Chapter 8: Questions

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Like other languages, Chinese has several types of interrogative sentences, including yes-no questions, disjunctive questions, and constituent questions:

(1) ni renshi ta ma?
    you know him/her Q
    ‘Do you know him/her?’

(2) ni xiang chuqu kan dianying haishi zai jia da majiang?
    you want go-out see movie or at home play mahjang
    ‘Would you like to go out to see the movie or play mahjang at home?’

(3) ni xiang gen shei shangliang zhe-jiang shi?
    you want with who discuss this-CL thing
    ‘Who would you like to discuss this matter with?’

These question types are also known as particle questions, alternative questions and wh-questions, respectively. In addition to these three types, researchers have generally recognized a special question form, termed A-not-A questions in the Western linguistics literature:

(4) ni renshi ta bu renshi ta?
    you know him/her not like him/her
    ‘Do you know him/her or not?’

While an A-not-A question translates like a yes-no question, most researchers have agreed that A-not-A questions should be viewed as a special type of disjunctive questions. Semantically, an A-not-A question requests the addressee to choose between a
positive and a negative alternative provided in the question, while a yes-no question asks for a confirmation or denial of a single proposition, which itself may be positive or negative. Thus, a yes-no question may take a positive form as in (1) asking for the addressee’s truth-evaluation of the proposition “you know him/her”, or it may take a negative form:

\[(5) \text{ ni bu renshi ta ma?} \]
\[
\text{you not know him/her Q}
\]
\[
\text{‘Don’t you know him/her?’}
\]

Pragmatically, yes-no questions may be used to express the speaker’s skepticism, and so (5) may be uttered with the expectation that the answer will confirm in the positive that you do know him/her. An A-not-A question is entirely neutral, however, conveying no expectation from the speaker as to which alternative is more likely to be correct.\(^1\) This difference is syntactically realized by the distributional difference between two attitudinal adverbs: nandao and daodi: nandao occurs with a yes-no question, whereas daodi occurs with an A-not-A or wh-question, but not vice versa:\(^2\)

\[(6) \text{ ni nandao/*daodi (bu) renshi ta ma?} \]
\[
\text{you actually/truly not known him/her Q}
\]
\[
\text{‘Is it actually the case that you (don’t) know him/her?’}
\]

\[(7) \text{ ni daodi/*nandao renshi ta bu renshi ta?} \]
\[
\text{you truly/actually know him/her not know him/her}
\]
\[
\text{‘Let me get to the answer now: do you know him/her or not?’}
\]

Another syntactic difference is that A-not-A questions may optionally end with the Q(uestion)-particle ne, whereas yes-no questions must end with ma:

\[(8) \text{ ni renshi ta bu renshi ta ne/*ma?} \]
\[
\text{you know him/her not like him/her Q}
\]

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\(^1\) See Li and Thompson (1979) for this observation.

\(^2\) The two items nandao and daodi are somewhat difficult to translate word-for-word. The full meanings of these expressions may be gleaned from their components. Literally, nandao means ‘difficult-say’, and its full literal meaning might be something like “Might I find it difficult to say/believe [that … ]?” A more idiomatic translation would be “Do you mean to say [that … ]?” In other words, nandao marks incredulity on the part of the speaker. As for daodi, its literal meaning is reach-bottom, viz., “Now, let me get to the bottom (of this question).” When used in a disjunctive, A-not-A or wh-question, it expresses an urgent desire, even a sense of impatience, on the part of the speaker to get to the specific information being requested. Thus a wh-question containing daodi has a pragmatic flavor akin to questions containing who the hell, what the dickens, etc., as indicated in the translation for (11). To save space, we have used ‘actually’ and ‘truly’ in our word-for-word glosses for these two attitudinal adverbs, but their full meanings must be kept in mind.
‘Do you know him/her or not?’

(9) ni rensi ta ma/*ne?
you know him/her Q
‘Do you know him/her?’

In all these respects, A-not-A questions behave on a par with disjunctive questions and, in some respects, also with wh-questions:

(10) ni daodi/*nandao xiang kan dianying haishi da majiang ne/*ma?
you truly/actually want see movie or play mahjang Q
‘Would you—please tell me!—rather go to the movie or play mahjang?’

(11) ni daodi/*nandao xiang shuo shenme ne/*ma?
you truly/actually want say what Q
‘What the hell are you trying to say?’

We shall then treat A-not-A questions as a type of disjunctive questions in this chapter, though, at the level of formal analysis, we shall end up with the surprising conclusion that some true A-not-A questions are treated on a par with normal wh-questions and others are treated as particle questions.

We shall start with a brief discussion of yes-no questions and normal disjunctive questions in Sections 1 and 2. This will be followed by a detailed analysis of A-not-A questions in Section 3. The syntax and interpretation of wh-questions will be discussed in Section 4. Section 5 is a brief summary.

7.1. Yes-No Questions

The formation of yes-no questions is quite straightforward in Chinese: it simply attaches the yes-no question marker *ma* to the end of a statement:

(12) a. ta zhu zher.
he live here
'He lives here.'

b. ta zhu zher ma?
he live here Q
'Does he live here?'

(13) a. ta bu zhu zher.
he not live here
'He does not live here.'

b. ta bu zhu zher ma?
he not live here Q
'Does he not live here?'
A *yes-no* question requests the addressee to indicate whether a given proposition is true or false. In addition to being entirely neutral, sometimes the speaker may have a certain belief about a given proposition. In such a case, a *yes-no* question is used to solicit the addressee’s confirmation of that belief. Such a predisposition is expressed by an expression of the speaker’s disbelief, either with appropriate intonation or with the incredulity marker *nandao* ‘do you really mean to say’:

(14) a. nandao ta shi laoshi ren ma?
    actually s/he be honest person Q
    ‘Do you really mean to say that s/he is an honest person?’

    b. ta nandao shi laoshi ren ma?
    s/he actually be honest person Q
    ‘Is s/he actually an honest person?’

As shown above, *nandao* may precede or follow a subject. While the two versions are virtually identical in core meaning, they differ with respect to their focus, or scope—how much of a given proposition is being called into question. In (14a), the scope of the question includes the subject; in (14b), the subject is outside the scope of the question.

With *nandao* preceding the subject, the focal point of the question may be about the identity of the subject referent, i.e., whether s/he is the person associated with the property of being honest. With *nandao* following the subject, the identity of the subject referent is presupposed, and the focal point of the question is whether this subject referent does have the property of being honest.

Taking the subject preceding *nandao* to be presupposed material falling outside of the focus of the *yes-no* question explains why focalized and asserted constituents—such as existential phrases, clefted constituents, as well as constituents associated with *even, only* and *negation*—cannot appear before *nandao*

(15) a. nandao you ren xihuan Lisi ma?
    actually EXIST person like Lisi Q
    ‘Does someone/anyone like Lisi?’

    b. *you ren nandao xihuan Lisi ma?
    EXIST person actually like Lisi Q

(16) a. nandao shi Lisi xian taozou de ma?
    actually BE Lisi first escape DE Q
    ‘Is it actually Lisi who ran away first?’

    b. *shi Lisi nandao xian taozou de ma?
    BE Lisi actually first escape DE Q

    c. *shi nandao Lisi xian taozou de ma?
    BE actually Lisi first escape DE Q
(17) a.  ta  nandao shi zuotian cai chufa de ma? 
   s/he actually BE yesterday only-then depart DE Q
   ‘Was it actually not until yesterday that s/he departed?’

   b.  *ta  shi nandao zuotian cai chufa de ma? 
       s//he BE actually yesterday only-then depart DE Q

(18) a.  nandao lian yi-ge ren dou bu mai ma? 
       actually even one-CL person all not buy Q
       ‘Is it actually the case that not even a single person wants to buy [it]?’

   b.  *lian yi-ge ren nandao dou bu mai ma? 
       even one-CL person actually all not buy Q

(19) a.  ni nandao bu xiang guo-lai ma? 
       you actually not want pass-come Q
       ‘Do you actually not want to come over here?’

   b.  *ni bu nandao xiang guo-lai ma? 
       you not actually want pass-over Q

Note that since nandao selects a yes-no question as its complement, and because a yes-no question is restricted to be the matrix clause, it follows that nandao cannot occur in an embedded clause:³

³ The following acceptable sentences should be analyzed as direct quotations under the matrix expression: ‘[What do] you think’:

(i)  ni     xiang nandao   ta     shi laoshi  ren      ma? 
     you  think  actually  s/he be  honest person Q
     'You think: is s/he actually an honest person?'

(ii)   ni  xiang ta   nandao   shi laoshi  ren        ma? 
      you think  actually be  honest person  Q
      'You think: is s/he actually an honest person?'

A pause is preferred following the main verb 'think'. A third person replacing the second person 'you' in the matrix subject position makes the quotative reading more difficult and the acceptability decreases unless there is a very clear pause:

(iii)   ta xiang: ni nandao shi laoshi ren ma? 
        he   think you actually be honest person Q
        'He thinks: are you an honest person?'
(20) a. nandao ni xiangxin ta shi laoshi ren ma?
   actually you believe he be honest person Q
   'Do you actually believe that he is an honest person?'

b. ni nandao xiangxin ta shi laoshi ren ma?
   you actually believe he be honest person Q
   'Do you actually believe that he is an honest person?'

c. *ni xiangxin nandao ta shi laoshi ren ma?4
   you believe actually he be honest person Q

d. *ni xiangxin ta nandao shi laoshi ren ma?
   you believe he actually be honest person Q

In Section 1 it was mentioned briefly that while nandao occurs with a yes-no question, the adverb daodi ‘reach-bottom’ occurs with an information-seeking question (a wh-, disjunctive or A-not-A question). Like nandao, daodi is also an attitudinal adverb, but rather than expressing incredulity, it conveys an urgent desire—and even a sense of impatience—on the part of the speaker to find out about the answer to a given question:

(21) Zhangsan daodi mai-le zhe-ben shu haishi na-ben shu?
   Zhangsan truly buy_PERF this-CL book or that-CL book
   ‘Let me get to the truth: did Zhangsan buy this or that book?’

(22) ni daodi ai-bu-ai ta?
   you truly love-not-love him/her
   ‘Truly, do you love him/her or not?’

(23) ta daodi ai-shang-le shei le?
   s/he truly love-on-PERF who ASP
   ‘Who the hell has s/her fallen in love with?’

In addition to expressing the speaker’s attitude as above, daodi can also be used to express the attitude of the matrix subject referent—the ‘internal speaker’. This is the case with embedded questions:

(24) Lisi bu xiaode [ni daodi mai-bu-mai nei-ben shu].
   Lisi not know you truly buy-not-buy that-CL book
   ‘Lisi doesn’t know whether you truly want to buy that book.’

(25) ta xiang-zhidao [ni daodi qu-le nar].
   s/he wonders you truly go-PERF where
   ‘S/he wonders where the hell you have been.’
This property of being embeddable distinguishes daodi from nandao. This difference is not surprising, of course: it simply follows from the fact that while information questions may be direct or indirect questions, yes-no questions are always direct questions. A real difference does exist between them: when daodi occurs in an embedded clause, it may (like the question-constituent in the embedded clause) have matrix scope—thus marking the attitude of the external speaker:5

(26) Lisi shuo [ta daodi shenme shihou hui jia]?
    Lisi say he truly what time go home
    ‘When the hell did Lisi say that he will go home?’

Just as nandao must occur in a position c-commanding the focus of a yes-no question, in syntactic structure daodi must c-command the focus of an information question—the disjunctive or A-not-A constituent or the wh-constituent.

(27) a. daodi shei shi zheli de hai-qun-zhi-ma?
    truly who be here DE black-sheep
    ‘Who the hell is the black sheep here?’

b. *shei daodi shi zheli de hai-qun-zhi-ma?
    who truly be here DE black-sheep

In addition, although presupposed materials may appear before daodi, focalized and asserted material cannot:

(28) a. daodi you yi-ge ren mai-le shenme?
    truly exist one-CL person buy-PERF what
    ‘What the hell did someone buy?’

b. *you yi-ge ren daodi mai-le shenme?
    exist one-CL person truly buy-PERF what

(29) a. daodi ta weishenme lian yi-ben shu dou mai-bu-qi?
    truly s/he why even one-CL book all buy-not-up
    ‘Why the hell can’t s/he afford to buy a single book?’

b. *lian yi-ben shu daodi ta weishenme dou mai-bu-qi?
    Even one-CL book truly s/he why all buy-not-up

(30) a. ta daodi bu xiang mai shenme?
    s/he truly not want buy what
    ‘What the hell does s/he truly not want to buy?’

5 For further discussion of the syntax of daodi, see Kuo (1997) and Huang and Ochi (2004).
b. *ta bu daodi xiang mai shenme? 
s/he not truly want buy what

7.2. Disjunctive Questions

Chinese disjunctive questions are formed with two or more constituents conjoined by *haishi* ‘or’. There are a variety of constituent types that can enter into the formation of disjunctive questions:

(31) Zhangsan zai jiali shuijiao haishi Lisi zai gongsi shangban (S or S) 
Zhangsan at home sleep or Lisi at firm work
Is it that Zhangsan is sleeping at home or that Lisi is working at the firm?

(32) Zhangsan zai jiali shuijiao haishi zai gongsi shangban? (VP or VP)
Zhangsan at home sleep or at firm work 
Is Zhangsan sleeping at home or working at the firm?

(33) Zhangsan zai jiali haishi zai gongsi shangban? (PP or PP)
Zhangsan at home or at firm work
Does Zhangsan work at home or at the firm?

(34) Zhangsan haishi Lisi zai jiali shangban? (NP or NP)
Zhangsan or Lisi at home work
Does Zhangsan or Lisi work at home?

