Note that not all the modals behave the same. Take gan 'dare' for instance, dou somehow cannot appear after it, in contrast to (39b) in the text below:

(i) ?tamen gan dou lai. 
they dare all come
'They all dare to come.'

Another modal verb which cannot precede dou is ken 'will/be willing to'. Leslie Saxon (p.c.) suggests that this distributive difference may have to do with the fact that some modals are more verb-like than others. I have nothing interesting to offer on this point.
functional projection.

Set Two: _dou_ quantifies over a shifted wh-object: The shifted NP must precede the modal verb, which, in turn, can precede (see 40c) or follow (see 40a) _dou_.

(40)  

a.  
\[ \text{ta shenme shu}_1 \text{ dou bixu duwan t}_. \]  
he what books all must finish-read  
'He must finish reading every book.'

b.  
\[ *? \text{ta bixu shenme shu}_1 \text{ dou duwan t}_. \]  
he must what books all finish-read

c.  
\[ \text{ta shenme shu} \text{ bixu dou duwan t}_. \]  
he what books must all finish-read

In (40a), the shifted object precedes the modal verb, and the sentence is grammatical (since AgrOP is higher than MP which accommodates the modal). (40b) is bad due to the wrong word order with respect to the modal and the fronted wh-NP. In (40c), the shifted object and _dou_ can be separated because the adverb has the option of adjoining to the bar-level of a functional projection lower than MP.

To conclude, the interaction of _dou_ with adverbs (in particular with manner adverbs) and modals indicate that _dou_ should be adjoined to the bar-level of any functional projection. There is no compelling evidence to show that it can be V-adjoined as claimed in Cheng (1993).

4.2.3.2.2. Wh-object Shifting as an A-movement

As shown in Ch.3, non-wh object shift displays A-movement properties and its landing site is [Spec AgrOP]. In this section, I propose that wh-object shift is also A-movement, based on several diagnostic tests. Furthermore, I will show that it also lands in [Spec AgrOP], as in non-wh object shift.
Test A: No WCO effect: Wh-object shift does not induce WCO effect. Look at the following sentence containing a universal quantifier:

(41)  
\[
\text{ta biaoyang-le suoyoude xuesheng.} \\
\text{he praise-asp all student} \\
\text{'He praised all the students.'}
\]

When we add a preverbal PP containing a pronoun co-indexed with the postverbal universal quantifier, the sentence becomes ungrammatical:

(42)  
\[
*\text{ta xiang tamende, jiazhang biaoyang-guo suoyoude xuesheng.} \\
\text{he to their parents praise-asp all student} \\
\text{'He praised all the students to their parents.'}
\]

The ungrammaticality of (42) is due to its WCO configuration. At LF, the universal quantifier undergoes Quantifier Raising across the co-indexed pronoun, A'-binding both the pronoun and its variable. However, as discussed in Ch.3, when the universal quantifier is shifted at S-structure, the co-indexing becomes acceptable:

(43)  
\[
\text{ta suoyoude xuesheng, dou xiang tamende, jiazhang biaoyang-guo t.} \\
\text{he all students all to their parents praise-asp} \\
\text{'He praised all students to their parents.'} \text{\footnote{Notice that (43) contains the adverb of universal quantification \textit{dou} though it is absent in (42). The difference in grammaticality between these two sentences has nothing to do with its presence or absence. \textit{Dou} is independently required when a universal quantified object is fronted even in sentences without the PP:}}
\]

(i)  
\[
\text{wo (*dou) du-guo suoyoude jufashu.} \\
\text{I all read-asp all books-on-syntax} \\
\text{'I have read all the books on syntax.'}
\]

(ii)  
\[
\text{wo suoyoude jufashu, *(dou) du-guo t.} \\
\text{I all books-on-syntax all read-asp} \\
\text{'I have read all the books on syntax.'}
\]
Consider the cases involving a wh-phrase. There is a contrast in grammaticality between (44a) where the wh-object is in-situ and (44b) where the wh-object is shifted:

(44)  

a. *ni dou xiang tamende, jiazhang biaoyang-guo nage xuesheng,?
you all to their parents praise-asp which student
'Which students have you praised to their parents?'

b. wo nage xuesheng, dou xiang tamende, jiazhang biaoyang-guo t.,
I which student all to their parents praise-asp
'I have praised all the students to their parents.'

In (44a), the postverbal wh-object cannot be co-indexed with the pronominal object of the preverbal proposition due to WCO\textsuperscript{12}. In (44b), the wh-object is shifted leftward obtaining the universal reading. Although it moves across the co-indexed pronoun, it does not induce the WCO effect as in (43). This indicates that the shifting of the wh-object is an A-movement, not an A'-movement.

Test B: No Reconstruction Effect: Look at the following pair of examples first. In (45), the wh-direct object is in situ; in (46) it is shifted and obtains the universal reading:

(45) Wh-in-situ with the interrogative reading:

ni dou gei-le [ta] [ shenme shu ]?
you all give-asp him what book
'What books did you give him?'

(46) Wh-direct object is shifted for the universal reading:

wo [ shenme shu ], dou gei-le [ ta ] t.,
I what book all give-asp him
'I have given him every book.'

\textsuperscript{12}There are two ways to account for the WCO in (44a). One is to assume with Aoun and Li (1993) that wh-phrases do not move at LF. Under this assumption, (44a) is ruled out because a [+Q] morpheme in COMP binds both the wh-phrase and a pronoun co-indexed with the wh-phrase. The other way to rule out (44a) is to adopt LF movement as standardly assumed (Huang 1982). Under this assumption, (44a) is ruled out as the wh-phrase moves to [Spec CP] across a co-indexed pronoun. To be consistent with Diesing's approach, I follow Aoun and Li in assuming that the wh-phrase with the interrogative reading remains in the Nuclear Scope, i.e. VP, at LF.
Suppose that we add to the direct object a possessor co-indexed with the indirect object. When both the direct object and indirect object are in situ, the preceding indirect object pronoun cannot be co-indexed with the possessor NP in direct object position. But when the direct object is shifted, coindexing becomes acceptable.

(47) Canonical word order: no co-indexing

*ni dou gei-le [ta1] [John DE shenme shu ]?
you all give-asp him John DE what book
*"What books by John did you give him?"

(48) Direct object shifted:

?wo [John DE shenme shu] dou yijing gei-le ta1 t1.
I John DE what book all already gave-asp him
'John's every book, I have already given him.'

