5　Modularity and Chinese A-not-A Questions[*]

1　INTRODUCTION

In theoretical linguistics, a common type of explanation takes the form of a proposal that ties together observed similar phenomena whose relatedness would otherwise be obscured. The generative treatment of passive sentences and their active counterparts is a simple example, according to which the observed similarities between such constructions (with respect to their 'argument structure,' etc.) are explained given the idea that they have a common or similar D-structure source. Chomsky's Subjacency is another example, as it ties together a number of Ross's island constraints, thus providing an explanation for their clustering in a way that the individual constraints do not.

In addition to this 'unifying approach,' it has been shown in recent years that explanation can also occur in a different form, under a 'modular approach.' According to this approach, what is often perceived as a single phenomenon is torn apart or modularized into two or more subparts each of which is treated under a separate subsystem of rules or principles of grammar. Much recent work in generative linguistic theory has taken this approach to linguistic explanation. As argued in Jaeggli (1981), for example, the traditional treatment of passivization, which takes the form of a single rule of Passive, is less explanatory than an approach that factors the rule into several components that fall separately under Case Theory, Theta Theory, Bounding Theory, Binding Theory, and the simple rule Move α. Although this approach at first appears to go against explanation, often it can be shown (as Jaeggli and others have shown) to result in a simple grammar and a more explanatory overall system.

In this chapter I examine the properties of a question form in Chinese, called the A-not-A question, and try to provide an account of its properties within an articulate theory of generative grammar. In contrast to the 'one-rule approach' more familiar from the Chinese linguistic literature, I show that an analysis that treats this type of question as the result of the interaction of a number of rules and/or principles provides a more explanatory account of many of its otherwise peculiar properties. If correct, the

proposed analysis then provides important additional evidence for the modular approach to linguistic explanation.

Traditionally, the A-not-A question is considered to include a paradigm like (1):

(1) a. ta xihuan zheben shu (haishi) ta bu xihuan zheben shu?
        he like   this   book   or   he not like   this   book
        'Does he like this book or doesn't he like this book?'

     b. ta xihuan zheben shu   bu xihuan zheben shu?
        he like   this   book not like   this   book
        'Does he like this book or doesn't [he] like this book?'

     c. ta xihuan bu xihuan zheben shu?
        he like   not like   this   book
        'Does he like or doesn't [he] like this book?'

     d. ta xihuan zheben shu   bu xihuan?
        he like   this   book not like
        'Does he like this book or doesn't [he] like [it]?'

     e. ta xi-bu-xihuan zheben shu?
        he like-not-like this   book
        'Does he like or not like this book?'

Since the early work of Wang (1967), scholars have generally described the paradigm as representing a unitary phenomenon, and accounted for the formation of the sentences in (1b–e) as the result of deletion of identical elements from a full coordinate structure like (1a). (See, for example, Lü 1985; Li and Thompson 1981; and Lin 1974.) The A-not-A question is taken to be a special type of disjunctive question, and the deletion process is usually taken to be an instance of the general process that derives other types of disjunctive questions. Thus, forward deletion of the second subject in (1a) gives (1b). Further deletion of either object in (1b) gives (1c) or (1d), depending on whether deletion has applied backward or forward. In the case of backward deletion, it is also possible to delete an identical subpart of a verb from the first conjunct, giving (1e). Certain conditions are needed to ensure that deletion applies in the correct environments and in the correct direction, but the sentences in the entire paradigm (1) are related by a single rule.

I will argue that this one-rule approach to the formation of A-not-A questions should be replaced by a modular approach, which breaks up the paradigm in (1) into three separate sub-paradigms. In particular, I will show that the A-not-A question as exemplified by (1b–e) should not be analyzed as being derived from disjunctive questions like (1a) by a process of coordinate deletion. Furthermore, two kinds of A-not-A questions should be distinguished, one of which is derived from a simplex sentence with an

interrogative INFL constituent that is phonetically realized, in Mandarin, by a rule of reduplication, and the other from a base structure of juxtaposed VPs that may be subject to anaphoric ellipsis. Under this proposal, the A-not-A questions are analyzed in a way that assimilates them, in their syntax, to constituent questions. Although the modular approach appears to involve a more complex grammar than the one-rule approach at first sight, it will be shown that the complexity is only apparent and that it actually results in a much simpler grammar. In Section 2, I indicate the problems that arise under the traditional one-rule approach. Sections 3 and 4 present the modular treatment of (1) and show how these problems are solved under this treatment. In Section 5, I present four arguments, based on comparative evidence from Chinese dialects, as additional support for the proposed analysis. Section 6 is a brief conclusion.