(35) Zhangsan xihuan haishi taoyan Lisi? (V or V)
Zhangsan like or detest Lisi

---

6 Chinese distinguishes *haishi* from *huoshi* and *huozhe* (all of which translate as ‘or’) in that while the first is used in disjunctive questions, the latter two are used in declaratives. So a more accurate translation of *haishi* would be ‘(whether) . . . or’, and of *huoshi* and *huozhe*, ‘(either) . . . or’. In other words, *haishi* is *huoshi* or *huozhe* plus [+wh]. Thus substitution of *haishi* with *huozhe* in each of (31)-(35) would result in a declarative, e.g.:

(i) Zhangsan huozhe Lisi zai jialie shangban.
   ‘Either Zhangsan or Lisi works at home.’

Sometimes, *haishi* and *huozhe* are interchangeable, as in (ii):

(ii) juzi haishi/huozhe pingguo dou xing.
    orange or/or apples all ok 
   ‘Either oranges or apples will do.’
   ‘Whether it’s oranges or apples, [both possibilities] will do.’

This is because the sentence can be analyzed in either way, as involving either a choice between NPs or a choice between two (concealed) embedded questions.
Does Zhangsan like or detest Lisi?

A disjunctive question may also be formed without the conjunction haishi. In the following examples, two phrasal constituents appear to be simply juxtaposed to each other, and each sentence is interpreted as a disjunctive question:

(36) ni jintian chi fan chi mian?
you today eat rice eat noodles
Would you like to eat rice or eat noodles today?

(37) ni mai biao xiu biao?
you sell watch repair watch
Do you sell watches or repair watches?

(38) ni xihuan Zhangsan xihuan Lisi?
you like Zhangsan like Lisi
Do you like Zhangsan or (do you) like Lisi?

(39) ni xihuan Zhangsan taoyan Zhangsan?
you like Zhangsan detest Zhangsan
Do you like Zhangsan or (do you) detest Zhangsan?

Such cases of ‘juxtaposed choice questions’ are not as freely constructed as the normal haishi-questions. Huang (1988, 1991) observed that the two alternatives being juxtaposed must retain certain degrees of phonetic or phonological similarity. Thus in both (36) and (38) the juxtaposed VPs contain the same verbs, and in both (37) and (39) the two VPs contain the same objects. Crucially, when both verbs and objects are different, a disjunctive question without haishi is ungrammatical:

(40) *ni mai shu xiu biao?
you sell book repair watch
‘Intended: Do you sell books or repair watches?’

(41) *ni xihuan Zhangsan taoyan Lisi?
you like Zhangsan detest Lisi
‘Intended: Do you like Zhangsan or detest Lisi?’

Sentences (40)-(41) are acceptable, but without haishi, each juxtaposed pair receives only a conjunctive declarative interpretation: ‘You sell books and repair watches, you like Zhangsan but dislike Lisi.’ The precise nature and reason for this partial identity requirement is not clear to us, and will not be dealt with here. But one thing that seems clear is that the identity is phonological/prosodic (or phono-syntactic?), but not semantic in nature. This is shown by the fact that the identity displayed in (39) cannot be satisfied by replacing the second occurrence of Zhangsan with a coreferential pronoun:

(42) *ni xihuan Zhangsan taoyan ta?
you like Zhangsan detest him
‘Intended: Do you like Zhangsan or (do you) dislike him?’

Most questions of this sort involve the juxtaposition of whole VPs (in part because of the need to repeat identical portions). For convenience we shall refer to these juxtaposed VP disjunctive questions as **VP VP Questions**, to be distinguished from the normal disjunctive questions with *haishi*.

### 7.3. A-not-A Questions

Typical disjunctive questions involve two choices A and B, in either the form \([A \text{ or } B]\) with *haishi*, or the form \([A \text{ and } B]\) without, as just indicated. If B is realized in the form of not-A, then we have either “A or not-A” questions as illustrated in (43), or “A-not-A” questions as illustrated in (44b-d).\(^7\)

\begin{align*}
\text{(43) a.} & \quad \text{Zhangsan mai shu haishi Zhangsan bu mai shu?} \\
& \quad \text{Zhangsan buy book or Zhangsan not buy book} \\
& \quad ‘\text{Does Zhangsan buy books or doesn’t he buy books?}’ \\

\text{b.} & \quad \text{Zhangsan mai shu haishi bu mai shu?} \\
& \quad \text{Zhangsan buy book or not buy book} \\
& \quad ‘\text{Does Zhangsan buy books or not buy books?}’ \\

\text{c.} & \quad \text{Zhangsan mai haishi bu mai shu?} \\
& \quad \text{Zhangsan buy or not buy book} \\
& \quad ‘\text{Does Zhangsan buy or not buy books?}’ \\

\text{d.} & \quad \text{Zhangsan mai shu haishi bu mai?} \\
& \quad \text{Zhangsan buy book or not buy} \\
& \quad ‘\text{Does Zhangsan buy books or not buy [them]?}’
\end{align*}

\begin{align*}
\text{(44) a.} & \quad ??\text{Zhangsan mai shu Zhangsan bu mai shu?} \\
& \quad \text{Zhangsan buy book Zhangsan not buy book} \\
& \quad ‘\text{Does Zhangsan buy books or doesn’t he buy books?}’ \\

\text{b.} & \quad \text{Zhangsan mai shu bu mai shu?} \\
& \quad \text{Zhangsan buy book not buy book} \\
& \quad ‘\text{Does Zhangsan buy books or not buy books?}’ \\

\text{c.} & \quad \text{Zhangsan mai bu mai shu?} \\
& \quad \text{Zhangsan buy not buy book} \\
& \quad ‘\text{Does Zhangsan buy or not buy books?}’ \\

\text{d.} & \quad \text{Zhangsan mai shu bu mai?}
\end{align*}

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\(^7\) As indicated in (44a), when the conjuncts are full sentences, *haishi* is required.
Zhangsan buy book not buy
‘Does Zhangsan buy books or not buy [them]?’

These examples show that these questions allow various degrees of reduction of their constituents. Early syntactic treatments, represented by Wang (1967), considered these various forms to belong to the same paradigm, being derived from the successive optional application of a deleting process. Thus (44) results from the omission of haishi. Furthermore, the various reduced forms result from the (successive) application of a single rule of Conjunction Deletion, which deletes one of two identical constituents in either (forward or backward) direction. For example, in (44b) and (44d) respectively, an identical subject and object are reduced under forward deletion, while in (44c) an identical object has been backward-deleted.

7.3.1. Three Types of A-not-A Questions

Huang (1988, 1991) argued for a ‘modular’ approach to these various reduced forms, against a ‘one-rule approach’ to the various reduced forms as had been followed since Wang (1967). In particular, he proposed (a) that the forms with haishi as in (43) and those without as in (44) should be treated differently in a proper synchronic grammar—the former as special instances of normal [A or B] questions, and the latter as ‘true’ A-not-A questions; and (b) two subtypes of A-not-A questions should be distinguished: the “V-not-VP” type and the “VP-not-V” type. The V-not-VP type is exemplified by (44c) in which the object is missing from the VP position preceding not, and the VP-not-V type is exemplified by (44d) in which the object is missing from the second VP. The following are further examples illustrating the V-not-VP vs. VP-not-V distinction:

(45) a. ta xihuan bu xihuan zhe-ben shu?  (V-not-VP)
s/he like not like this-CL book
‘Does s/he like or not like this book?’

b. ta xihuan zhe-ben shu bu xihuan?  (VP-not-V)
s/he like this-CL book not like
‘Does s/he like this book or not like [it]?’

(46) a. ni renshi bu renshi zhe-ge ren? (V-not-VP)
you know not know this-CL person
‘Do you know or not know this person?’

---

8 Even though they may very well have a historical relationship (as shown in Mei 1978).

9 More generally, Huang (1991) distinguished between the A-not-AB type and the AB-not-A type, where A, B are variables. The V-not-VP type is a case of A-not-AB (with A=V, and B=object of VP) and the AB-not-A type is a case of VP-not-V. As for the cases in (44a) and (44b), with S-not-S and VP-not-VP, Huang considered them to be analyzable as either A-not-AB or AB-not-A, with A=VP or S, and B=zero.
b. ni renshi zhe-ge ren bu renshi? (VP-not-V)
you know this-CL person not know
‘Do you know this person or not know [him]?’

In support of his first point, i.e., the need to distinguish between haishi questions and true A-not-A questions, Huang pointed out that the true A-not-A questions exhibit systematic island properties with respect to their distribution and interpretation, whereas haishi questions are free from island constraints. One property that A-not-A questions and haishi questions have in common is that they may occur in an embedded clause, from where they take either embedded scope (interpreted as indirect questions, as in (47)), or matrix scope (each interpreted as part of a direct question, as in (48)):

(47) a. Zhangsan bu xiaode [ni lai haishi bu lai].
Zhangsan not know you come or not come
‘Zhangsan does not know whether you will come or not.’

b. Zhangsan bu xiaode [ni lai bu lai].
Zhangsan not know you come not come
‘Zhangsan does not know whether you will come or not.’

(48) a. ni juede [ta hui haishi bu hui lai] (ne)?
you feel s/he will or not will come Q
‘Do you think s/he will come or not?’

b. ni juede [ta hui bu hui lai] (ne)?
you feel s/he will not will come Q
‘Do you think s/he will or will not come?’

However, when an A-not-A form is embedded in an island—such as a sentential subject or relative clause, a direct-question reading is not possible:

(49) *[ta lai bu lai] bijiao hao (ne)?
s/he come not come more good Q
Intended: ‘Is it better that s/he comes or that s/he doesn’t?’

(50) *ni bijiao xihuan [lai bu lai de nei-ge ren] (ne)?
you more like come not come DE that-CL person Q
Intended: ‘Do you prefer the person that will come or the one who will not?’

For such embedding to be possible, an indirect-question interpretation is required, as when the island clauses are selected by appropriate verbs or nouns:10

10 Wh-islands provide a less clear contrast between haishi and true A-not-A questions:

(i) ni xiang-zhidao [shei lai bu lai] (ne)?
you wonder who come not come Q
(51) [ta lai bu lai] yidiar dou mei guanxi. (*ne?)
    s/he come not come at-all all no matter
    ‘Whether s/he comes or not does not matter at all.’

(52) wo xiang taolun [ta lai bu lai de wenti]. (*ne)
    I want discuss s/he come not come DE question
    ‘I would like to discuss the question of whether s/he will come or not.’

By contrast, a haishi question in the context of (49) and (50) (as well as (51)-(52)) can readily be the focus of a direct question:

(53) [ta lai haishi bu lai] bijiao hao (ne)?
    s/he come or not come more good Q
    ‘Is it better that s/he comes or that s/he doesn’t?’

(54) ni bijiao xihuan [lai haishi bu lai de nei-ge ren] (ne)?
    you more like come or not come CL person Q
    ‘Do you prefer the person that will come or the one who will not?’

Note incidentally that the property of island sensitivity applies to all forms of the true A-not-A questions, whether it’s in the form of VP-not-VP, V-not-VP, or VP-not-V:

(55) a. *ni bijiao xihuan [mai shu bu mai shu de ren]? (VP-not-VP)
    you more like buy book not buy book DE person
    ‘Do you prefer people who buy books or [those who] don’t buy books?’

   b. *ni bijiao xihuan [mai bu mai shu de ren]? (V-not-VP)
    you more like buy not buy book DE person
    ‘Do you prefer people who buy or not buy books?’

    ‘Who is the x that you wonder whether x will come or not?’
    Not: ‘Do you wonder who will come or do you wonder who will not come?’

(ii) ni xiang-zhidao [shei lai haishi bu lai] (ne)?
    you wonder who come or not come Q
    ‘Who is the x that you wonder whether x will come or not?’
    ?*: ‘Do you wonder who will come or do you wonder who will not come?’

In both (ii) as in (i), the direct question reading on the choice question is hard to get. We submit that this is due to a competition between the non-objectual lai haishi bu lai and the referential shei. Once we reverse the situation as in (iii), it’s clear that a choice question is available:

(iii) ni xiang-zhidao [Zhang haishi Li weishenme mei lai] (ne)?
    you wonder Zhang or Li why not come Q
    ‘Which of the two, Zhang or Li, do you wonder why he didn’t come?’
c. *ni bijiao xihuan [mai shu bu mai de ren]?  
   you more like buy book not buy DE person  
   ‘Do you prefer people who buy books or [those who do] not?’

Even the VP VP questions of the sort illustrated in (36)-(39) exhibit island restrictions in contrast to their haishi-counterparts:

(56) ni bijiao xihuan [chi fan *(haishi) chi mian de ren]?  
   you more like eat rice or eat noodle DE person  
   ‘Do you prefer people who eat rice or [those who] eat noodles?’

McCawley (1994) provided an additional argument for distinguishing true A-not-A questions from those with haishi. He observed that when positive and negative items are conjoined by haishi, the order of these two conjuncts is free: both A haishi Not-A and Not-A haishi A are fine—just as both A haishi B and B haishi A are fine. However, a true A-not-A question strictly requires A to occur before Not A:

(57) a. ta daodi lai (haishi) bu lai?  
   he reach-bottm come (or) not come  
   ‘Let me get to the answer: will he come or not?’

   b. ta daodi bu lai *(haishi) lai?  
   he reach-bottm not come or come  
   ‘Let me get to the answer: will he not come or come?’

In short, haishi questions and true A-not-A questions differ with respect to their ability to escape syntactic islands and their ability to re-order their choice constituents.

In regard to his second point—the need to distinguish between V-not-VP and VP-not-V questions, Huang showed that they behave differently with respect to the Principle of Lexical Integrity (PLI) and the prohibition against P(repositon)-Stranding. In addition, Zhu (1991) cited dialectal considerations as further evidence for this distinction.