Notice that (48) is derived by movement from (47); yet (47) is bad while (48) is acceptable. Based on this paradigm, I argue that since reconstruction applies to the site of a variable, and there is no reconstruction effect in (48), t1 in (48) must be an NP trace, not a variable, and the movement is an A movement. Also notice that if there were reconstruction, the wh-phrase would get an interrogative reading. But since the wh-phrase does not have this reading, it further shows that there is no reconstruction, and the movement in question is an A-movement.

Test C: Locality Constraint: As is shown in Ch.3, non-wh object shift is bounded in Chinese. Here, I will show that the shifting of a wh-phrase is also clause-bounded. For instance, while the embedded object can be shifted to a position after the subject of its own clause as in (49), it cannot be shifted to a position after the subject of the matrix clause, as is shown in (50):

(49) wo renwei [ip ta naben shu dou kan-guo t1].
I think he which book all read-asp
'I think that he has read every book.'
If wh-object shift is A'-movement, we should expect that long-distance shifting as in (50) should be grammatical as in other long-distance A'-movement. Compare with the following sentence which is a fronting process across a CP boundary:

(51)  zheben shu, wo renwei [ta yijing kanwan-le t].
  this book  I think  he already finish-read-asp
  'This book, I think he has finished reading [it] already.'

As argued in Ch. 2, long-distance fronting in Chinese is an A'-movement as long-distance scrambling in Hindi. The contrast between (50) and (51) indicates that while fronting can be A'-movement and therefore unbounded, object shift can only be A-movement and is therefore local.13

4.2.3.2.3. [Spec AgrOP]: the Landing Site of the Shifted wh-Object

Based on the results of the diagnostic tests, I conclude that wh-object NP shift in Chinese is A-movement. The next question is what is its landing site? Adopting the Split Infl Hypothesis (cf. Pollock 1989, Mahajan 1990), Chomsky and Lasnik (1991) analyse [Spec AgrOP] as the landing site of 'scrambling' for the SOV word order. In Ch. 3, I also assume a fully articulated clausal structure for Chinese, and propose that [Spec AgrOP] is the landing site for the non-wh-NP shift. Given that wh-NP shift is an A-movement as in non-wh-NP shift, and that [Spec AgrOP] is an A-position, I propose that [Spec AgrOP] is also the landing site of wh-NP shift.

13Alternatively, the clause-boundedness of wh-NP shift can be accounted for by the independent requirement that *dou quantification over a wh-phrase, as in other cases of quantification, is clause-bounded. No matter which account we adopt, the clause-boundedness of wh-NP shift is consistent with its A-movement properties.
Notice that Diesing does not use a fully articulated clausal structure in her work. In her model, the area above VP (i.e. the traditional IP level) is the 'restrictive clause'. To transfer the articulated clause structure to Diesing's tree splitting model, I assume that the 'restrictive clause' is the area above VP, including the lowest functional projection. For instance, the sentence *ta shenme dou chi* 'He eats everything' has the following S-structural representation:

(52) ......
AgrSP
   / \  
  ta_i AgrOP
   / \  
shenme_j MP
   / \  
dou MP
   / \  
t''_i AspP
   / \  
t'_i VP
   / \  
t_i V'
   / \  
V t_j
eat

Here, both the subject NP and the object NP raise overtly to [Spec AgrSP] and [Spec AgrOP] respectively.

The proposal that the wh-object lands in [Spec AgrOP] predicts that it must not only precede the argument PP which is canonically contained within VP, but also precede the modal verb which heads the MP. As is shown below, this prediction is indeed borne out:

(53) a. Ni dou NENG gei ta zuo shenme fan?
you all can for him cook what meal
'What kind of meals can you cook for him?'
b.  wo shenme fan dou NENG gei ta zuo ti.
  I what meal all can for him cook
  'I can cook all kinds of meals for him.'

c.  *I dou NENG shenme fan gei ta zuo ti.
  you all can what meal for him cook
  'I can cook all kinds of meals for him.'

The ungrammaticality of (53c) indicates that a wh-object cannot be shifted only to a position before the VP-internal PP but after the modal verb. It must precede the modal verb as well, and this lends support to our analysis that it must land in [Spec AgrOP].

4.3. More Case studies

In this section, we will extend our analysis for the direct wh-object to examples where the wh-NP occurs in different environments with respect to dou. We first look at cases involving wh-subjects and then go over other sets of data.

4.3.1. Wh-phrase as the subject: The data are repeated below:

A.  Without dou:

(54)  shei qu-guo?
    who go-asp
    'Who has been there?'

B.  In interaction with dou:

(55)  Wh-phrase to the right of dou:

    dou you shei qu-guo?
    all exist who go-asp
    'Who has been there?' (Exhaustive list reading)

Recall that when the subject in Chinese is indefinite, it is preceded by you 'exist' as in (55).
(56) Wh-phrase to the left of dou:

shei dou qu-guo.
who all go-asp
'Everybody has been there.'

As in the case of wh-objects, the explanation for the two readings shown in (55) and (56) follows from Diesing's theory. Adopting the VP-internal subject for Chinese, I propose that the presence of you in (55) is to ensure that the wh-phrase should remain in VP, or specifically in [Spec VP] at S-structure, as it follows you. The word you literally means 'exist', and may be analyzed as the overt 'existential operator'. Given this structural representation, the wh-subject is subject to existential closure and gets the existential reading.\(^{14}\) In example (56), the universal reading for the subject NP is expected since it is outside the VP domain (i.e. to the left of dou which is adjoined to the bar-level of a functional projection). As it is in the domain of the restrictive clause, it defines the range for the quantifier and obtains the presuppositional/universal reading. At LF, dou adjoins to CP by 'Quantifier Construal'. In the next two sections, we will examine different structural configurations where the wh-phrase interacts with the adverb dou for the interrogative or universal reading.

\(^{14}\)Alternatively, we may assume the wh-subject has moved from [Spec VP] to [Spec AgrSP]. You is inserted to induce the existential reading as the marked case. For the sake of consistency with Diesing (1992), however, I prefer the solution proposed in the text, i.e. the wh-subject is in VP.

Lin (1993) proposes that the object expletive ta in examples like (i) functions as an existential element:

(i) wo hen xiang chi ta liangci Beijing kaoya.
I very like eat TA twice Beijing roast-duck
'I would like very much to eat Beijing roast duck twice.'

He further proposes that ta is located in [Spec AgrOP]. Under this proposal, it is not clear how the object NP gets feature checking since this spec position is already plugged up.
4.3.2. The Wh-NP downstairs and its Interrogative/List Reading:

SET A: A wh-phrase contained in a Possessor/Possessed object NP in situ: Like the simple wh-object NP, the possessor/possessed object NP which remains within VP is subject to existential closure, and thus obtains the existential reading.