2   A-NOT-A QUESTION AS A DISJUNCTIVE QUESTION

It is generally agreed that the A-not-A question is historically derived as a special form of the disjunctive question (see T. Mei 1978). A synchronic analysis of the A-not-A question on a par with disjunctive questions is, of course, natural and highly plausible, as it at least appears to eliminate the need for a special rule to generate A-not-A questions in addition to a general process that generates other disjunctive sentences. However, without contesting the historical claim, there is reason to believe that such a synchronic analysis is not optimal. There are at least five problems with such an analysis.

2.1   The Directionality Constraint

First of all, although it is attractive to derive the paradigm (1b–e) by a single rule of coordinate deletion, the attractiveness disappears once we realize that such a rule is at variance with general principles of grammar and is therefore unmotivated on independent grounds. For example, since Ross's 1967 work, it has been well known that coordinate deletion is subject to a severe Directionality Constraint (DC) to the effect that deletion must go forward if the identical elements in a coordinate structure occur on a left branch of a tree, but backward if they each occur on a right branch. The DC predicts that each (a) sentence following can be turned into (b) but not into (c):
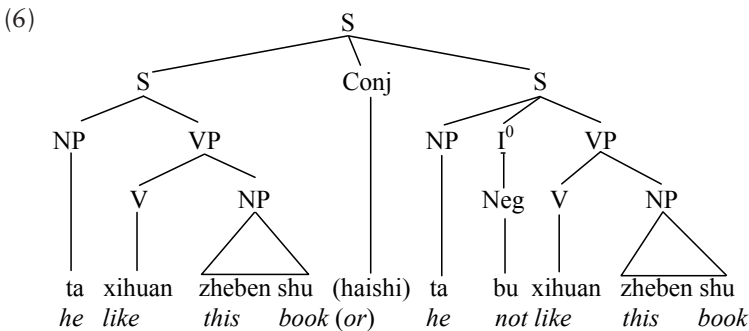
(2) a. John sang and John danced.
     b. John sang and danced.
     c. *sang and John danced.

(3) a. John sang and Mary sang.
     b. John and Mary sang.
     c. *John sang and Mary.

In (2a) the identical subjects each occur on a left branch, so deletion goes forward; in (3) the identical predicates occur on a right branch, so deletion goes backward. The DC also applies in Chinese, accounting for (4)–(5):

(4)   a.   Zhangsan changge, Zhangsan tiaowu.
           Zhangsan sing   Zhangsan dance
           'Zhangsan sang and Zhangsan danced.'

      b.   Zhangsan changge, tiaowu.
           'Zhangsan sang and danced.'

      c.   *changge, Zhangsan tiaowu.

(5)   a.   Zhangsan changge, Lisi changge.
           Zhangsan sing   Lisi sing
           'Zhangsan sang and Lisi sang.'

      b.   Zhangsan gen Lisi (dou) changge.
           Zhangsan and Lisi all   sing.
           'Zhangsan and Lisi sang.'

      c.   *Zhangsan changge, Lisi (ye/dou).

Turning now to A-not-A questions, consider (6), the D-structure of (1a):

(6)

According to the DC, the second occurrence of *ta* 'he' may be deleted, resulting in (1b). Subsequent deletion of the first occurrence of *zheben shu* 'this book' and the syllable *huan* of *xihuan* 'like,' gives (1c) and (1e). The DC also correctly excludes the following:

(7)   *xihuan zheben shu, ta bu xihuan zheben shu?

(8)   *ta xihuan bu xi- zheben shu?

(9)   *ta xihuan zheben shu bu xi-?

However, certain well-formed A-not-A questions (e.g., [1d]) clearly do not obey the DC:

(1d) ta xihuan zheben shu   bu xihuan?
       he like   this   book not like
       'Does he like this book or doesn't [he] like [it]?'

The object 'this book' occurs on a right branch in (6), but (1d) is the result of forward deletion, in violation of the DC. This shows that at least some A-not-A questions cannot be derived by coordinate deletion.