First, in V-not-VP questions the element preceding not may be something less than a word or zero-level category, whereas in VP-not-V questions the element following not must be no less than a full word:

(58) a. ta xi- bu xihuan zhe-ben shu?  
   s/he li- not like this-CL book  
   ‘Does s/he like or not like this book?’

   b. *ta xihuan zhe-ben shu bu xi-?  
   s/he like this-CL book not li-

(59) a. ni jintian gao- bu gaoxing?  
   you today hap- not happy  
   ‘Are you happy today or not?’
b. *ni jintian gaoxing bu gao- ?
you today happy not hap-

In (58a), what appears before bu ‘not’ is the first syllable of the verb xihuan ‘like’, and in (59a) it is the first syllable of gaoxing ‘happy’. As shown in the (b) sentences, such meaningless syllables are totally unacceptable in the position after not in VP-not-V questions. More examples illustrating this sharp contrast: ni ren- bu renshi zhe-ge ren? ‘Do you know the person or not?’ but *ni renshi zhe-ge ren bu ren- ?; ta you- bu youmo? ‘Is s/he humorous or not?’, but *ta youmo bu you- ?; etc.

Under the ‘one-rule approach’ (following Wang 1967), the V-not-VP is derived via backward deletion of the material following the V, and the VP-not-V is derived via forward deletion. The contrasts we see here indicate that these questions behave differently with respect to the Principle of Lexical Integrity (PLI), which prohibits phrase-level syntactic processes from affecting (e.g., extracting, deleting, etc.) any proper subpart of a word. In particular, backward deletion seems to freely violate the PLI by deleting the second syllable of xihuan ‘like’, gaoxing ‘happy’, renshi ‘know’, youmo ‘be humorous’, etc. to produce V-not-VP questions, but forward deletion is not allowed to do so in forming VP-not-V questions. The prohibition against P-Stranding is generally understood as a filter against a preposition taking an empty category as its object: *P [e] (see e.g., Hornstein and Weinberg 1981). The following examples illustrate its relevance to Chinese:

(60) a. nei-ben shu, wo zhongyu ba *(ta) kanwan le.
that-CL book I finally BA it finish ASP
‘That book, I have finally finished it.’

b. Bosidun Nanzhan, women mingtian jiu cong *(nar) chufa.
Boston South-Station we tomorrow then from there depart
‘Boston South Station, we shall then depart from *(there) tomorrow.’

However, under the deletion approach, V-not-VP questions seem to systematically allow P-stranding, while this is again impossible with VP-not-V questions.

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11 See Huang (1984) for more discussion in relation to the PLI.

12 Zhu (1991), in discussing Huang (1988), pointed out that many Beijing speakers would accept apparent P-Stranding cases like the following:

(i) ni gen ta shuo hua bu gen?
you with him/her speak word not with
‘Do you speak with him/her or not?’

(ii) ni gei ta song qian bu gei?
you to him/her send money not to
‘Would you send money to him/her or not?’
(61)  a.   ni ba bu ba nei-ben shu jie gei wo?  
you BA not BA that-CL book lend to me  
‘Will you lend the book to me or not?’

b. *ni ba nei-ben shu jie gei wo bu ba?  
you BA that-CL book lend to me not BA

(62)  a.   nimen mingtian cong bu cong Nanzhan chufa?  
you tomorrow from not from South-Station depart  
‘Will you depart from South Station tomorrow or not?’

b. *nimen mingtian cong Nanzhan chufa bu cong?  
you tomorrow from South-Station depart not from  
‘Will you depart from South Station tomorrow or not?’

Zhu (1991) provided an additional argument in support of Huang’s distinction between V-not-VP and VP-not-V questions. Based on extensive survey, Zhu (1991) pointed out that while the VP-not-V questions are common among the northern dialects of Chinese, V-not-VP questions are primarily innovations of the southern dialects. For example, in the speech of elder Beijing speakers, A-not-A questions are overwhelmingly VP-not-VP or VP-not-V. Furthermore, in Huojia, Luoyang, Kaifeng VP-not-VP and VP-not-V forms are used to the exclusion of V-not-VP. As for the V-not-VP questions, they are found in abundance in dialects and sub-dialects of the Yue, Wu, Min and Kejia groups, all of southern China.

In short, three types of so-called A-not-A questions can be distinguished based on their different behaviors: the normal *haishi* questions that happen to have A and Not-A as their choices, the true A-not-A questions of the form V-not-VP, and those of the form VP-not-V.13

7.3.2. A-not-A Questions: A Modular Approach

Based on the above and other considerations in Huang (1988, 1991), McCawley (1994) and Zhu (1991), we adopt a modular approach to the paradigm in (43)-(44). To

These in fact also sound better to us than the examples with stranded *ba* and *cong*. It seems that the discrepancies arise because some prepositions which have historically derived from verbs have retained their verbal status to varying degrees, and so it is not impossible to treat them as having the status of an auxiliary or a light verb.

13 The PLI and the prohibition against P-Stranding are irrelevant to the VP-not-VP questions (e.g., (44b)) and VP-VP questions (e.g., (36)). Based on cursory observations, those who prefer the V-not-VP form generally also do so over the VP-not-VP form. We shall take the VP-not-VP type to be in closer affinity to the VP-not-V type.
derive the various sentence types, it is assumed that three grammatical processes may be involved: (a) Conjunction Reduction, (b) Anaphoric Ellipsis, and (c) Reduplication.

First of all, we assume that *haishi* questions are derived from full-size, bi-clausal underlying sources (as in (43a) repeated below), and shorter forms such as (43b-d) are obtained via one of two deletion processes:

(43) a. Zhangsan mai shu haishi Zhangsan bu mai shu?
    Zhangsan buy book or Zhangsan not buy book
    ‘Does Zhangsan buy books or doesn’t he buy books?’

b. Zhangsan mai shu haishi bu mai shu?
    Zhangsan buy book or not buy book
    ‘Does Zhangsan buy books or not buy books?’

c. Zhangsan mai haishi bu mai shu?
    Zhangsan buy or not buy book
    ‘Does Zhangsan buy or not buy books?’

d. Zhangsan mai shu haishi bu mai?
    Zhangsan buy book or not buy
    ‘Does Zhangsan buy books or not buy [them]?’

In particular, to the full-form source (43a), Conjunction Reduction (CR) applies forward and deletes the second occurrence of *Zhangsan* to give (43b). A further application of CR to (43b) operates backward to delete the first occurrence of *shu* ‘book’, giving (43c). We assume following Ross (1967) that CR is subject to a Directionality Constraint that prevents it from applying in the forward direction to produce (43d).14 We claim that the process responsible for producing (43d) is Anaphoric Ellipsis (AE), which applies forward to delete the object *shu* ‘book’ from the second conjunct.

Both CR and AE are independent existing mechanisms in UG and in Chinese grammar. CR also derives reduced [A *haishi* B] questions like (32)-(35) above, as well as other reduced coordinate structures involving *and, or, but*, etc. AE is observed not only in coordinate structures (where deletion invariably applies forward), but also in other contexts:

(63) ruguo ni xiang kan zhe-ben shu, wo jiu song gei ni.

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14 As first shown by Ross (1967), CR obeys a Directionality Constraint (DC) such that deletion applies forward if identical elements occur on a left branch, but backward if identical elements occur on a right branch. Thus given the underlying source *John sang and John danced* where the identical subjects occur on a left branch of a tree, deletion applies forward to give *John sang and danced* (see also (43b) above). And for a conjoined VP like [*cooked the noodles and ate the noodles*] where the identical objects occur on a right branch, deletion applies backward to give *cooked and ate the noodles* (see also (43c)).
if you want to read this book, I will give it to you.
‘If you want to read this book, I will give [it] to you.’

(64) ruguo ni xiang kan, I jiu ba zhe-ben shu song gei ni.
if you want to read I then BA this-CL book give to you
‘If you want to read [it], I will give the book to you.’

While CR is subject to a directionality constraint, AE obeys general conditions of
anaphora (like pronominal binding and VP ellipsis, involving notions such as c-command
and precedence). The independent existence of CR and AE means that they not incur
extra cost to our description of A-not-A questions.¹⁵

For the VP-not-V questions, we claim that they are derived by Anaphoric Ellipsis
from base-generated VP-not-VP questions, much as (43d) is an elliptical form of (43b)
We assume that a mechanism exists to base-generate a coordinate [[VP] [Not VP]]
structure joined by a null haishi with appropriate formal features (e.g., +Q and +A-not-
A), the latter ensuring that the choices must occur in the order A > Not A but not vice
versa. This mechanism gives rise to the VP-not-VP question (44b). Anaphoric Ellipsis
applied to (44b) gives (44d):

(44) b. Zhangsan mai shu bu mai shu?
Zhangsan buy book not buy book
‘Does Zhangsan buy books or not buy books?’

c. Zhangsan mai bu mai shu?
Zhangsan buy not buy book
‘Does Zhangsan buy or not buy books?’

d. Zhangsan mai shu bu mai?
Zhangsan buy book not buy
‘Does Zhangsan buy books or not buy [them]?’

As for V-not-VP questions like (44c) and especially¹⁶ examples like the following
(repeated from (58a)-(59a), and (61a)-(62a)), we claim that they are not the results of
deletion, but of reduplication.

¹⁵ One possible alternative to CR is to assume that the relevant reduced coordinate
structures are generated in the base by a general rule schema that generates coordinate
structures of various sorts (either by the traditional XP → XP Conj. XP; X → X Conj. X;
etc., or possibly along the lines of Munn (1993) and Zoerner (1995), according to which
the coordinate structure is projected from the conjunction as its head). In this alternative,
there would not be a process of CR. There are some minor negative consequences in
taking this alternative, but we shall not go into them.

¹⁶ We say ‘especially’ those examples that seem to violate the PLI but allow P-stranding,
because V-not-VP forms in which V is a full verb (e.g., (43c)) may have the alternative
More specifically, we propose that for each of (65)-(68), the underlying source is a simplex sentence with an interrogative functional head, located in the same position where one would find the negation head of a negative sentence, as follows:

(69)  
```
         IP
          /\   
         /   \ 
        NP   Q
           /   /\  
          /   /  
         NP   VP
             /  /\  
            /  /  
           V   NP
             |
      ni   xihuan  zhe-ben shu
     you     like      this-CL book
```

The Q is realized morphologically in the following way: it first reduplicates an initial portion of the VP constituent and, second, turns the second of the identical parts into its appropriate negative form. If the full verb *xihuan* is reduplicated, we have [*xihuan bu-xihuan*] (as in (45a)). If only the initial syllable of *xihuan* is reduplicated, we have [*xi bu-xi*] (as in (65)). And if the reduplicated portion is a preposition, we get forms like *ba-bu-ba*, *cong-bu-cong*, etc. (as in (67)-(68)). What form the negative part will take depends on the aspectual property of the verbal element. Thus if the verb is an accomplishment verb like *kanjian* ‘see’ or *kandong* ‘read-understand’, the negative would take the form *mei* of being derived via (backward) Conjunction Reduction from VP-not-VP sources like (44b).
(instead of *bu*): *kan-mei-kanjian*, *kanjian-mei-kanjian* ‘see-not-see’; *kan-mei-kandong*, *kandong-mei-kandong* ‘understand-not-understand (from reading)’

(70)  
\[\begin{align*}
\text{a. } & \text{ni kan(jian)-mei-kanjian Lisi?} \\
& \text{you see-not-see Lisi} \\
& \text{‘Did you see Lisi or not?’}
\end{align*}\]

\[\begin{align*}
\text{b. } & \text{ni kan(dong)-mei-kandong zhe-pian wenzhang?} \\
& \text{you understand-not-understand this-CL article} \\
& \text{‘Have you understood this article or not?’}
\end{align*}\]

And with a potential verb, we get results like *kandedong-kanbudong*:

(71) \[\begin{align*}
\text{ni kandedong kanbudong zhe-ben shu?} \\
& \text{you can-understand cannot-understand this-CL book} \\
& \text{‘Can you understand this book or not?’}
\end{align*}\]

Summarizing, in our treatment of Chinese disjunctive questions, we have distinguished between *haishi*-questions and true A-not-A questions, and among the latter we have distinguished between a V-not-VP and a VP-not-V type of questions. The *haishi*-questions have a bi-clausal (or multi-clausal) source, and various reduced *haishi*-questions may be obtained by Conjunction Reduction or Anaphoric Ellipsis. The true A-not-A questions may have two sources: (a) a base-generated coordinate VP (in [VP (not)-VP] form) headed by abstract conjunction with disjunctive semantics, whose second conjunct VP may be optionally reduced by Anaphoric Ellipsis; and (b) a simplex VP preceded by an interrogative functional head, which is morphologically realized by reduplication. We observed that these three question forms exhibited different behaviors. Given the analyses described here, we are ready to derive their differences.\(^{17}\)

\(^{17}\) Given the analyses here, ambiguities exist as to the derivational source of certain forms. For example, when a VP consists solely of an intransitive verb (*lai*, *gaoxing*, etc.), the question (*lai bu lai*, *gaoxing bu gaoxing*) may be derived from a base-generated coordinate VP or via morphological reduplication (though the form *gao- bu gaoxing* can only be derived by reduplication). We see no empirical consequence in this ambiguity. Another potential case of derivational ambiguity exists in the derivation of V-not-VP sentences where the initial V is a full verb (e.g., *xihuan bu xihuan zhe-ben shu*). Instead of reduplication, one might propose that it could originate as a base-generated coordinate VP but was reduced by Conjunction Reduction. We again see no major empirical consequence here. As a third potential case, one might wonder whether one could drive the VP-not-V questions by reduplicating an entire VP (thus base-generating all A-not-A questions with a simplex VP source), followed by Anaphoric Ellipsis. We rule out this possibility, however, for the reason that we take reduplication to be a morphological process, which cannot reduplicate phrasal categories nor be followed by syntactic deletion processes. Hence, we assume that the reduplicative process only generates V-not-VP questions where V is a full verb or less than a full verb.
7.3.3. Explaining the Differences