(57) **Possessor** wh-NP:

   Ni dou jian-guo [\(np\) shei de jiazhang ]?
   you all meet-asp who DE parents
   'Whose parents have you met?'

(58) **Possessed** wh-NP:

   Ni dou du-guo [\(np\) tade shenme wenzhang]?
   you all read-asp his what papers
   'What papers of his have you read?'

As in the case of the simple direct object, the expected answer to the above two examples is that 'I have met John's parents, Mary's parents, etc.' or 'I have read his papers on syntax, on phonology, etc.'

SET B: A wh-phrase contained in a preverbal PP: I assume that PP is canonically V'-adjoined; thus it is within the VP-domain and the prepositional object receives the existential reading:

(59) a. Ni dou [\(pp\) zai nage danwei ] shixi-guo?
   you all at which organization practise-asp
   'At which organizations did you have your practicum?'

   b. Ni dou [\(pp\) zai natian ] shangban?
   you all at which-day go-to-work
   'On which days did you go to work?''
SET C: The violation of locality constraint: Our account not only captures all the grammatical sentences as shown so far, it also successfully excludes the interrogative (and list) reading of a wh-phrase which fail to meet the S-structure requirement. For instance, in the following sentence, *dou* which is in the matrix clause cannot quantify over a wh-phrase embedded in an object complement clause:

\[(60) \quad *ni \; dou \; renwei \; [_\text{sp} \; ta \; chi-guo \; shenme]??
\]
\[
\text{you all think he eat-asp what}
\]
\[
\text{'What do you think he has eaten?’}
\]

The reason for the ungrammaticality in (60) is that the range and the quantifier are in different clauses, thus violating the locality constraint. Another example is that the wh-object NP is in the matrix clause while the adverb is in the adverbial clause:

\[(61) \quad *[[_\text{sp} \; Ni \; dou \; jinlai \; de \; shihou], \; [_\text{sp} \; ta \; zai \; gan \; shenme]]??
\]
\[
\text{you all enter DE time, he currently do what}
\]
\[
\text{'What was he doing when you entered?’}
\]

This example is ruled out for the same reason as (60).

SET D: The wh-phrase in a relative clause: Complication arises in cases involving a relative clause. Look at the following sentence where interaction is possible between the wh-phrase contained in a relative clause in object NP and *dou* in the matrix clause:

\[(62) \quad ni \; dou \; renshi \; [_\text{sp} \; gan \; shenme \; de \; ren]??
\]
\[
\text{you all know do what DE man}
\]
\[
\text{Lit. 'People that do what (llst) do you know?’}
\]

Although the wh-phrase and *dou* are in different clauses, the former can have the interrogative
and list reading. Contrast this case with the NP containing a complement clause. In the following sentence, *dou* is in the matrix clause while the wh-phrase is in the embedded complement clause:

\[(63) \quad *\textit{ni dou xiangxin \{w_x \text{Bill da-guo shei} de zhengci\}?} \]

you all believe Bill hit-asg who DE testimony

Lit. 'You believe the testimony that Bill hit who (list).EntityFramework'?

As expected, the wh-phrase in the complement clause cannot get the list reading since *dou* and the wh-NP are not in the same clause. This contrast between (62) and (63) indicates that the relative clause with a gap is not an island for construal, in contrast to an NP complement clause.

Look at the following English NP: 15

\[(64) \quad \text{the rumour that \{ three men were killed \}} \]

In this example, the NP contains a complement clause and is unambiguous. It means that the rumour is about the fact that there are three men who were killed. The NP 'three men' always has the narrower scope than the head noun 'rumour'. Compare with the following NP which contains a relative clause:

\[(65) \quad \text{the rumour, that three men heard t_i } \]

In (65), the relative clause has a gap, and the head noun is construed as the object of the relative clause. This phrase is ambiguous: it means either that the three men heard the same rumour or that each of the three men heard a different rumour. 16 The scope interactions between the head

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15 I thank Hamida Demirdache for drawing my attention to Haik's work (1984) on this topic.

16 The ambiguity of the example in the text becomes more salient in sentences like the following (Leslie Saxon p.c.):

\[(i) \quad \text{The rumour, that three men heard t_i } \text{ made (each of) them write letters to the editor.} \]
noun 'rumour' and the NP 'three men' support the claim that a relative clause is not an island for construal/quantification. To return to our discussion of (63), the fact that the relative clause is not an island for scope interaction explains why *dou* can quantify over a wh-NP contained in a relative clause, but not in an NP complement clause.\(^{17}\)

To conclude, we have shown that *dou* cannot license a non-clausemate wh-NP for the list/interrogative reading unless the latter is contained in a relative clause.

### 4.3.3. The Wh-NP upstairs and the **Universal** Reading:

In this section, we will investigate cases where the wh-phrase is configurationally higher, but is located in more complicated structural environments.

**SET A**: A wh-phrase contained in a Possessor/Possessed NP, a relative clause and a sentential subject: In the following examples, the containing NP is always to the left of *dou*. This indicates that the wh-phrase contained in it is outside the VP and defines the range for the quantifier.

\(^{17}\)One way to implement the idea that a relative clause is not an island for construal between *dou* and a wh-NP therein contained is to adopt feature percolation as proposed by Nishigauchi (1990). Specifically, we may propose that the dominating NP node acquires a [+indefinite] feature which is percolated from within the relative clause. Nishigauchi does not discuss cases involving sentential complements to NPs.

Let us first examine cases with a possessor/possessed wh-NP contained in an NP:

(66) The containing NP is the subject:

a. The Wh-NP is the possessor of the subject NP:

\[ \text{[nagexuesheng de jiazhang ] dou zhichi zhege jue ding.} \]
\[ \text{which student DE parents all support this decision} \]
\[ \text{'Every student's parents support this decision.'} \]

b. The Wh-NP is the possessed NP:

\[ \text{[tadenapian wenzhang ] dou keyi fabiao.} \]
\[ \text{his which paper all can publish} \]
\[ \text{'Every paper of his can be published.'} \]

(67) The containing NP is a fronted or shifted object:

a. \[ \text{[l_p tade shenme wenzhang ]i wo dou du-guo t_i.} \]
\[ \text{his what papers I all read-asp} \]
\[ \text{'I have read every paper of his.'} \]

b. \[ \text{Wo [l_p shei de jiazhang], dou jian-guo t_i.} \]
\[ \text{I who DE parents all meet-asp} \]
\[ \text{'I have met everyone's parents.'} \]

In (67a-b), the object NP is dislocated to the left of \textit{dou}, thus escaping the VP domain and losing the existential reading as well. The same explanation applies to examples (68) below:

(68) \[ \text{wo [l_p gan shenme] de ren ]i dou renshi t_i.} \]
\[ \text{I do what DE people all know} \]
\[ \text{'I know people who do all kinds of things.'} \]

Example (68) illustrates cases where the shifted object NP contains a relative clause. Here, the entire fronted NP is syntactically moved out of VP, and is thus construed as quantificational or presuppositional. This again shows that relative clause is not an island for construal, presumably via feature percolation. Another possible account for (68) is to follow Fiengo et al (1988:93) in semantically defining the entire NP as quantificational. Semantically, the sentence means 'I know
[ people who repair cars, people who write computer programs and people who wash dishes, etc.]. The shifting of the NP in (68) represents a kind of S-structure QR, just like the simple wh-object shift.