2.2   Immediate Dominance Condition

A second problem of the one-rule approach has to do with a restriction on coordinate deletion specific to Chinese grammar first discovered by Tai (1972), which provides that, in Chinese, coordinate deletion can delete only those elements that are immediately dominated by a conjunct node. Tai's Immediate Dominance Condition (ID) correctly accounts for the following facts:

(10)   a.   Zhangsan chi fan, Lisi chi mian.
             Zhangsan eat rice Lisi eat noodles
             'Zhangsan eats rice and Lisi eats noodles.'

        b. *Zhangsan chi fan, Lisi mian.
             Zhangsan eat rice Lisi noodles

(11)   a.   Zhangsan zhu   fan, Lisi chi fan.
             Zhangsan cook rice Lisi eat rice
             'Zhangsan cooks rice and Lisi eats rice.'

        b. *Zhangsan zhu, Lisi chi fan.
             Zhangsan cook Lisi eat rice

Examples (10b) and (11b) are ill-formed because neither the verb 'eat' in (10a) nor the object 'rice' in (11a) are immediately dominated by a conjunct node (S). By assuming that the ID does not apply in English, Tai also captures an important difference between Chinese and English:

(12)   John ate rice and Bill noodles.

(13)   John cooked and Bill ate rice.

However, there are also sentences that apparently do not obey Tai's ID, including A-not-A questions like (14) and (15):

(14)   Zhangsan zhu   fan, Lisi chi.
　　　 Zhangsan cook rice Lisi eat
　　　 'Zhangsan cooks rice and Lisi eats [it].'

(15)   ni   bi   ta   mai shu bu bi   ta   mai?
　　　 you force him buy book not force him buy
　　　 'Will you force him to buy books or not force him to buy [them]?'

Like the DC, there seems to be good reason to believe that Tai's ID captures a valid generalization about Chinese. If so, then the occurrence of sentences like (14) and (15) shows that certain sentences that appear to be derived via coordinate deletion must be derived in a different way.

2.3   Lexical Integrity

A further problem with the one-rule approach concerns a fundamental principle that distinguishes syntax from morphology and phonology, namely, the Lexical Integrity Hypothesis (LIH):

(16)   LIH: Phrase-level rules belonging to the syntactic component can-
　　　　　　not affect a proper sub-part of a lexical category (word).

The LIH clearly also holds in Chinese. It explains why the object of a VP can be topicalized (17), whereas the object of a verb-object compound cannot (18):[1]

(17)   a.   wo mei mai shu.
　　　　　 I   not buy book
　　　　　 'I didn't buy the books.'

　　　　b.   shu,   wo mei mai.
　　　　　 book I   not buy
　　　　　 'The books, I didn't buy.'

(18)   a.   wo mei zhu-yi.
　　　　　 I   not pay-attention
　　　　　 'I didn't pay attention.'

　　　　b.   *yi, wo mei zhu.

Among other things, the LIH also correctly predicts that coordinate deletion cannot delete a subpart of a word:[2]

(19)   a.   wo xihuan huo-che gen qi-che.
　　　　　 I   like   fire-car and gas-car
　　　　　 'I like trains and automobiles.'

　　　　b.   *wo xihuan huo- gen qi-che.

(20) a. I like New York and New Orleans.
      b. *I like New York and Orleans.

The principle also excludes anaphoric ellipsis of the kind represented by (21b):

(21) Q: ni   xihuan ta   ma?
         you like   him PRT
         'Do you like him?'

      A: a. wo hu xihuan.
            I   not like
            'I don't like him.'

         b. *wo bu xi-.

Turning now to A-not-A questions, what is interesting is that some A-not-A questions seem to be able to violate the LIH, but not all. In particular, sentences of the form (1e), but not those of the form (1d), seem to disobey this principle.

(22) a. ni   xi-bu-xihuan zheben shu?
         you li-not-like   this   book
         'Do you like this book?'

      b. *ni   xihuan zheben shu   bu xi-?
         you like   this   book not li-

(23) a. ni   gao-bu-gaoxing?
         you hap-not-happy
         'Are you happy or not?'

      b. *ni   gaoxing bu gao-?
         you happy   not hap-

An analysis that derives the entire paradigm in (1b–e) via one rule has to explain why the derivation of A-not-A questions may disobey the LIH, and why only some of such questions may constitute 'exceptions' to this principle. This is clearly a serious weakness of the one-rule approach.

2.4 Preposition Stranding

A similar problem arises with respect to the general prohibition against preposition stranding observed in Chinese (and many other languages), which we may express as the filter (24):

(24)   *[$_{PP}$ P [e]]

That Chinese does not permit preposition stranding (as a result of either movement or deletion) is shown in (25)–(26):[3]

(25) a. wo ba gongke   zuo-wan le.
          I   BA homework finish   ASP
          'I have finished the homework.'

      b. *gongke, wo ba [e] zuo-wan le.