One major difference between haishi-questions and true A-not-A questions we observed was that the true A-not-A questions, but not the haishi-questions, exhibit a full range of island effects. Again following Huang (1991), we explain this difference by the hypothesis that while the haishi-questions have bi-clausal sources that give their underlying semantics and certain reduction processes (CR and AE) that derive their various surface forms, the true A-not-A questions are base-generated with an “A-not-A constituent” (an interrogative coordinate VP or an interrogative functional head) which is subject to LF interpretation for the assignment of its scope. Following an LF movement approach (to be discussed in more detail in conjunction with wh-questions below), we may assume that the A-not-A constituent moves to an appropriate position in CP at LF, both to check its interrogative feature and to mark its scope. The question (72a) has (72b) as its LF representation:

(72) a. [CP [IP ni gaoxing bu gaoxing] (ne)]? you happy not happy Q

b. [CP [VP gaoxing-bu-gaoxing] [IP ni tVP] (ne)]
   happy-not-happy you Q

The A-not-A constituent gaoxing-bu-gaoxing is then taken as a (non-objectual) quantifier ranging over two VP meanings, \{happy, not happy\}:

c. For which x, x ∈ \{gaoxing, bu-gaoxing\}, (ni x )

And the V-not-VP question ni gao-bu-gaoxing ‘you hap-not-happy’, with the underlying structure (73a), will be represented as in (73b) and interpreted as in (73c):

(73) a. [CP [IP ni Q[A-not-A] gaoxing]]

b. [CP Q[A-not-A] [IP ni t[A-not-A] gaoxing]]

c. For which x, x ∈ \{affirmative, negative\}, (ni x gaoxing)

We noted earlier that an A-not-A constituent may occur in a complement clause, but interpreted as having either embedded scope (for an indirect A-not-A question) or matrix scope (for a direct A-not-A question):

(74) wo bu zhidao [ta xi-bu-xihuan ni] (*ne)
   I not know [s/he li-not-like you] Q
   ‘I don’t know whether s/he likes you or not.’

(75) ni juede [ta xi-bu-xihuan ni] (ne)?

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18 We shall discuss possible non-movement approaches below.
you feel s/he li-not-like you Q
‘Do you think s/he likes you, or (do you think s/he does) not?'

The LF-movement hypothesis derives these two readings by raising the A-not-A constituent to the embedded or the matrix CP as determined by the matrix selecting verb. The movement hypothesis also explains why the A-not-A constituent cannot occur in an island and be interpreted as having matrix scope:

(76) a. [ta gao-bu-gaoxing] bu zhongyao.
s/he hap-not-happy not important
‘Whether s/he is happy or not is not important.’

b. *[ta gao-bu-gaoxing] bijiao hao?
s/he hap-not-happy more good
Intended: ‘Is it better that s/he is happy, or that s/he is not?’

(77) a. wo zai taolun [ta gao-bu-gaoxing de wenti]
I at discuss s/he hap-not-happy DE question
‘I am discussing the question of whether s/he is happy or not.’

b. *nimen zai taolun [gao-bu-gaoxing de nei-ge ren]?
you at discuss hap-not-happy DE that-CL person
Intended: ‘Are you discussing the person who is happy or the one who isn’t?’

(78) ni xiang-zhidao [shei gao-bu-gaoxing]?
you wonder who hap-not-happy
a. Ok: Who is the person x such that you are wondering whether x is happy or not?
b. Not: Are you wondering who is happy or are you wondering who is unhappy?

Assuming that movement leaves a trace, the ungrammatical cases can be attributed to the Empty Category Principle (ECP) of Chomsky (1981), which requires a trace to be properly governed. For the trace of an A-not-A constituent to be properly governed, the A-not-A constituent cannot be moved out of an island. The following configuration is ruled out by the ECP:

(79) *[A-not-A]_i . . . [island . . . t_i . . . ] . . .

This pattern of ungrammaticality mirrors that of wh-questions with adjunct wh-phrases like ‘why’ or ‘how’, to be discussed in more detail in the following section:

(80) a. wo bu zhidao [ta weishenme chidao].
I not know s/he why late-come
‘I don’t know why s/he arrived late.’

b. ni xiang [ta weishenme chidao]?
you think s/he why late-come
‘Why do you think [s/he was late t]?’

(81) a. [ta weishenme chidao] bu zhongyao.
s/he why late not important
‘Why s/he was late is not important.’

b. *[ta weishenme chidao] bijiao hao?
s/he why late more good

(82) a. wo zai taolun [ta weishenme chidao de wenti]
I at discuss s/he why late DE question
‘I am discussing the question of whether s/he was late.’

b. ?nimen zai taolun [weishenme chidao de nei-ge ren]?
you at discuss why late DE that-CL person
Intended: ‘Are you discussing the person who was late why?’

(83) ni xiang-zhidao [shei weishenme chidao]?
you wonder who why late
a. Who is the person x such that you are wondering why x was late?
b. Not: What is the reason x such that you are wondering who was late for x?

In our analysis, then, a true A-not-A question is treated as a constituent question on a par with other constituent questions like why-questions: they are both subject to LF movement whose outputs are constrained by the ECP. On the other hand, the haishi questions have full bi-clausal underlying sources which may be reduced by a deletion process (CR or AE). Their interpretation does not involve movement, and is therefore not subject to the ECP.19

Turning now to the differences between VP-not-V and V-not-VP questions, recall that the latter, but not the former, seem to (a) violate Lexical Integrity, and (b) allow P-stranding. Here, it is useful to note that the haishi-questions behave along with VP-not-V questions in both respects: they respect the PLI and disallow P-Stranding. There is also a third difference between VP-not-V and V-not-VP: (c) that they distribute differently among different dialects groups. We can now see that these differences directly follow from the hypothesis that while VP-not-V questions are derived via Ellipsis, V-not-VP questions are formed by a morphological process of reduplication.

First, the mere fact that they are treated as having different derivation sources makes their difference in dialect distribution a natural consequence rather than a mystery. According to Zhu (1991), the V-not-VP questions are primarily an innovation of the southern dialects. It has also been pointed out that some dialects also employ questions formed with a preverbal particle, ke in Mandarin, kam in Taiwanese, a in Shanghai, etc.

19 We speculate that the omission of haishi is compensated by the creation of a null or with a formal feature that makes movement necessary, and one that ensures the correct order A > Not A as observed by McCawley (1994).
Now, in some dialects that use such particles, a single sentence may be found within a VP-not-V sentence (i.e., *ke VP not V?*), but never found within a V-not-VP type (i.e., *ke V-not-VP?). In other words, *ke* particle is mutually exclusive with the V-not-V constituent of a V-not-VP question. This fact may be naturally captured by our analysis of V-not-VP questions as being derived from the morphological realization of a preverbal Q-morpheme. According to our analysis, the Q morpheme may be either realized with a Q-particle, or by morphological reduplication, but not both. But a preverbal Q-particle is in principle not incompatible with a VP-not-V question.

What about the difference with respect to Lexical Integrity? This comes from the fact that while Anaphoric Ellipsis (and Conjunction Reduction for *haishi*-questions) is a syntactic, post-lexical phenomenon, the proposed reduplication is a morphological, pre-lexical phenomenon. The PLI is a principle that governs syntactic and perhaps also post-syntactic operations. But a morphological process, by its very nature, is not subject to the PLI. In fact, it is in the nature of a morphological process that it affects parts of a word.

Finally, the difference with respect to P-Stranding also follows straightforwardly. Both CR and AE are deletion processes that produce empty categories, the result of deleting an object of a preposition would be a case P-Stranding. However, since V-not-VP questions are formed by reduplication, giving *ba-bu-ba*, *cong-bu-cong*, etc., no empty category is created, and no P-Stranding ever occurs. Q.E.D.

### 7.3.4. VP-neg Questions

In addition to the VP-not-VP, VP-not-V, and V-not-VP questions, another alternative question form has been identified in the recent literature (see Zhang 1990, Zhu 1991, and Cheng, et al 1996), as illustrated below:

(84) a. ta mai shu bu?
   s/he buy  book not
   ‘Does s/he buy books or not?’

   b. ni chi-le fan mei?
   you eat-PERF rice not
   ‘Have you eaten or not?’

These questions have been termed “VP-neg” questions following Zhang (1990) and Zhu (1991). Both questions (84a) and (84b) end with a negative morpheme. It is tempting

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20 A question ending with *meiyou* as in (i) has sometimes also been considered VP-neg questions:

(i) ni chi-le fan meiyou?
   you eat-PERF rice not-have
   ‘Have you eaten or not?’

However, there is some controversy as to whether this is really a VP-neg question. Some speakers have different judgments with respect to the three properties noted in the text.
to think of these forms as further elided forms of VP-not-V questions. While this may well have been the case in historical terms, it is important to note that the VP-neg questions differ from normal VP-not-V questions in important ways. For one thing, the VP-neg questions can only be formed as direct, matrix questions. Unlike the normal VP-not-V questions, they cannot occur in embedded clauses:

(85) a. *wo bu xiaode [ta mai shu bu].  
I not know s/he buy book not  
Intended: ‘I don’t know if s/he buy books or not.’

b. *[ta mai shu bu] bu zhongyao.  
s/he buy book not not important  
Intended: ‘Whether s/he buys books or not is not important.’

c. *women lai taolun [ta mai shu bu] de wenti.  
we come discuss s/he buy book not DE problem  
Intended: ‘Let us discuss the question of whether s/he buys books or not.’

For another, although normal VP-not-V questions may optionally be followed by the Q-particle ne, the VP-neg questions cannot:

(86) a. *ta mai shu bu ne?  
s/he buy book not Q

b. *ni chi-le fan mei ne?  
you eat-PERF rice not Q

These two facts can be jointly accounted for if we say that the VP-neg is not an A-not-A alternative question, but a particle question: the negative morphemes bu and mei are in fact Q-particles themselves occupying C of CP, rather than the negation found with the negative conjunct of an A-not-A question. This move immediately explains why VP-neg questions cannot take the Q-particle ne (because the C is already occupied by Neg). Given that Chinese Q-particles are not permitted in embedded clauses, the ungrammaticality of (85) also follows straightforwardly. A further fact in support of this move is that the examples in (84) are naturally uttered with the intonation pattern of a particle question.

This analysis of the Neg in VP-neg questions as a Q-particle amounts to treating VP-neg questions on a par with the yes-no questions with the particle ma. While this is the case at the surface syntax, it is still important to keep the following in mind. First, a VP-neg question is not a yes-no question, as it still retains the syntax, semantics, and pragmatics of an A-not-A choice question. For example, a VP-neg question is strictly neutral with respect to the answers expected of the addressee, and cannot accept short

We shall not deal with this here. For some discussion, see Hsieh (2001) and Hagstrom (2004).
answers like *shide ‘yes’. In addition, a VP-neg question may occur with *daodi ‘to the bottom, truly’ but not *nandao ‘is it really the case that’:

(87)  
\[ \begin{align*}
\text{(a)} & \quad \text{ni daodi/*nandao chi-le fan mei?} \\
& \hspace{1cm} \text{you truly/really eat-PERF rice not} \\
& \hspace{1cm} \text{‘Let me get to the truth, have you eaten or not?’} \\
\text{(b)} & \quad \text{ni *daodi/nandao yijing chiguo-le ma?} \\
& \hspace{1cm} \text{you truly/really already eat-EXP-PERF Q} \\
& \hspace{1cm} \text{‘Is it actually the case that you have eaten?’}
\end{align*} \]

A third fact concerning the VP-neg questions is that the morphological form of the negation morpheme (*bu or mei) is clearly determined by, or agrees with, the main verb in terms of its aspectuality class. This is different from normal Q-particles (*ma, ne), which have invariable forms. This leads us back to the possibility that Neg occurs within the main predicate, but not in C.

To solve this paradox we follow the hypothesis made in Cheng et al (1996) that the Neg of a VP-neg question originates in the IP fundamentally but ends up in C on the surface. One way to execute this idea is that a preverbal Neg, triggered by an [+A-not-A] feature, moves to C. This might be seen as an alternative to the reduplication process. Another possibility is that the VP-neg form derives from the VP-not-V form in the following way: first, Anaphoric Ellipsis deletes the final V, but this results in Neg-Stranding, presumably an acceptable result.\(^{21}\) To remedy this situation, the entire structure may be restructured so that Neg now comes under C: \([_{\text{CP}} {_{\text{IP}}} \ldots \text{VP neg}] \rightarrow [_{\text{CP}} {_{\text{IP}}} \ldots \text{VP}] \text{ neg}\) (or the stranded Neg moves into CP, being driven by a relevant formal feature at the time the final V deletes). As a result, Neg acquires the dual status of being a predicate-internal element and a Q-particle.\(^{22}\)

7.3.5. Summary

We conclude therefore that there are several ways to form an alternative question with the semantics of an A-not-A question: (a) as a special case of a disjunctive question with *haishi, (b) by base-generating a VP-not-VP constituent, (c) by reduplication, and (d) by moving Neg to C. These represent all the three general types of questions Chinese has: Type (a) is treated as an alternative question, type (d) as a particle question, while

\(^{21}\) Cf. John saw Mary, but Bill *(did) not.