Finally, let us look at a case of sentential subject containing a wh-phrase:

(69)  [np[she mai cai]] dou xing.
      who buy grocery all ok
      'For anyone to buy groceries] is ok.'

Cases like (69) can be accounted for by a proposal made by Cheng and Huang (1994) for Dou-conditionals in Chinese. An example of Dou-conditionals is given in (69'):

(69') (buguan) shei lai, wo dou bu zaihu.
      no matter who come I all not care
      'No matter who comes, I do not care.'

They propose (1994:33) that the antecedent clause which can be headed by buguan is an elliptical phrase containing an embedded question. Given the standard semantics of questions, it is interpreted as having the force of existential quantification. Dou in the following consequent clause triggers universal quantification, and it quantifies over the set of propositions that jointly define the 'truth conditions' of questions. This analysis correctly captures the distributive meaning of this sentence: 'if John or Mary or Bill comes, I don't care.' Cheng and Huang's analysis is readily extendable to the sentential subject cases like (69). Specifically, the sentential subject can be analysed as an embedded question and has the force of existential quantification; dou in the main clause universally quantifies over the set of propositions that jointly define the 'truth conditions' of questions. Again such an analysis is supported by the semantics of the sentence: 'it is ok for John or Mary or Bill to buy groceries'.
One may suspect that *Dou*-conditionals and sentential subject cases like (69), in reality, belong to one syntactic construction. If (69) is analyzed as a *Dou*-conditional, we then have to postulate a covert subject. I leave this issue open.

**SET B. A wh-phrase contained in a preverbal PP:** In the following example, the wh-NP as the object of a preposition has the universal reading:

(70) ta [dui shei] dou hen keqi.
he to who all very polite
"He is polite to everybody."

This is in contrast to example (59) where the PP is to the right of the adverb:

(59) Ni dou [pp zai nage danwei ] shixi-guo?
you all at which organization practise-asp
"At which organizations did you have your practicum?"

Example (70) is noteworthy in that in order for the PP to escape the Nuclear Scope, it must move outside the VP domain, i.e. to the left of *dou*. In (59), however, the PP has to be within VP (canonically V'-adjoined) so that it can get the existential/interrogative reading.

One may question the analysis that PP moves (out of VP) in cases like (70). But there is evidence to show that PP can move leftward. Consider the following sentences:

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18Below, I use example (77) to show that an adverb in the matrix clause cannot be related to a wh-phrase in an adverbial clause.

(77) *[[ta zai za shenme de shihou], [wo dou jinlai-le]].
he currently trash what DE time, I all enter-asp
'I entered when he was trashing everything.'

If the sentential subject in (69) is analyzed as an adverbial clause, one needs to capture the contrast between (69) and (77).
Liu et al (1983:476) point out that most of the PPs in Chinese can appear either before or after the subject. Since PP in (71) is fronted overtly to the left of the subject, it is not unreasonable to assume that the PP in (70) also moves leftward, though NOT to the S-initial position, but to a position between the subject and the adverb *dou.*

Recall that I proposed above that *dou* is adjoined to a functional projection. This proposal is further supported by the data involving PPs. Consider examples (72) which has a PP, but no *dou*. Notice that the PP can precede or follow the modal verb:

(72) a. wo *neng* [_{f} xiang ta ] jiedao qian.
I can from him borrow money
'I can borrow money from him.'

---

I thank Leslie Saxon for reminding me of the PP data.

Two of the few non-frontable PPs are headed by *ba* and *bei* (passive 'by') (Liu et al 1983:476). Since these types of PP can also appear to the left of *dou,* a question arises as to how to justify the movement analysis for them in the absence of their overt fronting. Take *ba-NP* for instance:

(i) ta *dou* ba *shenme* chi-le?
he all BA what eat-asp
'What did he eat?' (Exhaustive list reading)

(ii) ta *ba shenme* dou chi-le.
he BA what all eat-asp
'He ate everything.' (Universal reading)

(iii) *ba shenme* ta *dou* chi-le.
BA what all eat-asp
'He ate everything.'

I assume that the *ba-NP* in (ii) is also moved. Specifically, I propose that it is adjoined to a functional projection. This analysis can be justified in two ways. First, as shown in Section 3.1.2. of Ch. 3, the *ba-NP* can appear in different position with respect to other PPs (though with different scope readings). This indicates that the position of the *ba-NP* is not fixed. Further, it parallels the behaviours of non-manner adverbs: it cannot be fronted, but its position is not fixed either. Second, as Henry Davis points out (p.c), *ba-NP* is usually the object of the verb, and the whole phrase is therefore closely connected to the argument structure of the verb. As functional projections are extended projections of the verb, there is nothing incompatible for the *ba-NP* to adjoin to a functional projection.
b.  wo [pp xiang ta] neng jiedao qian.
   I    from him    can borrow money
   'I can borrow money from him.'

However, when the object of the preposition is a wh-phrase and is quantified over by the adverb
for the universal reading, the PP and *dou* MUST be to the left of the modal verb.

(73)  a.  wo [pp xiang shei ] dou neng jiedao qian.
      I     from who   all can borrow money
      'I can borrow money from anybody.'

       *wo neng [pp xiang shei ] dou jiedao qian.
      I     can      from who   all borrow money
      'I can borrow money from anybody.'

      I     from who   all can borrow money
      'I can borrow money from anybody.'

In contrast, in the case of interrogative/exhaustive list reading, *dou* is preferably to the left of
the modal verb with the PP after it:

(74)  a.  ni dou neng [pp xiang shei ] jiedao qian?
      you all   from who   borrow money
      'From whom can you borrow money?'

       *ni neng dou [pp xiang shei ] jiedao qian?
      you can all    from who   borrow money
      'From whom can you borrow money?'

       c.  *ni dou [pp xiang shei ] neng jiedao qian?
      you all    from who   can borrow money
      'From whom can you borrow money?'