(26) Q: ni gen Lisi dajia-le   ma?
          you with Lisi fight-ASP PRT
          'Did you fight with Lisi?'

      A: meiyou, wo meiyou gen *(ta) dajia.
          no   I   not   with him fight
          'No, I didn't fight with *(him).'

But this prohibition is again contradicted by some (not all) A-not-A questions.[4]

(27) a. ni gen bu gen ta   shuo hua?
          you with not with him say   words
          'Do you talk to him or not?'

      b. *ni gen ta shuo hua bu gen?

(28) a. ni ba-bu-ba gongke   zuo-wan?
          you BA-not-BA homework finish
          'Will you finish the homework or not?'

      b. *ni ba gongke zuo-wan bu ba?

2.5   Disjunctive versus A-not-A Questions

Concerning the LIH and P-stranding, a systematic difference also exists between true disjunctive questions that contain *haishi* 'or' and A-not-A questions (which do not contain *haishi*). Thus, unlike some A-not-A questions, all *haishi*-questions obey the LIH and disallow preposition stranding:

(29) a. ni   xihuan haishi bu xihuan zheben shu?
          you like   or   not like   this   book
          'Do you like this book or not?'

      b. *ni xi-haishi bu xihuan zheben shu?

(30) a. ni gen ta   haishi bu gen ta   shuo hua?
          you with him or   not with him say   words
          'Do you talk to him or not?'

      b. *ni gen haishi bu gen ta shuo hua?

(31)   a.   ni   ba gongke   zuo-wan haishi bu   ba gongke   zuo-wan?
          you BA homework finish   or   not BA homework finish
          'Will you finish the homework or won't finish the homework?'

       b.   *ni ba haishi bu ba gongke zuo-wan?

2.6.   Island Constraints

Finally, there is also a systematic difference between A-not-A questions and *haishi*-questions with respect to the theory of island constraints. In particular, the distribution and interpretation of the A-not-A form within an A-not-A question exhibits island effects, whereas the distribution and interpretation of disjunctive questions with *haishi* 'or' does not. Thus, a sequence with *haishi* (of the form [A *haishi* not A] or [A *haishi* B]) may be properly embedded in a sentential subject (32), but a sequence of the form [A not A] without haishi cannot (33):

(32)   a.   [wo qu Meiguo haishi bu qu Meiguo] bijiao hao?
          I   go America or   not go America more good
          'Is it better that I go to America or that I do not go to America?'

       b.   [wo qu Meiguo haishi bu qu] bijiao hao?
          I   go America or   not go more good

       c.   [wo qu haishi bu qu Meiguo] bijiao hao?
          I   go or   not go America more good

       d.   [wo haishi ni   qu Meiguo] bijiao hao?
          I   or   you go America more good
          'Is it better for me or for you to go to America?'

       e.   [wo qu Meiguo haishi Yingguo] bijiao hao?
          I   go America or   England more good
          'Is it better for me to go to America or to England?'

(33)   a.   *[wo qu Meiguo bu qu Meiguo] bijiao hao?
       b.   *[wo qu Meiguo bu qu] bijiao hao?
       c.   *[wo qu bu qu Meiguo] bijiao hao?[5]

Similarly, *haishi* may occur within a relative clause, but [A not A] cannot:

(34)   a.   ni   xihuan [renshi ni   haishi bu renshi ni]   de ren?
          you like   know you or   not know you DE person
          'Do you like people who know you or people who don't know you?'

       b.   ni   xihuan [renshi haishi bu renshi ni] de ren?
          you like   know   or   not know you DE person

       c.   ni   xihuan [renshi ni   haishi bu renshi] de ren?
          you like   know you or   not know   DE person

(35) a. *ni xihuan [renshi ni bu renshi ni] de ren?
      b. *ni xihuan [renshi bu renshi ni] de ren?
      c. *ni xihuan [ren-bu-renshi ni] de ren?
      d. *ni xihuan [renshi ni bu renshi] de ren?

Needless to say, an analysis that derives all of (1a–e) in the same way has the burden of accounting for the island facts. There is no obvious reason why deletion of the conjunction *haishi* is subject to Subjacency or the CED (Huang 1982). In fact, it is generally agreed that bounding conditions do not apply to deletion processes at all.