\(^{22}\) Although either way to derive the VP-neg questions seems to work fine for the synchronic grammar, it has been pointed out that the VP-neg questions existed historically long before VP-not-V and V-not-VP questions were attested in most available written texts. This might be taken as an argument against deriving VP-neg from the newer forms. However, Zhu (1991) also indicated that in some newly excavated documents dated to Qin or pre-Qin periods, VP-not-VP and VP-not-V forms were already attested, though for unknown reasons these forms failed to be recorded in later texts until a whole thousand years later.
types (b) and (c) are treated as constituent questions whose A-not-A constituents are subject to scope interpretation in LF. Both the *haishi* and the VP-not-VP questions may obtain various reduced forms through independent reduction processes (CR and/or AE), which obey general constraints concerning directionality, anaphora, lexical integrity, and P-stranding. The reduplicative A-not-A questions do not result from a reduction process, but has a simplex sentence source. The VP-neg question is either formed as an alternative to the reduplicative question, or is the result of changes that circumvent Neg-stranding.

The syntax of A-not-A question in Chinese continues to be an area of great interest with interesting consequences both for Chinese syntax and for general syntactic theory. The views expressed above have been taken up or scrutinized by many other scholars, including Cole and Lee (1997), Ernst (1994), Hsieh (2001), Wu (1997), and Zhang (1997). For the latest discussions on the subject, see Hagstrom (2004), Gasde (2004), Law (2004), and the references cited there.

### 7.4. Wh-questions

A question may be formed by the use of an interrogative *wh*-phrase such as *shei* ‘who’, *shenme* ‘what’, *shenme shihou* ‘when, what time’, *nar* ‘where’, *zenme* ‘how’, *weiishenme* ‘why’, *na-ge ren* ‘which person’, *na-ge difang* ‘which place’, etc. One of the most important (and familiar) typological features of Chinese *wh*-questions is that, whereas many other languages (e.g., English) form their *wh*-questions by moving a *wh*-word or phrase to a clause-initial position, Chinese *wh*-questions are formed by leaving such interrogative constituents *in situ* (in their underlying, clause-internal position). English is a *wh*-movement language and Chinese a *wh*-in-situ language:

\[(88)\]  
a. Who did John see?  
b. What does he like?

\[(89)\]  
a. Zhangsan kanjian-le shei?  
Zhangsan see-PERF who  
‘Who did Zhangsan see?’

b. ta xihuan shenme?  
s/he like what  
‘What do s/he like?’

### 7.4.1. A Movement Approach to *wh*-in-situ

The phenomenon of *wh*-movement has been a central topic of research since the earliest days of generative grammatical studies, and research on *wh*-questions (in those languages employing *wh*-movement) has formed the basis of important theoretical constructs and principles that characterize generative syntactic theory as we know it. However, because Chinese *wh*-questions do not involve a movement process, the syntax of Chinese *wh*-questions seemed to fall outside of general interest and played little role in the development of early generative theory of syntax.
Huang (1982a, 1982b) argued that that need not have been the case, and that Chinese *wh*-questions offered rich insights for the theory of movement, sometimes in ways that are otherwise less observable in *wh*-movement languages. Huang proposed that while Chinese does not move its *wh*-phrases in overt Syntax, it employs a covert movement process in the interpretive component Logical Form (LF), by which a *wh*-in-situ phrase is moved to an appropriate clause-peripheral position (e.g., Spec of CP) in a way similar to overt *wh*-movement in English. Thus the LF representation of (301a) would be as in (302):

(90) \([\text{shei}_i [\text{Zhangsan kanjian-le \ t}_i]]?\)

Who Zhangsan see-PERF

Huang provided a number of arguments for this LF movement hypothesis by highlighting certain hidden similarities between Chinese-type and English-type *wh*-questions. One argument turns on the requirement of selection in syntax. Consider the following:

(91) a. What does John think Mary bought t ?
   b. *John thinks what Mary bought t.

(92) a. *What does John wonder Mary bought t ?
   b. John wonders what Mary bought t .

(93) a. What does John remember Mary bought t ?
   b. John remembers what Mary bought t.

The preposed *wh*-phrases in these sentences all originate as the object of the verb in the embedded clause:

(94) John thinks Mary bought what

(95) John wonders Mary bought what

(96) John remembers Mary bought what

However, the verb *think* in (94) cannot have a question as its complement and the verb *wonder* in (95) must select a question as its complement. The verb *remember* in (96) can select either a question or a statement as its complement. These selection properties are reflected in where the *wh*-phrases can and cannot occur, as illustrated in (91)-(93).

The process of *wh*-movement not only captures selection properties; it also provides for a quantificational schema suitable for interpretation. A question such as (93a) or (93b) has the interpretation as indicated below, which is straightforwardly represented by the position of the preposed *wh*-phrase.

(97) a. \([[\text{for which } x: x \text{ a thing}] [\text{John remembers Mary bought } x]]?\)
   b. [John remembers [[for which } x: x \text{ a thing}] Mary bought x]]?
Since Chinese *wh*-questions keep their *wh*-phrases in situ, their surface forms correspond to (94)-(96) but not (91)-(93).

(98)  Zhangsan yiwei Lisi mai-le shenme?
     Zhangsan thinks Lisi bought what
     'What does Zhangsan think Lisi bought?'

(99)  Zhangsan xiang-zhidao Lisi mai-le shenme.
     Zhangsan wonder Lisi bought what
     'Zhangsan wonders what Lisi bought.'

(100) Zhangsan jide zhida Lisi mai-le shenme(?)
     Zhangsan remember Lisi bought what
     'What does Zhangsan remember Lisi bought?'

Despite their similar appearance, (98)-(100) are interpreted very differently. (98) must be interpreted as a direct question to which an answer is needed, and (99) as a statement containing an embedded question, while (100) may be interpreted in either way. These restrictions are clearly the same ones just observed with the English sentences (91)-(93). The only difference is that whereas the restrictions are observed as a matter of form (i.e., grammaticality) in English, they present themselves as a matter of interpretation (e.g., presence vs. absence of ambiguity) in Chinese. A unified account is available if it is assumed that *wh*-phrases in Chinese-type languages, even though they do not move in overt syntax, nevertheless undergo covert movement in LF. Assuming that *wh*-phrases undergo movement in LF as they do in overt syntax, the structures below may be derived from (98)-(100).

(101)  a.  [shenme, [Zhangsan yiwei [[Lisi mai-le t1]]]]?
          For which x: x a thing, Zhangsan thinks Lisi bought x?

     b.  *[Zhangsan yiwei [shenme, [Lisi mai-le t1]]]?
          Zhangsan thinks [for which x: x a thing, Lisi bought x].

(102)  a.  *[shenme, [Zhangsan xiang-zhidao [[Lisi mai-le t1]]]]?
          For which x: x a thing, Zhangsan wonders Lisi bought

     b.  [[Zhangsan xiang-zhidao [shenme, [Lisi mai-le t1]]]]?
          Zhangsan wonders [for which x: x a thing, Lisi bought x].

(103)  a.  [shenme, [Zhangsan jide [[Lisi mai-le t1]]]]?
          For which x: x a thing, Zhangsan remembers Lisi bought t?

     b.  [[Zhangsan jide [shenme, [Lisi mai-le t1]]]]?
          Zhangsan remembers [for which x: x a thing, Lisi bought x].
The non-ambiguity of (98) and (99) follows because they each correspond to only one LF representation that satisfies the selectional requirements of their matrix verbs. In particular, just as (91b) and (92a) are ungrammatical S-Structure representations, (101b) and (102a) are ruled out as ill-formed LF representations that fail to satisfy the selectional requirements of their main verbs. The similarities with respect to selection and interpretation of \( wh \) questions between English and Chinese follow from the application of the same \( wh \)-movement process, although one is overt and the other is covert.

A second, perhaps more important, argument turns on the fact that the distribution and interpretation of \( wh \)-questions in Chinese exhibit certain restrictions that are typically associated with movement processes. Particularly relevant is the syntax of questions involving adjunct \( wh \)-phrases. Huang (1982a, b) showed that, in English, when an adjunct \( wh \)-phrase is extracted out of a syntactic island to form a direct question, such as a relative clause (104), an adjunct clause (105) and a sentential subject (106), severe ungrammaticality results.

\[
(104) \quad \text{*How_i do you like [the man who fixed the car t_i]?}
\]
\[
(105) \quad \text{*How_i did you feel satisfied [after he fixed the car t_i]?}
\]
\[
(106) \quad \text{*How_i would [for him to fix the car t_i] be nice?}
\]

In Chinese, a sentence with an adjunct \( wh \)-phrase like \textit{weishenme} ‘why’ inside a syntactic island cannot be used to form a direct question about the adjunct:

\[
(107) \quad \text{*ni zui xihuan [weishenme mai shu de ren]?
you most like why buy book De person 'Why do you like [the man who bought the books t]?'}
\]
\[
(108) \quad \text{*ta [zai Lisi weishenme mai shu yihou] shengqi le?
he at Lisi why buy book after angry Le 'Why did he get angry [after Lisi bought the books t?]'}
\]
\[
(109) \quad \text{*[wo weishenme mai shu] zui hao?
I why buy book most good 'Why is [that I buy the books t] best?'}
\]

A similar point can be made with an observed argument/adjunct asymmetry under extraction from within an indirect question (a \( wh \)-island). As illustrated in (110) and (111), it is substantially more difficult to move an adjunct out of a \( wh \)-island than it is to move an argument.

\[
(110) \quad \text{??What_i did you wonder [how to fix t_i]?}
\]
\[
(111) \quad \text{*How_i did you wonder [what to fix t_i]?}
\]
In Chinese, although *wh*-phrases apparently do not move, we see a similar argument/adjunct asymmetry as illustrated below:  

(112)  

ni xiang-zhidao [wo weishenme mai shenme]?

you wonder I why buy what

a. 'What is the x such that you wonder why I bought x?'
b. Not:  'What is the reason x such that you wonder what I bought for x?'

In particular, with the two *wh*-phrases ‘what’ and ‘why’ embedded in situ, (112) can be interpreted as a direct question about ‘what’, but not as a direct question about ‘why’. This asymmetry mirrors that shown by (110) and (111), except that in one case it is an asymmetry in movement and in the other case it is an asymmetry in interpretation.

These parallel properties provide a strong argument for an LF movement account of *wh*-in-situ. Huang (1982b) shows, in particular, that all the ungrammatical sentences in (104)-(109) and the asymmetries illustrated in (110)-(112) can receive a unifying account from the Empty Category Principle (ECP) of Chomsky (1981), if all *wh*-phrases are assumed to move—if not overtly in Syntax then covertly in LF. The ECP specifically applies to traces of movement only (but not to overt categories or null pronominals):

(113)  

The Empty Category Principle (ECP)

A non-pronominal empty category (i.e., trace) is properly governed.

An empty category is properly governed if it is (a) governed by a lexical head, or (b) governed by its antecedent (the moved category). An argument such as an object is head-governed, but an adjunct is not. Therefore, in order to satisfy the ECP, an adjunct trace must be antecedent-governed. For antecedent government to be possible, the

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23 The behavior of *zenme* ‘how’ parallels *weishenme* ‘why’ in this respect:

(i)  

ni xiang-zhidao [shei zenme xiu hao nei-bu che de]

you wonder who how fix that-CL car DE

a. ‘Who is the person x such that you wonder how x fixed the car?’
b. Not: ‘What is the method/manner x such that you wonder who fixed the car by x?’

However, when *zenme* is put in a relative clause or a sentential subject, the result is often milder ranging from marginal to acceptable, sometimes depending on speakers. See Rizzi (1990) for other differences between *why* and *how* in English, and Lin (1992), Tsai (1994b) for discussion of different senses of *weishenme* and *senme*.

24 For our present purposes, we shall assume the classical, ‘disjunctive’ version of the ECP. More recent formulations of the principle have reduced it to the basic notion of minimality, as properly defined. See Rizzi (1990), Chomsky (1995), etc., among others. For the most part these are theoretical improvements over the classical ECP, though they do not affect the point being made in the text.
moved category cannot go too far, such as crossing the boundary of a syntactic island. The ungrammaticality of (104)-(106)) and (111) thus falls under the ECP. Likewise, (107)-(109) and the reading (112b) are ruled out under the LF movement hypothesis, because their respective LF representations would be in violation of the ECP.

The ECP and the LF movement hypothesis together account for other asymmetries as well. As we indicated in the preceding section, A-not-A questions differ from normal disjunctive questions in that a sentence with an A-not-A constituent located in a syntactic island cannot be interpreted as a direct A-not-A question, and this fact readily falls under the ECP if the A-not-A constituents are assumed to undergo LF movement. Another area of interest concerns the syntax of multiple questions in English. English multiple questions, for example, exhibit systematic ‘superiority effects’ as illustrated below. Chomsky (1973) proposed the Superiority Condition (SC) to account for the subject-object asymmetry illustrated in (114), and Jaeggli (1981) argued that the SC readily reduces to the ECP if each of the unmoved *wh*-phrase does move in LF:

\[(114) \quad \begin{align*}
&\text{a. } \text{Who bought what?} \\
&\text{b. } *\text{What did who buy?}
\end{align*}\]

Huang (1982b) further observed adjunct-complement contrasts like the following and argued that they, too, follow from the ECP applied at LF:

\[(115) \quad \begin{align*}
&\text{a. } \text{Why did you buy what?} \\
&\text{b. } *\text{What did you buy why?}
\end{align*}\]

\[(116) \quad \begin{align*}
&\text{a. } \text{Tell me how you fixed which car.} \\
&\text{b. } *\text{Tell me which car you fixed how.}
\end{align*}\]

In short, English and Chinese adjunct *wh*-questions are subject to the same island restrictions. The main difference is that whereas the restrictions are observed as a matter of form (i.e., grammaticality) in English, they present themselves as a matter of interpretation in Chinese. A unified account is available if covert LF movement is assumed for *wh*-in-situ. This hypothesis is further supported by similar behavior observed in multiple questions in an English-type language.\(^{25}\)

### 7.4.2. LF Movement: Some Problems and Alternatives

The arguments we have reviewed in favor of LF movement turn on the similarities observed between English and Chinese *wh*-questions, especially adjunct *wh*-questions. However, there are also significant differences between them, especially with respect to questions with *argument* *wh*-phrases. For instance, it is consistently unacceptable for a

\(^{25}\) Other arguments have been adduced in the literature, including generalizations concerning Weak Crossover and the Specificity Condition. We shall omit these from discussion here and below.
wh-phrase to be moved out of an island, whether it is an adjunct as in (104)-(106), or an argument as shown below:\(^{26}\)

(117)  *What do you like [the man who fixed t]?*

(118)  *What did you feel satisfied [after he fixed t]?*

(119)  *What would [for him to fix t] be nice?*

However, an argument wh inside an island in Chinese can easily be interpreted as outside an island, even though an adjunct wh cannot be so interpreted (see (107)-(109)):

(120)  ni zui xihuan [mai shenme de ren]?

      you most like why buy what De person
      'What do you like [the man who bought t]?'