The contrast between (73) and (74) provides strong support for the proposal that for *dou* to
quantify over the object of a prepositional phrase for the universal reading, both the PP and the
adverb must be adjoined to a functional projection higher than MP since they must be to the left
of the modal verb. In Diesing’s terms, this means that the wh-object of a preposition associated with the presuppositional reading must be in the restrictive clause, the domain above VP.

Apart from ruling in grammatical sentences, our account also successfully excludes the universal reading of a wh-phrase in the following set of data:

**SET C: Violation of the locality constraint and the absence of the universal reading:** There are three cases to consider:

(a) A wh-phrase in the main clause with *dou* in an object complement clause:

(75)  *nage xuesheng bu renwei [iₜₚ ta *dou* lai].

which students not think  he all come

‘All the students do not think that he will come.’

Example (75) is ruled out since the locality constraint governing the range and the quantifier is violated. As shown in (76), the sentence is equally bad if an embedded wh-object is fronted to the S-initial position:

(76)  *Nabu dianying, ta bu xiangxin [iₜₚ wo *dou* kan-guo tₜ].

which films  he not believe  I all see-asp

‘He does not believe that I have seen every film.’

(b) In the following example, the adverb *dou* is in the matrix clause while the wh-phrase is in an adverbial clause:

(77)  *[iₜₚ ta zai za shenme de shihou], [iₜₚ wo *dou* jinlai-le]].

he currently trash what  DE time,  I all enter-asp

‘I entered when he was trashing everything.’

Again the locality constraint is violated in (77).

(c) The adverb of quantification is in the matrix clause, but the wh-phrase as its range
is in the complement clause to an NP:

  he hit-asp who  DE testimony all at here
  'The testimony that he hit everybody is here.

Example (78) is ruled out by the locality constraint. This follows from our discussion above that an NP complement clause is an island for quantification/construal (while a relative clause is not).

To summarize, if a wh-phrase as an indefinite NP is outside the VP domain, it then can define the range of the adverb of quantification dou within the same clause and obtain the presuppositional/universal reading.

To briefly evaluate our analysis, our proposal is based on the current theoretical framework proposed by Diesing. Her model, which interfaces syntax and semantics, has been proved successful in analyzing indefinites in English and other languages. Its application to Chinese, which differs from English both typologically and genetically, further demonstrates the validity of her approach. In general, our analysis conforms to the convention that interpretation is an LF operation. In Chinese, the reading of a wh-phrase in the context of dou is marked by its S-structure position. Specifically, we claim that the obligatory shifting of indefinite NPs for the universal reading is only an S-structure reflex of some LF requirement: the presuppositional NP is shifted to escape the Nuclear Scope for the correct LF mapping. Furthermore, the S-structure requirement that dou can only quantify over a clausemate wh-NP again follows from an LF requirement since the locality constraint is one of the characteristics of LF QR. If the S-structure wh-shift is analyzed as a kind of S-structure QR, its clause-boundedness only reflects its inherent connection to its LF counterpart. Finally, S-structure QR (in the form of the wh-NP shift in Chinese) is not an isolated case. It has been proposed in the
literature that Hungarian (Kiss 1990) and German (Fanselow 1990) have S-structure QR. Also recall that in languages like Dutch and German, the S-structure position of an indefinite NP determines its LF interpretation (Diesing 1992). One significant generalization emerging from our current study is that Chinese, together with Hungarian and German, represents one type of languages where the LF interpretations are syntactically signalled at S-structure.

4.4. Summary

This chapter investigates the position of a wh-phrase with respect to *dou* and the various readings associated with it. More specifically,

(I) I provide a broader database. In particular, I discuss the existence of the **interrogative/exhaustive list** reading associated with a wh-phrase to the **right** of *dou* at S-structure, an empirical fact which has not been discussed in the GB literature.

(II) Based on Diesing (1992), I propose that a wh-phrase as indefinites can be either presuppositional or existential. If it is outside VP, it defines the range of the adverb of quantification *dou* and obtains the presuppositional/universal reading. If, however, it is within VP (i.e. the nuclear scope), it is subject to existential closure and gets the existential/interrogative reading. The exhaustive list reading of the wh-phrase with the interrogative reading is derived from the fact it is in the scope of *dou*.

(III) In contrast to the latest work on *dou* quantification (Cheng 1993), I propose that *dou* is adjoined to the bar level of any functional projection. Further, I argue that the wh-phrase with the universal reading is not in some 'aboutness' topic position, but is in [Spec AgrOP] as a result of A-movement.

(IV) I examine different syntactic structures where a wh-phrase and *dou* occur, and the
resultant readings associated with the former.

As an epilogue to this section, let us explore the ambiguous readings of the following sentence:

(82)  Shei dou xiang chi shenme?
      who all want eat what

(a) 'What does everybody want to eat?'
(b) '?'Who wants to eat what (list)?'
(c) NOT: 'What (list) does everybody want to eat?

This sentence has two wh-NPs. One is the subject NP shei and the other is the object NP shenme. The wh-subject shei 'who' is outside the VP domain as it is to the left of dou, and hence reading (a). In contrast, the object NP is in situ since it is to the right of dou and the verb, and it receives, among other things, the existential reading (reading b) as a result of existential closure. Reading (c) does not obtain. The reason is that dou can only quantify over one item at one time (Huang 1982), but it quantifies over both the subject and the object under this reading.
Chapter 5 Conclusion

In this chapter, I first summarize what has been accomplished in the previous chapters. I then consider certain issues that are unresolved in the current work but represent interesting topics for future research.

5.1. Research Findings

This dissertation studied NP leftward dislocation in Mandarin Chinese. I first of all discussed NP fronting cases which are commonly known as 'topicalization'. As illustrated in example (1) below, the object NP is fronted to the S-initial position:

(1) zhege ren, wo jian-guo ti.  
this person I meet-aspect 
'This person, I have met.'

Based on subjacency tests, I argued that sentences like (1) involve syntactic movement of the object NP. In other words, the S-initial NP is not base-generated S-initially, with the empty category being a pro, as proposed in Xu and Langendoen (1985). After establishing the movement thesis, I applied several diagnostic tests to determine the nature of the syntactic process. My conclusion is that short-distance fronting can be either A or A’-movement while long-distance fronting is invariably A’-movement. I further proposed that A-type fronting involves raising to [Spec AgrOP], following current assumptions about clause structures, while A’-type fronting involves adjunction to CP. I also discussed subjacency suspension in cases of extraction out of the S-initial domain. In Ch.3, I investigated 'object shift' where the object is dislocated to a position between the subject and the verb. An example is provided below:
(2)  wo zheben shu, yijing kanwan-le ti.
I this book already read-asp
'I already finished reading this book.'