3   A-NOT-A QUESTIONS AND CONSTITUENT QUESTIONS

The preceding section has, I think, amply demonstrated the heterogeneous nature of the paradigm in (1). The one-rule approach seems to gain a superficial simplicity, but is overwhelmed with problems concerning the directionality of deletion, Tai's ID Condition, lexical integrity, preposition stranding, and island constraints. I will now present an alternative approach to (1), according to which what is perceived as a single paradigm is modularized into several sub-paradigms. First, questions with *haishi* (as in [1a]) are separated from genuine A-not-A questions (as in [1b–e]). Furthermore, the A-not-A questions are separated into two types: the [A not AB] type and the [AB not A] type. The [A not AB] type refers to examples that are derived, in traditional terms, from [AB not AB] by backward deletion. These include examples like (1c) and (1e), repeated in the following:

(36) ni   xihuan-bu-xihuan zheben shu?   (1c)
      you like-not-like   this   book

(37) ni   xi-bu-xihuan zheben shu?   (1e)
      you like-not-like this   book

The [AB not A] type includes (1d), and those that are derived, in traditional terms, by forward deletion from [AB not AB]:

(38) ta xihuan zheben shu   bu xihuan?   (1d)
      he like   this   book not like
      'Does he like this book or not?'

(39) ni   renshi zhege ren   bu renshi?
      you know this   person not know
      'Do you know this person or not?'

As for examples like (1b) (= 40) and (41) following, these may be analyzed as either type:

(40)   ta xihuan zheben shu   bu xihuan zheben shu?   (1b)
       he like   this   book not like   this   book
       'Does he like this book or not like this book?'

(41)   ni   lai   bu lai?
       you come not come
       'Will you come or not?'

Example (41) is of the form [A not A]; it can be analyzed as [A not AB] or [AB not A], where B is null. Similarly, (40) has two possible analyses, if A is taken to include the entire VP *xihuan zheben shu* 'like this book' and B is null. Let us take up each sub-paradigm in turn.

3.1   True Disjunctive Questions

Questions containing *haishi* 'or' are considered true disjunctive questions. The sequence with *haishi* may take the form of [[A] or [not A]], or the form of [A or B]. Following traditional analyses, I assume that these are derived from full bi-sentential sources by coordinate deletion, perhaps applied in the PF component of grammar (cf. Sjoblom 1980). Thus, the (b) sentences following are derived by (successive application of) coordinate deletion from their (a) counterparts:
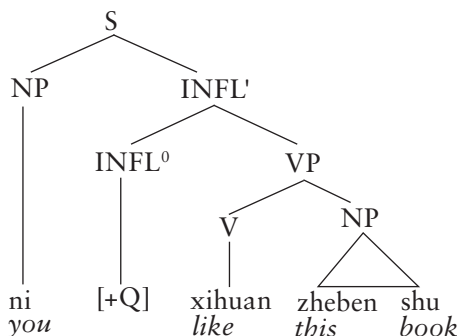
(42)   a. ?ni xihuan Zhangsan haishi ni   xihuan Lisi?
          you like   Zhangsan or   you like   Lisi
          'Do you like Zhangsan or do you like Lisi?'

       b. ni xihuan Zhangsan haishi Lisi?
          'Do you like Zhangsan or Lisi?'

(43)   a. ?ni renshi Zhangsan haishi ni   bu renshi Zhangsan?
          you know Zhangsan or   you not know Zhangsan
          'Do you know Zhangsan or don't you know Zhangsan?'

       b. ni renshi haishi bu renshi Zhangsan?
          'Do you or don't you know Zhangsan?'

This kind of deletion may also derive other reduced (non-interrogative) coordinate structures, and is not limited to the derivation of disjunctive questions alone. The process obeys the DC and, in Chinese, also Tai's ID Condition.

3.2   A -not-A Questions: [A not AB] Type

I propose that this type of question is derived from a simplex D-structure with an interrogative $INFL^0$ constituent:

(44)

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                        S
              ┌─────────┴─────────┐
             NP                 INFL'
              │            ┌──────┴──────┐
              │          INFL⁰           VP
              │            │        ┌─────┴─────┐
              │            │        V          NP
              │            │        │          △
             ni          [+Q]    xihuan    zheben  shu
             you                  like      this   book
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Phonetic realization of the INFL with [+Q] may take different forms in different Chinese dialects. In Mandarin, the interrogative INFL is realized by a reduplication rule, which copies a sequence immediately following INFL and inserts the morpheme *bu* 'not' between the original and its copy. Depending on the length of the reduplicated sequence, the result can be *xi-bu-xi*, or *xihuan-bu-xihuan*, or even *xihuan zheben shu bu xihuan zheben shu*. These results correspond to (1e), (1c), and (1b), respectively.[6]

According to the proposed analysis, then, the [A not AB] type of questions is, in its syntax, on a par with constituent questions like (45)–(46):

(45)   shei lai   le?
        who come ASP
        'Who came?'