(121)  ta [zai Lisi mai shenme yihou] shengqi le?

      he at Lisi buy what after angry Le
      'What did he get angry [after Lisi bought t]?'

(122)  [wo mai shenme] zui hao?

      I why buy what most good
      'What is [that I buy t] best?'

A similar point can be made with multiple questions in English. Thus, whereas adjunct wh-phrases are not permitted in situ (see (115)-(116)), an unmoved wh-argument within an island is quite easily interpreted out of the island. Compare the following contrasts:

(123)  a.  *Who did you buy the books that criticize t?*

      b.  Who bought the books that criticized who?

(124)  a.  *Who did you get jealous because I praised t?*

      b.  Who got jealous because I praised who?

(125)  a.  *Who did you say that pictures of t are nice?*

      b.  Who said that pictures of who are nice?

(126)  a.  ?*What did you remember where I bought t?*

      b.  Who remembers where I bought what?

In each (a) sentence above, overt movement of an argument across an island produces unacceptable results; but in the (b) counterpart, an argument left in situ within an island

\(^{26}\) Movement out of a wh-island is sometimes not as unacceptable as movement out of a relative clause or a sentential subject or an adjunct clause. The former is a weak island (weak Subjacency violation) and the latter, a strong island.
can be construed with the matrix who to form a direct pair-list question. Thus, although the behavior of adjunct wh-phrases in-situ provides evidence for LF movement, the behavior of argument wh-phrases in situ seems to argue against it.

This paradoxical situation is resolved in Huang (1982b) by the assumption that movement constraints fall in two types with respect to their scope of application: the ECP constrains the output of movement at both S-Structure and LF, while the bounding conditions Subjacency (and the CED) constrain only the movement process in overt Syntax. Thus, the English sentences in (117)-(119) are out because they violate Subjacency/CED in overt Syntax; whereas the Chinese counterparts in (120)-(122) are acceptable because the covert movement in LF is insensitive to Subjacency/CED. Under overt movement, extraction of an object wh out of an island in English is ruled out by Subjacency/CED; while extraction of an adjunct wh out of an island is ruled out by both Subjacency/CED and the ECP. In Chinese, covert extraction of an argument satisfies the ECP and Subjacency/CED is irrelevant; only the ECP is relevant to covert extraction of an adjunct wh, especially why and how.

Although Huang’s proposal obtains the facts as desired, it begs the question why Subjacency and the CED should differ from the ECP with respect to their scope of application, and do so in the way stipulated but not, say, the other way around. In the spirit of the LF movement hypothesis which claims that movement occurs throughout overt Syntax and LF, the question arises as to why overt and covert movement should even differ with respect to these constraints at all. Furthermore, the crucial reference to a point in derivation where a given principle becomes irrelevant is at odds with current minimalist assumptions that have eliminated S-Structure as a distinct level of representation. Empirically, there is also evidence suggesting that certain hypothesized LF movement processes do in fact obey Subjacency. For example, it has been shown by several authors (Ito 1986, Barss, et al 1991, and Cole and Hermon 1994) that the syntax of internally headed relative clauses (as observed in such languages as Japanese, Navajo, and Imbabura Quechua) exhibits Subjacency/CED effects in the same way normal processes of (external) relativization do. Under the assumption that the internally headed relative clauses involve an LF head-raising operation, one must ensure that this process does not violate Subjacency or the CED.

Two general strategies have been followed in the literature in the analysis of wh-in-situ that do not suffer from the theoretical and empirical problems just noted. The first approach, taken by Nishigauchi (1986) and Fiengo, et al (1988) among others, maintains that LF movement obeys Subjacency/CED, but that due to possibilities of LF pied-piping, certain island effects are invisible. The second approach, developed most fully by

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27 Extraction of a subject out of an island in English also violates the ECP because a subject in English is not lexically governed. Inflection is not lexical in English. Although ‘adjunct ECP’ effects seem to be observed universally in all languages, ‘subject ECP’ effects are subject to variation across languages. Chinese does not display any significant ‘subject ECP’ effects.

28 When and where behave like arguments when they are left in situ, both in Chinese and in English multiple questions.
Aoun and Li (1993a, 1993b) and Tsai (1994a), maintains that *wh*-phrases in situ do not move in LF (hence they do not exhibit island effects), but are bound by an abstract operator—an unselective binding approach in the sense of Heim (1982). Other writers, most notably Pesetsky (1987) and Tsai (1994a), have adopted a mixed approach, maintaining that while some *wh*-phrases move (possibly pied-pipe), others are unselectively bound. In the rest of this chapter we shall review these strategies.

4.2.1. LF Subjacency and Pied-Piping

Nishigauchi (1986) hypothesized that Subjacency does apply to LF as it does to overt Syntax. Under this hypothesis the theoretical problems that arise under Huang’s (1982b) S-Structure Subjacency hypothesis immediately disappear. The main challenge of this hypothesis is to explain why argument *wh*-phrases in situ do not display familiar Subjacency/CED effects as observed with overt movement, though adjunct *wh*-phrases do. Nishigauchi proposes that the answer comes from the possibility of pied-piping an entire island when LF movement applies to a *wh*-argument contained in the island.

Consider the well-formed (120) for example, with *shenme* ‘what’ contained in a complex NP. Under the pied-piping hypothesis, LF movement of *shenme* may pied-pipe the entire complex NP *mai shenme de ren* ‘the person that bought what’ and place it in [Spec, CP], giving the following LF representation:

\[
\text{CP} \quad \left[ \text{mai shenme de ren} \right] \quad \left[ \text{ni zui xihuan ti} \right]?
\]

Lit.: ‘The person that bought what do you like most?’

Such a question may be interpreted as asking about the identity of the person who you like, in terms of the thing that the person bought. Since the *wh*-phrase *shenme* ‘what’ stays put within the relative clause containing it, the pied-piping movement does not violate Subjacency or the CED. Similarly, in deriving the LF representations for (121) and (122), LF movement may pied-pipe an entire sentential subject or an adjunct clause, each case obeying Subjacency/CED in full.

Given the pied-piping approach, then, (120)-(122) are grammatical, not because they do not obey Subjacency but because the relevant *wh*-phrase does not move out of an island. In other words, these sentences are only apparent counterexamples to the LF-Subjacency hypothesis. As long as pied-piping remains a possibility, Subjacency effects are entirely invisible for these sentences.

Fiengo, Huang, Lasnik and Reinhart (1988) examined Nishigauchi (1986) and, while finding the pied-piping hypothesis attractive, they saw two major problems with it, one theoretical and one empirical. The theoretical one has to do with the question why large-chunk pied-piping of the type being entertained is possible in LF, but not in overt Syntax. As the following examples show, overt pied-piping is very limited:

\[
\text{(128)} \quad \begin{align*}
\text{a. } & \text{Whose mother did you see?} \\
\text{b. } & \text{Who did you see pictures of?} \\
\text{c. } & \text{Of whom did you see pictures?} \\
\text{d. } & \text{*Pictures of whom did you see?}
\end{align*}
\]
e. *Pictures that who gave you are most funny?
f. *That who should pay for this would be most reasonable?
g. *Because John talked to who did you get jealous?

Instead of saying that Subjacency applies only to S-Structure but not to LF, the pied-piping hypothesis amounts to the claim that restrictions against large-chunk pied-piping obtain in overt but not covert Syntax. In the absence of an explanation as to why this should be true, the problem posed by S-Structure Subjacency is not solved, but simply reassigned.

Empirically, there is also a problem in that the pied-piping hypothesis does not get the semantics right for certain sentences. The hypothesis claims that movement does not violate an island constraint because the \textit{wh}-phrase contained in a given island never moves out of the island. This claim cannot be maintained in view of sentences of the following kind.

(129) mei-ge ren dou mai-le       [san-ben   [shei xie   de] shu]?
    Everybody all   buy-PERF three-CL   who write DE book
    ‘Who is the author x such that everybody bought 3 books that x wrote?’

In the sentence the \textit{wh}-phrase \textit{shei} ‘who’ is contained in the complex NP \textit{san-ben shei xie de shu} ‘three books that who wrote’, which is itself an existentially quantified NP. As indicated in the translation of (129), the sentence has a reading according to which the \textit{wh}-phrase has the widest scope, the existential NP headed by ‘3 books’ has the narrowest scope, while the subject ‘everybody’ has an intermediate scope. This is true as the question can be answered by supplying the identity of a single author, with the resulting sentence understood in the distributive sense, i.e., each person bought 3 different books.

(130) mei-ge ren dou mai-le       [san-ben   [Lisi xie   de] shu].
    Everybody all   buy-PERF three-CL   Lisi write DE book
    ‘Everybody bought three books written by Lisi.’

The availability of this reading means that \textit{shei} ‘who’ in (129) must be allowed to move out of the complex NP and beyond the subject ‘everybody’ to give the following LF representation, assuming that quantifiers undergo Quantifier Raising (QR, May 1977) by adjoining to IP:

(131) $[[CP \text{ shei}_i [IP \text{ mei-ge ren}_j [IP \text{ san-ben t}_i \text{ xie de shu}_k [IP \text{ t}_j \text{ dou mai-le t}_k ]]]]$

But this move violates Subjacency and destroys the original purpose of the pied-piping hypothesis.

Fiengo et al (1988) proposed a different version of the pied-piping hypothesis that is free from both the theoretical and empirical problems that Nishigauchi’s faced. Their proposal rests on the assumption that a \textit{wh}-phrase undergoes both QR (adjunction to IP) and \textit{wh}-movement (to Spec of CP), and that it is QR, not \textit{wh}-movement, that may perform large-chunk pied-piping. First, it is uncontroversial that a \textit{wh}-phrase is generally
considered both an interrogative phrase and an existential quantifier. Assuming that each quantificational NP (QNP) undergoes QR (by adjunction to IP) in LF, then it follows that every wh-phrase undergoes QR and, under the current approach, also wh-movement. Now, when a QNP (interrogative or otherwise) is contained in another NP, as in pictures of everybody/somebody/who, the containing NP may also be construed as a QNP, also subject to QR. This is so, because just as someone is a quantifier ranging over individuals, pictures of someone may be construed as a quantifier ranging over picture sets defined by their owners. That is, assuming a small domain, if someone is an existential quantifier ranging over \{John, Bill, Mary\}, then pictures of someone may be an existential quantifier ranging over the set \{pictures of John, pictures of Bill, pictures of Mary\}. Thus, a sentence like (132) may have (133) as its LF representation:

(132) Pictures of everybody are on sale.

(133) \[ [IP Everybody_{i} [IP [pictures of t_{i}]_{j} [IP t_{j} are on sale]]] \]

That is, QR may first target the containing NP pictures of everybody and perform a ‘pied-piping QR’, before applying to the smaller NP everybody. And for a wh-question like (134), QR may apply first by pied-piping a complex NP, followed by wh-movement into CP, as indicated in (135):

(134) ni zui xihuan [shei xie de shu]?
   you most like who write DE book
   ‘For which x, x a person, you like books that x wrote?’

(135) \[ [CP shei_{i} [IP t_{i} xie de shu]_{j} [IP ni zui xihuan t_{j}]]] \]

Fiengo et al (1988) follow Nishigauchi in taking Subjacency and the CED to be applicable in both overt and covert Syntax, though the island effects are sometimes invisible. This they attribute to two independent factors: (a) the possibility of pied-piping under QR (an adjunction operation), and (b) the ability of adjunction to ‘debarrierizes’ a barrier. The latter is a corollary of the idea—developed in the Barriers framework of Chomsky (1986b) and adopted in much other work (e.g., Kayne 1994)—that adjunction of a phrase \( \alpha \) to a category node A does not create an additional node on A, but simply breaks up the node into two segments \{A_{1}, A_{2}\} and places the adjoined category between them. Thus, suppose \( \alpha \) adjoins to A and then move into a higher position:

(136) \( \ldots \alpha_{i} \ldots [A_{1} t_{i} [A_{2} \ldots t_{i} \ldots ]] \)

Then neither of these steps crosses the category A in its entirety. Step one crosses segment A2, while step two crosses segment A1. The first step has not quite left the category A, and the second step has not quite originated from ‘within’ A. Suppose that A is a barrier of movement, such as the crucial ‘bounding node’ (Chomsky 1973) that is part of the definition of Subjacency, then movement of \( \alpha \) in ‘one fell swoop’ directly from the position \( t_{i} \) would be prevented by Subjacency. However, a stepwise movement
as depicted in (136) would be allowed, since in neither movement is the relevant bounding node crossed in full. This is why adjunction to a barrier has the effect of debarrierizing that barrier, thereby sidestepping Subjacency. Thus, given the S-Structure in (134), movement of shei ‘who’ out of the relative clause directly into the matrix Spec of CP would be prevented by Subjacency. However, a stepwise derivation as indicated in (135) is allowed. First, the complex NP containing shei is pied-piped under QR and adjoins to IP, crossing one segment of the bounding node. In the next step, shei is moved into CP, again crossing only a segment of the IP. Subjacency is satisfied in full. The same applies to the other cases of apparent island violations.