I proposed that the movement exemplified in (2) is an A-movement and that its landing site is [Spec AgrOP] as a manifestation of overt raising for feature-checking. Based on data from other languages, I further proposed that the correlation of the definiteness of the shifted NP and the possibility of object shift justifies our postulation of [Spec AgrOP] as the landing site (cf. Runner 1994), even in the absence of morphological agreement in Chinese.¹

In Ch.4, I explored the interactions between dou, an adverb of quantification, and wh-phrases. Descriptively, an in-situ wh-object to the right of the adverb keeps its interrogative reading; in contrast, a wh-object shifted to the left of the adverb is universally quantified.

Consider the following pair of sentences:

(3)  a.  John dou chi-guo shenme?
    John all eat-asp what
    'What has John eaten?' (exhaustive list reading)

  b.  John shenme, dou chi-guo ti,
    John what all eat-asp
    'John has eaten everything.' (universal reading)

Adopting Diesing (1992), I proposed that in the context of dou, the reading of a wh-phrase is

¹Another possibility for deriving OSV order is that both the object and the subject leave their [Spec AgrP] positions and get CP-adjoined, resulting in O-S-t-t-V. However, this derivation is prohibited by relativized minimality (which prevents t from being antecedent governed by 'O' due to the presence of 'S'), or by relativizing the Economy principle (Henry Davis p.c.). Specifically, we may propose that each A'-movement must lead to a separate interpretation, and multiple A'-movements which lead to the same interpretations are barred. Note that this kind of A'-multiple movements is different from further extraction out of a fronted object NP as discussed in section 2.1.4 in Ch. 2. That is because in the latter case, the reading for the fronted object NP itself is different from that for the NP that is further extracted out of it. In other words, while the fronted object NP is a 'topic' in relation to the rest of the sentence, the further extracted NP is a 'topic' in relation to this fronted NP.

The consecutive A'-adjunction possibility applies to deriving SOV as well, i.e. both NP are CP-adjoined leaving traces in the [Spec AgrP] positions, resulting S-O-t-t-V. Again this possibility is ruled out by the Economy principle (which bars longer derivation), the "path containment condition" (which prohibits A'-paths from crossing each other) or by the relativized minimality.
positionally determined at S-structure (cf. German and Dutch). Specifically, if the wh-object remains in situ as in (3a), it obtains the existential reading due to existential closure applying to the VP domain at LF. It further keeps its interrogative reading due to the default binding by [+wh] in COMP. If, however, the wh-phrase is shifted out of the VP domain as in (3b), it forms the restrictive clause and defines the range of quantifier dou, and thus obtains the universal/presuppositional reading.

As shown in previous chapters, not any NPs can be dislocated: only definite and generic NPs and universal quantifiers are eligible for participating in this syntactic process. For instance, an indefinite object can neither be fronted nor shifted:

(4)  a. *yiben shu1 wo kan-guo t₁.
     one book I read-asp
     'One book, I have read.'

     b. * wo yiben shu1 kan-guo t₁.
     I one book read-asp
     '*I one book have read.'

A closer look at the dislocated object NPs reveals that what group them together is that they are all presuppositional in the sense of Diesing (1992). Specifically, the existence of entities which they denote has already been presupposed in the previous discourse. Given this shared property, I propose that what ties the three chapters together is leftward dislocation of NPs associated with presuppositional readings.

In addition to addressing some empirical issues internal to Chinese syntax, the current work also attempts to contribute to a more general understanding of the theory of grammar. For instance, Diesing's model is developed on the basis of Indo-European languages. To my knowledge, this model has not been applied to the analysis of S-structure dislocation of object
NPs in Chinese. Its successful application, as shown in previous chapters, not only captures the empirical facts in Chinese, but also demonstrates its explanatory value for a broader range of data. In particular, employing Diesing’s distinction between presuppositional and non-presuppositional NPs and her tree splitting model, we can provide a plausible analysis for the obligatoriness of dislocation for a wh-phrase when used as a universal quantifier and for the prohibition of dislocation for indefinite NPs.

Another way in which the current work contributes to our understanding of the theory of grammar is that it provides empirical justification for the postulation of Agr in Chinese consistent with current assumptions about clause structure. According to the Split Infl Hypothesis, a finite clause contains various Agreement Phrases. Though by null hypothesis we can posit the existence of AgrP in Chinese even in the absence of morphological evidence, we still preferably need some evidence in support of this postulation. This missing evidence is provided indirectly by the crosslinguistic correlation between dislocated NPs and their obligatory definiteness in morphologically rich languages. According to Runner (1994), there are five manifested correlations between specific NPs and Agr. One of them is that specific NPs can overtly surface in [Spec AgrP], as in Spanish, German and Catalan. Given this correlation, the obligatory definiteness of the shifted and fronted NP in Chinese should by deduction suggest that there are Agr projections in this language whose specs accommodate the dislocated NPs. This is on a par with the postulation of abstract Case in Chinese (Li 1990). Despite the absence of morphological case, abstract Case plays a regulatory role in the distribution of NPs in Chinese. Similarly, the morphologically invisible Agr exerts its impact in Chinese syntax by hosting the dislocated NP in its Spec position.
5.2. Residual Issues:

There are certain issues that the current work is unable to fully resolve. In this section, I will briefly discuss them and offer some speculations to be pursued in future research.

5.2.1. Optionality of Definite NP Dislocation

Recall that a definite NP can be dislocated, but it does not have to be. This contrasts with the case of a wh-phrase: it must be dislocated to the left of *dou* for the universal reading. Take object NP shift for instance:

(5) a. wo yijing kan-le zhexie shu.
I already read-asp these books
'I have already read these books.'

b. wo zhexie shu, yijing kan-le ti.
I these books already read-asp
'I have already read these books.'

(6) a. ni *dou* kan-guo shenme shu?
you all read-asp what books
'What books have you read?'

b. ni shenme shu, *dou* kan-guo ti.
you what books all read-asp
'You have read all kinds of books.'

In (5), the definite object NP can either stay in-situ or be shifted. In (6), a universal reading obtains for the wh-phrase only when it is shifted to the left of *dou*. The question is why object shift for the ordinary definite NP is optional while the shift for the wh-object for the universal reading is obligatory.