We can now see that, although similar in spirit, Fiengo et al’s (1988) account does not suffer from the theoretical and empirical problems associated with Nishigauchi’s account. Empirically, Fiengo et al account does allow a wh-phrase to move out of an island after (after the island has undergone QR), and so the problem associated with (129) does not arise. The correct semantics can be obtained, with the scope order ‘who’ > ‘everybody’ > ‘three books that . . . bought’, as in the LF representation (131). The possibility of large-chunk pied-piping in LF is not considered a property of LF wh-movement but of QR. So the question does not arise as to why covert wh-movement is able to pied-pipe more freely than overt wh-movement. The ability for QR to pied-pipe large constituents follows without stipulation from the meaning a QNP: in the event of any QNP contained in another (non-definite) NP, the containing NP may also be construed as a QNP.29 Finally, as for why QR pied-piping takes place only in LF, the answer is simply that QR is an operation of LF.

Note that the QR pied-piping hypothesis not only explains those cases of LF movement that do not exhibit island effects; it also fairs well with those cases that do, including adjunct wh-questions and internally headed relative clauses (IHRCs). We saw that adjuncts like weishenme ‘why’, zenme ‘how’ and the A-not-A constituent exhibit island effects that are attributed to the ECP, because their traces under covert movement fail to be antecedent-governed. Note that while it takes crossing two bounding nodes to constitute a Subjacency violation, one barrier is enough to prevent antecedent-government under the ECP. Thus, consider the following schema where an adjunct wh-phrase has been moved out of an island which has been adjoined to IP under QR:

\[
(137) \quad [\text{CP Wh-adjunct}_i \left[ \text{IP} \left[ \text{island} \ldots t_i \ldots \right] \right] \left[ \text{IP} \ldots t_j \ldots \right] ] ]
\]

This movement does not violate Subjacency, because the higher IP does not count as a second bounding node for a violation to occur. However, it does violate the ECP, because one barrier has been crossed (a relative clause, a sentential subject or an adjunct phrase), making antecedent government impossible.30

29 This is not possible if the containing NP is definite, as in *that picture of everybody*.

30 A question arises as to what if the adjunct in (137) is first adjoined to the island itself first, thereby debarrierizing the island, before moving into Spec of CP. Such a derivation can be ruled out in one of at least two ways. One is that while QR may adjoin to IP, it does not adjoin a QNP to a CP or PP (such as that of a relative clause, sentential subject
As for internally headed relative clauses (IHRCs), the reason they cannot sidestep Subjacency is quite simple. In IHRCs, the internal head raises to the head NP position in LF. Unlike wh-phrases which are QNPs subject to QR, there is no reason to assume the internal head to be a quantifier subject to QR. The option of pied-piping a whole island under head-raising is also ruled out, because that would give the wrong semantics: the relative clause would be understood as modifying the whole island as its head. A relative clause headed by the phrase pictures of the boy says something about the pictures, not about the boy. That seems to be true for all languages. IHRCs therefore display a full array of island restrictions.

4.2.2. Non-Movement and Unselective Binding

If certain wh-phrases in situ do not exhibit island effects, one possible explanation is simply that they are indeed in situ, in LF as well as in overt Syntax. This is the approach pursued in Aoun and Li (1993a, b), Tsai (1994a), among others. One of the most important empirical arguments that have been adduced concerns the interaction of some focus words such as only and wh-phrases in various constructions (those with antecedent-contained deletion, scope interaction etc.) We shall briefly discuss the basic paradigm regarding the distribution of only in wh-questions (see Aoun and Li 1993a for further details).

As pointed out in the literature, only is associated with an element in its c-command domain (see, among others, Anderson 1972, Kuroda 1969, Jackendoff 1972, Rooth 1985, Kratzer 1989, Tancredi 1990). This is illustrated by the following sentences:

(138) a. He only like Mary. (He doesn't love her.)
   b. ta zhi xihuan Mali.
      'He only like Mali.'

(139) a. He only likes Mary. (He doesn't like Sue.)
   b. ta zhi xihuan Mali.
      he only like Mali
      'He only likes Mali.'

or adjunct clause). Another one is to assume, in effect, that while adjunction may void a barrier of movement, it does not void a barrier of government. In other words, while a full barrier is need to count as a bounding node for Subjacency, a weaker boundary, such as a segment of a barrier, is enough to block proper government (cf. Fukui 1991). This latter hypothesis is independently motivated by the existence of other weak islands, such as negative clauses and complements of factive or non-bridge verbs, which block antecedent government though not (argument) movement:

(i) *Why didn’t he say that [John was late]?   
(ii) *Why did he whined that [John left]? 
(iii) *How did you regret that [John fixed the car]?
For the purpose of our discussion, it is relevant that the postverbal object associated with *only* cannot undergo overt movement: it cannot be topicalized as in (140), nor can it be 

(wh-) moved to form questions or relative structures as in (141).

(140)

a. *Mary, he only likes x₁.

b. *Mali, ta zhi xihuan x₁.

he only like  Mali

'He only likes Mali.'

(141)

a. *Who, does he only likes x₁?

b. *[ta zhi xihuan x₁ de] na-ge ren,

he only like  De that-Cl person

'the person that he only likes x.'

The following generalization, which Tancredi (1990) calls the Principle of Lexical Association (PLA), encodes the restriction at work with *only*:

(142)  Principle of Lexical Association

An operator like *only* must be associated with a lexical constituent in its c-command domain.

Aoun and Li (1993a, 206-210), based on a generalization regarding QP interaction and antecedent contained deletion (ACD), argue that the PLA must apply to covert movement as well. The PLA, thus, provides a test for the presence or absence of (overt and covert) movement. Interestingly, a *wh*-phrase can be associated with *only* in Chinese:

(143)

a. ta zhi xihuan shei?

he only like  who

'Who does he only like?'

b. ta zhi xihuan zai nar kan shu?

he only like at where read book

'Where does he only like to read?'

Were *wh*-phrases in such instances to undergo movement, it is unexpected that *only* can still be associated with them, as illustrated in (140)-(141).

The facts in (138)-(143) suggest that an in-situ *wh*-phrase stays in-situ even at LF. It does not undergo movement covertly. How, then, are the facts noted in the previous section that were captured by a movement analysis to be accommodated? The solution lies in a better understanding of the morpho-syntactic behavior of *wh*-words.

It has been noted in various works (see, among others, Cheng 1991, Huang 1982b, Kim 1989, 1991, Kuorda 1965, Li 1992, Nishigauchi 1986) that, in some languages such as Chinese, *wh*-words not undergoing overt movement to form questions are actually not interrogative expressions in the same way that *wh*-words in English are. Unlike English *wh*-words which are generally analyzed as interrogative expressions, *wh*-
words in Chinese do not have inherent interpretations as regards their ‘quantificational force’: depending on the contexts in which they occur, they may be interpreted as universal or existential quantifiers or as interrogative expressions. They are lexically underspecified but syntactically disambiguated for their quantificational force. In the context of the adverbial expression dou ‘all, uniformly’ (as in (144a)), a wh-phrase acquires the interpretation of universal quantification. In (144b), the conditional clause (assumed to contain an existential quantifier) gives an existential quantification interpretation to the wh-expression. And in (144c), the wh-expression is interpreted as an interrogative in the context of the wh-question marker ne.31

(144) a. shei dou xihuan shu.
   who all like book
   'Everyone likes books.'

   b. ruguo ni xihuan shei, jiu qing ta lai.
      if you like who then ask him come
      'If you like someone, then invite him over.'

   c. shei xihuan ni ne?
      who like you Q
      'Who likes you?'

In other words, a wh-phrase is lexically an ‘indeterminate’ category32 that exhibits ‘quantificational variability effects’ (QVE) of a kind similar to what has been observed with indefinites under ‘adverbs of quantification’ (Lewis 1976). As the following sentences show, the indefinite NP a farmer may be paraphrased as a universal or one of several possible existential NPs:

(145) a. A farmer nowadays is always rich.
   = Every farmer nowadays is rich.

   b. A farmer nowadays is sometimes rich.
   = Some farmers nowadays are rich.

   c. A farmer nowadays is seldom rich.
   = Few farmers nowadays are rich.

   d. A farmer nowadays is never rich.
   = No farmers nowadays are rich.

31 Ne is optional and only occurs in root clauses. In embedded questions we might take the selecting predicates to be the contexts that give the wh-phrases their interrogative force. An alternative is to say that the interrogative is the default value, in the absence of contexts that force (or license) non-interrogative universal and existential quantification.

32 The term ‘indeterminate’ is first used by Kuroda (1965) for a parallel property of Japanese wh-phrases.
Such QVEs suggest that the indefinite *a farmer* might not be an inherent existential quantifier, but is perhaps best treated as a variable unselectively bound by an appropriate adverb of quantification which gives rise to its quantificational force, viz.:33

\[(146) \ a. \ (\text{Always}_s) (a \text{ farmer}_i \text{ nowadays is rich}). \]
\[b. \ (\text{Sometimes}_s) (a \text{ farmer}_i \text{ nowadays is rich}). \]
\[c. \ (\text{Seldom}_s) (a \text{ farmer}_i \text{ nowadays is rich}). \]
\[d. \ (\text{Never}_s) (a \text{ farmer}_i \text{ nowadays is rich}). \]

In the same spirit, Aoun and Li (1993a) suggest that a *wh*-phrase is not an inherent quantificational expression, but a variable licensed and bound by an appropriate operator that gives rise to its quantificational force. In the case of interrogation, Aoun and Li (1993a) suggest that the *wh*-phrase is a variable bound by an interrogative operator generated in a question projection (or a $\Sigma$ projection along the lines of Laka 1990). Simplifying the presentation, we may use the following schema, with a Question operator and a *wh*-phrase coindexed, to represent the relation between a *wh*-element and the question operator (abbreviated as Qu) that licenses and binds the *wh*-element.

\[(147) \ [CP \ Qu_i \ [IP \ldots \ w/h_i \ldots \ ]] \]

A similar approach is suggested in Tsai (1994a). One of Tsai’s arguments turns on the important observation that English *wh*-forms, too, may exhibit QVE effects by being associated with different operators, except that this QVE occurs at the level of morphology. There are three series:

\[(148) \ a. \ \text{Universal} \quad \text{b. \ Existential} \quad \text{c. \ Interrogative} \]
\[
\begin{align*}
\text{whoever} & \quad \text{somewhat} & \quad \text{who} \\
\text{whatever} & \quad \text{somewhere} & \quad \text{what} \\
\text{wherever} & \quad \text{somehow} & \quad \text{where} \\
\text{whenever} & \quad \text{anywhere} & \quad \text{when} \\
\text{however} & \quad \text{nowhere} & \quad \text{how} \\
& & \quad \text{why}
\end{align*}
\]

At the morphological level, we can see that each item here exemplifies a structure of operator binding. In the first series, a *wh*-word is bound by the operator *ever* which gives it the force of universal quantification, and in the second series the operator *some* binding a *wh*-word results in existential quantification. It is then natural to assume that, in the last series, each *wh*-word receives an interrogative reading because it is bound (word-externally) by an abstract interrogative Q operator.

Thus both English and Chinese exhibit QVE effects with respect to their *wh*-words, these effects being the results of their being bound by different operators. The difference is that while these effects are observed in the lexicon in English, they are

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33 As in Heim (1982) and other related works. We return to the unselective binding approach to donkey anaphora in Chapter 10.
observed in syntax in Chinese. That is, in English, each word is ‘operator-variable complete’ and enters the syntactic component each with a fixed, inherent quantificational force, whereas in Chinese, this binding occurs right in syntax and each wh-phrase enters from the lexicon underspecified for its quantificational force. To put it another way, while an English interrogative word takes the synthetic form containing both the +Q feature and the wh-word in it, the Chinese interrogative ‘word’ takes the analytic (discontinuous) form of \([OP\ldots wh]\ldots\]. Since the English wh-word enters syntactic derivation with [+Q], overt movement is triggered to satisfy (or “check”) a relevant feature in C. In Chinese, overt movement does not occur because the operator OP satisfies the C’s requirement and the wh-word itself does not have the necessary [+Q].

Tsai’s explication of this English-Chinese difference is quite insightful as it explains why Chinese and English differ in the way they do with respect to wh-movement. In particular, it reduces the parametric difference between these two languages to a difference in the nature of their lexical items, in accordance with the widely-accepted Lexical Parameterization Hypothesis (Manzini and Wexler 1987), as a special case of the general analytic-synthetic difference between the two languages. In addition, consideration of QVE at the syntactic level also leads to the suggestion that Chinese wh-questions generally involve unselective binding, but not covert movement.

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34 Tsai argues that Japanese wh-phrases have a status between Chinese and English. Based on Watanabe (1992), Nishigauchi (1991) and others, it is shown that the operator (such as –ka and –mo, and by assumption -Q) responsible for giving a wh-phrase its quantificational force may be merged to a full NP/DP or PP. Thus while the interrogative ‘word’ may span over a whole sentence in Chinese, it may span over an NP/DP or PP in Japanese.

35 In Huang’s original typology, the two languages differ in where wh-movement applies, but such a typology per se does not explain why the Chinese-English difference could not be the reverse. For the Lexical Parameterization Hypothesis, cf. also Borer (1984), Chomsky (1995), Fukui (1995) among others.

36 It should be noted that while the morphological difference in their wh-words explains why English and Chinese differ with respect to overt movement, this fact itself is independent, as a matter of logic, of the question whether in situ wh-phrases undergo LF movement. Cheng (1991, 1995), for example, argues for a distinction between licensors and binders. In particular, she treats the variability of wh-phrases as a matter of polarity licensing. Thus while a wh-word is licensed as a universal quantifier in the presence of dou, as an existential quantifier in an affective context, and as an interrogative in the domain of a (possibly covert) question particle, she assumes that such QNPs (the interrogative one included) nevertheless still undergo LF movement. We agree that there is important reason for the distinction between licensing and binding. Thus, for example, the environments which license an existential reading of a wh-phrase range from negation to conditionals to yes-no and A-not-A questions and more, and it is difficult to see them each as an existential quantifier or as implying the presence of such a binder in its domain.
Assuming no movement, how do we then account for the facts that have been shown to fall under the LF-movement hypothesis? Consider the selection and scope properties noted in (98)-(103) for example. The generalization we saw earlier was that the selectional restrictions of various predicates differ with respect to whether they require, allow, or prohibit an interrogative operator in the Spec of their complement CPs, and this distinction was made by the LF movement of a wh-phrase into an appropriate Spec of CP position. In unselecting binding, this is quite simply achieved without resort to movement. The relevant Spec of CP is base-generated with a question operator Qu, coindexed with a wh-phrase. The selection requirements of each matrix predicate are met by the presence (or absence) of this operator. The sentences (98)-(100) are represented as in (149)-(151).

(149)  
\[Qu, \text{[Zhangsan yiwei \[\text{[Lisi mai-le shenme} i\]]]}?\]  
for which x: x a thing, Zhangsan thinks Lisi bought

b.  
\[\text{[[Zhangsan yiwei \[Qu, \text{[Lisi mai-le shenme} i\]]]}?\]  
Zhangsan thinks [for which x: x a thing, Lisi bought x]

(150)  
\[Qu, \text{[Zhangsan xiang-zhidao \[\text{[Lisi mai-le shenme} i\]]]}?\]  
for which x: x a thing, Zhangsan wonders Lisi bought

b.  
\[\text{[[Zhangsan xiang-zhidao \[Qu, \text{[Lisi mai-le shenme} i\]]]}?\]  
Zhangsan wonders [for which x: x a thing, Lisi bought x]

(151)  
\[Qu, \text{[Zhangsan jide \[\text{[Lisi mai-le shenme} i\]]]}?\]  
for which x: x a thing, Zhangsan remembers Lisi bought

b.  
\[\text{[[Zhangsan jide \[Qu, \text{[Lisi mai-le shenme} i\]]]}?\]  
Zhangsan remembers [for which x: x a thing, Lisi bought x]

The scope property of each wh-word is directly represented by these structures, as being equivalent to the scope of the Qu operator that binds it.\(^{37}\)

What about generalizations concerning movement constraints? First, we saw that argument wh-phrases in situ do not exhibit island effects. This is of course what we expect under the non-movement approach. But what about adjunct wh-phrases? If there is no LF wh-movement, it’s not immediately clear why adjuncts are restricted by movement constraints like the ECP.

In answer to this question, two options have been proposed in the literature. One claims that while wh-arguments do not move in LF, wh-adjuncts nevertheless do (Tsai 1994a). This approach assumes that adjunct wh-phrases can only be an operator but

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\(^{37}\) Generalizations regarding Weak Crossover and the Specificity Constraint (cf. note ???) can likewise be captured under this account. What is needed is a broader definition of a variable: in addition to an A-bar bound empty category (under movement) or a pronominal (in the case of a resumptive pronoun), any DP/NP that is directly A-bar bound is defined as a variable.
cannot function like a variable as argument \textit{wh}-phrases do. In other words, adjuncts like \textit{weishenme} ‘why’, \textit{zenme} ‘how’ and the A-not-A constituent are inherently interrogative (with inherent [+Q] features) on a par with English interrogative \textit{wh}-phrases, and therefore they also move to Spec of CP (albeit covertly), with ensuing island effects. The plausibility of this idea is supported by several considerations, though some questions remain. First, in English, as far as the adjunct \textit{why} is concerned, we do see that it does not pattern with other \textit{wh}-words in having a lexical QV effect: compare these with those we saw in (148): *\textit{whyever}, *\textit{somewhy}, *\textit{anywhy}. The adjunct \textit{why} has only an interrogative interpretation. In Chinese, too, adjuncts like \textit{weishenme}, \textit{zenme} and A-not-A do not receive an existential quantificational reading in an affective context, in the way that \textit{wh}-arguments do. The following sentences illustrate the versatility of \textit{shenme} 'what' in various contexts.

\begin{enumerate}
\item \textit{ta mei zuo shenme.}
\hspace{1cm} he not do what
\hspace{1cm} 'He did not do anything in particular.'
\item \textit{ni zuo le shenme ma?}
\hspace{1cm} you do Le what Q
\hspace{1cm} 'Did you do something.'
\item \textit{ni xiang-bu-xiang mai shenme?}
\hspace{1cm} you want-not-want buy what
\hspace{1cm} 'Would you like to buy something or not?'
\item \textit{wo yiwei ta zuo le shenme.}
\hspace{1cm} I thought he do Le what
\hspace{1cm} 'I thought he did something.'
\item \textit{ni kan! ta yiding faxiang-le shenme le, buran zenme name gaoxing?}
\hspace{1cm} you look s/he definite discover-PERF what ASP, otherwise why so happy
\hspace{1cm} 'Look, s/he must have discovered something; otherwise why s/he be so happy?'
\item \textit{ruguo ni xihuan shenme, wo jiu ba ta mai-xia-lai.}
\hspace{1cm} if you like what I then BA it buy-down
\hspace{1cm} 'If you like something, I will buy it.'
\end{enumerate}

As pointed out by A. Li (1992) (cf. also Lin 1998), a \textit{wh}-phrase takes on an existential quantifier reading in a variety of contexts, including negation (a), yes-no questions (b), A-not-A question (c), non-factive predicates (d), expressions of probability or inference (e), and conditional clauses (f).\textsuperscript{38}

\textsuperscript{38} By and large these are the elements that do not assert or imply the truth of the propositions they modify. A superset of the traditional ‘affective contexts’, these contexts have more recently come under the term \textit{nonveridicality} (Giannakidou 1999,
By contrast, *weishenme* ‘why’, A-not-A and (to a lesser degree) *zenme* ‘how’ do not receive an existential reading under these contexts. The following sentences are either ungrammatical, or grammatical only under an interrogative reading:

(153) a. *ta hui weishenme hen hao yun ma?*
    he will why very good fortune Q
    'Will he get lucky for some reason?'

b. ??*ta hui zenme xiu che ma?*
    he will how fix car Q
    'Will he fix cars in some way?'

(154) a. *ruguo ta weishenme hao yun, ni jiu hui yinwei na-ge yuanyin hao yun.*
    if he why good fortune you then will because that-Cl reason good fortune

b. *ruguo ta zenme xiu che, ni jiu yinggai yong na-ge fangfa xiu che.*
    if he how fix car, you then should use that-Cl method fix car

(155) ni yiwei [ta weishenem/zenme/shi-bu-shi xiu-le nei-bu che le] ne?
    you think s/he why/how/be-not-be fix-PERF that-CL car ASP Q

*Interrogative readings only:*

a. ‘Why do you think that s/he fixed the car t?’

b. ‘How do you think that s/he fixed the car t?’

c. ‘Do you think that s/he has fixed the car (or do you think s/he has not)?’

If, indeed, adjunct *wh*-phrases can never function like variables, it is logical to assume that they are operators and undergo movement at LF. Furthermore, *wh*-adjuncts also differ from arguments in that they cannot occur under *zhi* ‘only’:

(156) a. *ta zhi xiu-le nar-bu shu?*
    s/he only fix-PERD which-CL car
    ‘She fixed only which car?’

b. *ta zhi weishenme xiu-le che?*
    s/he only why fix-PERF car

c. *ta zhi zenme xiu-le che?*
    s/he only how fix-PERF car

d. *ta zhi yuan-bu-yuanyi xiu che?*
    s/he only willing-not-willing fix car

etc.). According to Giannakidou, a propositional operator $F$ is nonveridical iff $F_P$ does not entail $P$. 
Recall our discussion of the PLA (142) above. The grammaticality of (156a) suggested to us that the *wh*-phrase *nar-bu che* ‘which car’ does not move in LF. Then, by the same reasoning, the ungrammaticality of (156c-d) might suggest that a *wh*-adjunct has moved, causing a violation of the PLA.\(^{39}\)

However, although *wh*-adjuncts cannot be interpreted as existential indeterminates, on other occasions they can behave like variables. Cheng and Huang (1996) have argued that in ‘bare conditional’ sentences as illustrated below, the *wh*-phrases in situ are best analyzed as variables unselectively bound by appropriate adverbs of quantification. (See also Chapter 10 on donkey anaphora.) In such constructions, however, we see that both argument and adjunct *wh*-phrases are acceptable:\(^{40}\)

\[(157) \text{ta xie shenme, wo jiu xie shenme.} \]
\hspace{1cm} he write what, I then write what
\hspace{1cm} 'I will write whatever he writes.'

\[(158) \begin{align*}
\text{a. ta weishenme mei lai, wo jiu weishenme mei lai.} \\
\hspace{1cm} \text{he why not come I then why not come} \\
\hspace{1cm} \text{I did not come for the same reason he did not come.'}
\end{align*} \]

\begin{align*}
\text{b. ta zenme xiu che, ni jiu yinggai zenme xiu che.} \\
\hspace{1cm} \text{he how fix car, you then should how fix car} \\
\hspace{1cm} \text{You should fix cars in the same way he fixes cars.'}
\end{align*}

So the movement hypothesis is somewhat of a double-edged sword as regards the behavior of adjunct *wh*-phrases in situ.

An alternative to a movement approach to adjuncts is to claim that an adjunct *wh* also does not undergo movement. However, their relation with the Qu operator is more restrictive because *wh*-adjuncts are not referential (see Aoun and Li 1993a). Details aside, it is claimed by Aoun and Li that a Qu operator cannot bind an adjunct *wh* across a local domain (such as the same clause).\(^{41}\) In order for the adjunct *wh* in (153)-(154) and (107)-(109) to be properly licensed and bound, a Qu operator must occur inside the island. However, the Qu operator would, then, not be able to occur outside the island to

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\(^{39}\) Adjunct *wh*-constituents are also excluded from under Negation, and this again can be explained by the ECP as a violation of Ross’ ‘Inner Island’ constraint, as suggested in Rizzi (1990).

\(^{40}\) A-not-A forms are completely excluded from such conditionals though:

\[(i) \text{*ta gao-bu-gaoxing, wo jiu gao-bu-gaoxing.} \]
\hspace{1cm} s/he hap-not-happy, I then hap-not-happy
\hspace{1cm} Intended: I will be either happy or not happy as she will be.

\(^{41}\) A precise formulation of this locality binding condition is also needed to exclude binding into an ‘inner island’ or into a domain c-commanded by *zhi* ‘only’.
represent proper scope interpretation. This captures the relevance of island conditions to adjunct \textit{wh}.

This non-movement approach to adjuncts still leaves one fact unexplained, however. As seen in (155) and elsewhere above in this chapter, \textit{wh}-adjuncts (as well as arguments) may enter into long-distance dependencies. A sentence with an embedded adjunct may be interpreted as a direct question about the adjunct. In order to accommodate such cases, Aoun and Li (1993a) suggested that a \textit{wh}-adjunct is underlyingly bound by a Qu-operator in its local CP. The local Qu operator, if not located in the Spec of an interrogative C\textsubscript{0}, must move to a higher Spec of CP where such a C is available. This gives a long-distance adjunct question the following representation:

(159) \[
[\text{CP Qu}_i [\text{IP ta renwei } [\text{CP t}_i [\text{IP Lisi weishenme}_i mei lai ] ] ne ]]?
\]

\[
\begin{array}{c}
\text{s/he think} \\
\text{Movement}
\end{array} \quad \begin{array}{c}
\text{Lisi why not come} \\
\text{Binding}
\end{array}
\]

where the relation between \textit{t}_i and \textit{weishenme} ‘why’ is one of binding, and that between \textit{Qu} and \textit{t}_i one of movement. The possibility of interpreting an adjunct long-distance but not across an island is then reduced to the existence of movement, not of the \textit{wh}-adjunct in situ, but of an abstract operator locally binding it.

Both varieties of the non-movement approach to \textit{wh}-in-situ thus employ some limited use of the movement strategy. As for which of these varieties is more satisfactory, we must leave it open for future research.

7.5. Summary

In this chapter we have discussed all major types of questions in Chinese: \textit{yes-no} questions, disjunctive questions, A-not-A questions and \textit{wh}-questions. We made some efforts to distinguish A-not-A questions from \textit{yes-no} questions on the one hand and normal disjunctive questions on the other. We then argued for the need to distinguish between two types of true A-not-A questions, and we adopted a modular approach that derives their differences with respect to island sensitivity, lexical integrity and the ban against P-stranding. For \textit{wh}-questions, we directed our attention to the fact that they involve the \textit{in-situ} strategy and addressed the question of how various similarities and differences between Chinese and English (and by extension, between \textit{wh}-in-situ languages and \textit{wh}-movement languages) can be insightfully captured. Although the apparent absence of syntactic movement had for some time put the \textit{wh}-in-situ languages outside of a major part of general syntactic theory, a covert movement hypothesis has unearthed interesting insights concerning the theory of movement, the nature of syntax-semantics interface, with consequences for a parametric theory of questions as well as questions about the nature and existence of covert movement itself.

References

Anderson (1972)