I propose that this obligatory/optional contrast is attributed to the presence of *dou*. 
Specifically, an NP which is to be quantified by *dou* is strongly presuppositional. In order to achieve strong presupposition, it must be shifted to the left of the adverb as the latter only quantifies to the left. In contrast, NPs which are weakly presuppositional can remain in-situ or be shifted at S-structure. In (5a-b), since the definite NP is not quantified by *dou*, it is weakly presuppositional and can thus remain in-situ or shifted. Contrast (5a-b) with (7a-b) which contain *dou*:

(7)  

a. *wo* *dou* yijing kan-le zhexie shu.  
I all already read-asp these books  
'I have already read all of these books.'

b. wo zhexie shu, *dou* yijing kan-le t.  
I these books all already read-asp  
'I have already read all of these books.'

In (7a), the definite NP can not be quantified by the adverb since it is to its right. As the adverb has nothing to quantify over, the sentence is ruled out. To remedy the situation, the definite NP which is quantifiable must be shifted to the left of this adverb to be quantified over by it. Hence the obligatory shift of the definite NP as is shown in (7b).

A related question arises as to why *dou* must quantify to the left. A possible answer is that given the assumptions adopted in Ch.4, the area to the left of *dou* (i.e. above VP) forms the 'restrictive clause' which accommodates the range of a quantifier. This determines that the definite NP must move leftward in order to be in the restrictive clause and to function as the range of the quantifier. Hence the observation that this adverb must quantify to the left. Again
the directionality of *dou* quantification should be perceived as an S-structure reflex of the abstract LF operations (quantification, restrictive clause formation, etc.).³

5.2.2. Feature Checking and the Tree-splitting Model

In her tree-splitting model, Diesing (1992) does not adopt the Split Infl Hypothesis. She treats VP as the dividing line between Restrictive Clause and Nuclear Scope. In Ch.4, I adopt both Diesing's model and AgrPs for clause structures. My working hypothesis is to simply follow Diesing in treating VP as the dividing line between those two domains. Although this working assumption is valid for the analysis for the data, it remains to be determined whether the dividing line should really be drawn at VP or somewhere above VP. For instance, could it be that MP demarcates the two domains since the shifted wh-object must be to the left of the modal verb? In other words, could it be that the area above the MP constitutes the 'restrictive clause' while the area below it represents the 'nuclear scope'? More work is needed before any conclusive decisions are made.

Related to the demarcation issue is the implementation of feature checking. For Diesing, LF is the domain for interpretation while for Chomsky (1993) it is also the domain for feature checking. If we assume the minimalist approach, the question is how to reconcile feature checking with Diesing's claim that the S-structure positions of, say, bare plural NPs determine how they should be mapped to logical representations. In the German sentence in (8) below, the indefinite NP is to the right of the adverb:

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³The leftward quantification of *dou* is further motivated if (i) it further adjoins to the definite NP at LF as Cheng proposes (1993), and (ii) adjunction in general is only leftward in Chinese.
According to Diesing, the position of the indefinite NP in (8) is within VP at S-structure, and the tree-splitting algorithm will map the subject occupying the [Spec VP] position into the nuclear scope of the logical representation, giving rise to the existential, or cardinal, reading. Under Chomsky’s minimalist program, object NP should raise to [Spec AgrOP] for feature checking either at S-structure or at LF. Following this proposal, the NP in (8) has to raise at LF to check its features. But this entails that the object is above the VP domain at LF, and that it cannot be correctly mapped to the nuclear scope of the logical representation. This predicts that the indefinite object cannot have the cardinal reading, contrary to fact. One way to reconcile raising for feature checking and correct mapping is to assume that at LF’ (cf. Cheng 1991), the raised object moves back to its S-structure position before it is finally mapped to the nuclear scope for the existential reading.

5.2.3. The Licensing Puzzle of Object Shift

Object shift has been found in languages where verb movement is attested, languages such as Mainland Scandinavian, Icelandic, German, Dutch, Hindi and Japanese (Deprez 1989, Mahajan 1990). According to Deprez (1989:227-236), S-structure verb movement to a functional head will nullify the barrierhood of VP, thus making it possible for the object to move out. Leaving the technical implementation aside, a question arises as to why Chinese licenses object

*Contrast (8) with (i) where the indefinite NP is to the left of the adverb and has a presuppositional reading:

(i) weil zwei Cellisten ja doch in diesem Hotel abgestiegen sind. since two cellists 'indeed' in this hotel have-taken-rooms
shift, even if it does not exhibit verb movement. The claim that Chinese has no verb movement can be established by looking at the position of the verb with respect to adverbs (cf. Pollock 1989:367). In Chinese, adverbs must be preverbal at S-structure as shown in (9a), assuming as before that manner adverbs are base-generated immediately to the left of the verb. S-structure verb movement (to Asp or Agr) predicts that the adverb should end up to the right of the verb. But as shown in (9b), this word order leads to ungrammaticality.

(9) a. wo renzhende kan-le zheben shu. I conscientiously read-asp this book 'I read this book conscientiously.'

(9) b. *wo kan-le renzhende zheben shu. I read-asp conscientiously this book 'I read this book conscientiously.'

The fact that (9b) is ungrammatical supports the claim that there is no S-structure movement of the verb (to I) in Chinese.

Lack of correlation between object shift and verb movement in Chinese leads to two possible conclusions: either the claim that object shift is dependent on verb movement is wrong, or object shift is not a unitary process crosslinguistically. This reminds one of the case of pro-drop, which is found in languages which are either morphologically rich or poor (cf. Italian, Spanish on one hand and Chinese on the other). As has been attempted for the pro-drop data, one might posit an object shift parameter. However, this solution is the least interesting one as it would only shift the burden of explanation for the data per se to the explanation for the parameter.

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5Huang (1992) proposes a kind of verb movement to account for the distribution of frequency/duration expressions in Chinese. In his analysis, the verb only moves to a higher empty verb position; it is not the type of V-to-I movement as discussed in the object-shift languages. When I use the term 'verb movement', I am referring to the V-to-I movement.
One promising line to pursue is to examine the nature of the relevant nodes whose specs accommodate the shifted object. According to Chomsky (1993:15), 'the N-feature of Tense is strong in English...hence NP must raise to SPEC-[AGR, T] in English prior to SPELL-OUT or the derivation will not converge...Note that the N-feature of AGR is weak in English, or we would have overt object shift.' Following Chomsky, we may suggest that the N-feature of Agr can be strong in Chinese, and this makes object shift possible. But once again, this solution faces the same problem of circularity as the parameter approach. Under this hypothesis, object shift is allowed because the N-feature of Agr in Chinese can be strong; the evidence that N-Feature of Agr can be strong is that object shift obtains. In other words, there is no independent evidence to back the claim that the N-feature of Agr is strong, a claim which is intended to motivate object shift.6

Note that we cannot claim that the morphological features of Chinese nouns are strong, so that they must be overtly raised for feature checking before SPELL-OUT (like the overt raising of French verbs as proposed in Pollock 1989). This is because like Chinese verbs, Chinese nouns do not have overt morphological marking. Further, even if we were to claim that they were strong, we would have no explanation for why they can remain in-situ. Chomsky proposes (1993:15) that 'a language might allow either weak or strong inflection, hence weak or strong N-features: Arabic is a suggestive case, with SVO versus VSO correlation with the richness of visible Verb-inflection.' This may suggest an answer to the question of why definite NPs can be shifted or remain in-situ. Specifically, one may claim that Chinese also has weak and strong N-features to allow the alternation of being in-situ or shifted for the definite object.

6Note that we cannot say that it is definiteness of object NPs that licenses object shift. This is because definite object NPs can remain in-situ in Chinese. Moreover, although English has definite object NPs, it cannot have object shift.
But one recalcitrant problem remains. In Arabic, the strength of N-feature correlates with the richness of verb-inflection. Since Chinese has no morphological inflections whatsoever, we do not have this overt correlation. To posit an abstract variation of strong and weak N-feature to account for the optionality of object shift amounts to nothing but a veiled stipulation. I leave the final solution for the licensing puzzle of object shift open for future research.

5.2.4. The Interpretative Puzzle of Object Shift

The process of fronting the object NP yielding the OSV order has been traditionally called 'topicalization', and the fronted object has been treated as the 'topic' of the sentence (Huang 1982, Li 1990). As object shift also obtains in Chinese, yielding SOV order, a question arises as to what is the interpretative function of the shifted object. In particular, does it function as the topic like its S-initial counterpart in OSV sentences?

I argued in Chs. 2 and 3 that the dislocated object in both OSV and SOV orders lands in [Spec AgrOP] as overt raising for feature checking. Suppose we assume that topicalization is a kind of overt movement motivated for phi-feature agreement between the object and the AgrO head. Since both OSV and SOV involve raising to [Spec AgrOP], object shift should be considered as a kind of 'topicalization' as well, like the prototypical OSV constructions.

The claim that SOV also represents 'topicalization' must address two questions: (a) does the object in SOV syntactically qualify as the topic? (b) why does Chinese license both SOV and OSV as two manifestations of one topicalization operation? Let us consider the first question. There are at least two tests which we can use to determine the eligibility of the shifted NP as a topic. One is that topic NPs must be definite or generic. Evidence abounds in showing

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7In the A'-movement yielding OSV, the object first lands in [Spec AgrOP] before it is further A'-adjoined, leaving an intermediate trace in that spec position.
that only these two types of NPs can be shifted as in the fronting cases (cf. Ch.3):

(10) a. wo pljiu he-guo. (Generic NP is shifted)
    I beer drink-asp
    'I have had beer before.'

    b. wo zheben shu kan-guo. (Definite NP is shifted)
    I this book read-asp
    'I have read this book.'

    b' *wo yiben shu kan-guo (Indefinite NP is shifted)
    I one book read-asp
    'I have read a book.'

Second, topic and focus are conflicting discourse functions (Bresnan and Mchombo 1987: 757-759). For instance, a questioned constituent or the clefted NP in cleft constructions universally bears the FOCUS function as shown in (11a); in contrast, the relative pronoun and relativized constituent universally bears the TOPIC function as shown in (11b). When we relativize the clefted NP in a cleft construction, the sentence deteriorates in grammaticality as is shown in (11c):

(11) a. It was John [that Marilyn suspected _____ ]
    focus

    b. The car which you don’t want is a BMW.
    topic

    c. *the person who it was ___[that Marilyn suspected __ ].
    topic      focus

Consider the following wh-question/answer pair in Chinese (cf. Rochemont 1986):

(12) Q: ni kan-guo naben shu?
    you read-asp which book
    'Which book have you read?'
In (12Q), the object NP is questioned. Of the three replies, only (12A1) where the object is insitu is acceptable. (12A2) is bad because the fronted ("topicalized") object is used as a reply to the questioned element in (12Q). According to Rochemont (1986), the questioned constituent corresponds to the focus of a relevant construction. But the fronted NP in (12A2) is a topic as we argue above. Therefore (12A2) is ruled out as a reply due to the incompatibility between topic and focus. (12A3) is as bad in reply to (12Q) as (12A2). If the shifted object NP is analyzed as a (secondary) topic as we do here, its ungrammaticality in this question/answer context follows for the same reason as that in (12A2). Specifically, my proposal that the shifted object is a topic predicts that it cannot be a focus at the same time, a prediction which is borne out by the data in (12). In short, based on the definiteness and topic/focus tests, I conclude that the shifted object qualifies as a topic, which, according to Diesing (1992), is presuppositional.

Let us now address the second question: why Chinese allows both NP fronting and shifting as topicalization processes. One possible answer is that Chinese is a topic-oriented language (Huang 1984:549). The discourse structure of Chinese is such that speakers have the freedom to highlight the topic of their utterances by placing it at the beginning of a sentence. In contrast, English, according to Huang (1984:549), is a sentence-oriented language, and this
may explain lack of the freedom to shift objects as in Chinese. In addition, in the previous chapters, we propose the following:

(13) a. In OSV constructions, the subject is in [Spec AspP/MP] and the object is in [Spec AgrOP] (cf. Ch 2.);

b. In SQV constructions, the subject is in [Spec AgrSP] and the object is in [Spec AgrOP] (cf. Ch 3.);

Given this proposal, we may further speculate that NPs raised to functional projections (whether [Spec AgrP] or [Spec AspP]) are topic positions. Specifically, in both OSV and SOV, there are two topic NPs since both the subject and object are in the spec of a functional projection respectively. Right now I see little distinction in terms of topic functions between the fronted object NP and the shifted object NP, and I leave this issue open for future research.

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8Henry Davis (p.c.) informs me that German and Dutch, which have object shift, are V2-languages, and that they are generally treated as 'topic-prominent' languages (cf. Koster 1978, Thiersch 1978).

9In the canonical SVO word order, there is only one topic NP since only the subject, not the object, is located in the spec position of a functional projection.

10The idea that there are two topics in a sentence is not a novel one. Aissen (1992) proposes that Mayan languages have two topic positions. Under her analysis, the external topic is base-generated in an adjoined position to E(vent)P and the internal topic is in [Spec CP]. See also Kuno (1973), Kuroda (1988), Guilfoyle, Hung and Travis (1992) and Rice and Saxon (1994) on this subject.
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