(46)   Zhangsan weishenme meiyou lai?
        Zhangsan why   did-not come
        'Why didn't Zhangsan come?'

In (45) an NP constituent with the feature [+Q] is realized as *shei* 'who,' and in (46) an adverbial constituent with [+Q] is realized as *weishenme* 'why.' If an INFL constituent has the feature [+Q], then it is realized, in Mandarin, by a reduplication. In this way, an A-not-A question is derived from a simplex D-structure source, just as a *wh*-question is. In its syntax, then, the A-not-A question is on a par with *wh*-questions.[7]

This assimilation of A-not-A questions to constituent questions is, of course, not meant to obscure the fact that the A-not-A question has a semantics akin to that of disjunctive questions. At any rate, the semantics of disjunctive questions is similar to that of *wh*-questions, since they both may be said to involve existential quantification (in a definite or indefinite domain). There is little semantic difference between the *wh*-question (47) and the disjunctive question (48):

(47)   Zhangsan he Lisi, ni xihuan na   yige?
      Zhangsan and Lisi you like   which one
      '(Between) ZS and LS, which one do you like?'

(48)   ni   xihuan Zhangsan haishi Lisi?
      you like   Zhangsan or   Lisi
      'Do you like Zhangsan or Lisi?'

In fact, in Karttunen's (1977) analysis, the semantics of *wh*-questions and the semantics of disjunctive questions would be derived from a common source (his 'proto-questions'). So a treatment of A-not-A questions that assimilates them to *wh*-questions not only does not obscure their semantic similarity to disjunctive questions, but in fact helps to capture their close relationship in syntactic terms.[8]

3.3   A-not-A Questions: [AB not A] Type

Questions of this type (as exemplified by [38]–[39]) cannot be generated by reduplication on a par with the [A not AB] type, since B intervenes between A and not-A. I propose that these questions are derived from D-structures with a base-generated coordinate VP of the form [[AB] [not AB]], which may undergo a process of anaphoric ellipsis that deletes the second occurrence of B.[9] We have independent evidence that sentences with juxtaposed VPs not connected by *haishi* may be interpreted as an alternative question:

(49)   ni   chi fan chi mian?
      you eat rice eat noodles
      'Do you eat rice or eat noodles?'

(50)   ni   xihuan Zhangsan xihuan Lisi?
      you like   Zhangsan like   Lisi
      'Do you like ZS or like LS?'

Therefore, a sentence like (40) (= 1b) need not be derived by reduplication, but can be base-generated with a coordinate VP:

(40)   ni   xihuan zheben shu bu xihuan zheben shu?   (=1b)
      you like   this   book not like   this   book?

If anaphoric ellipsis deletes the second occurrence of *zheben shu* 'this book' in (40), then (38) (= 1d), an [AB not A] type of question results:

(38)   ni   xihuan zheben shu bu xihuan?
      you like   this   book not like
      'Do you like this book or not'

Anaphoric ellipsis is a pervasive phenomenon whose occurrence is not restricted to A-not-A questions. It can occur in non-coordinate constructions:

(51)   ruguo ni   bu xihuan zheben shu, jiu   bie   mai.
      if   you not like   this   book then don't buy
      'If you don't like this hook, then don't buy [it].'

Or it can occur across a discourse:

(52)   Q: Zhangsan piping-le   Lisi le   ma?
           Zhangsan criticize-ASP Lisi ASP Q
           'Did ZS criticize LS?'

        A: meiyou, ta meiyou piping.
           no   he did-not criticize
           'No, he did not criticize [him].'

Therefore, anaphoric ellipsis is not a rule specifically proposed to account for the [AB not A] questions. The process should be distinguished from coordinate deletion, since unlike the latter it does not obey the DC, but applies in a way consistent with general principles of anaphora (involving precedence and/or c-command). In a coordinate structure, ellipsis always goes forward.[10] Also, the phenomenon does not exhibit effects of Tai's ID Condition:

(53)   ta bu xihuan neiben shu,   keshi Lisi shuo ni   hen xihuan.
      he not like   this   book, but   Lisi say   you very like
      'He does not like this book, but Lisi said that you like [it] very much.'

Furthermore, although anaphoric ellipsis can occur across independent sentences, coordinate deletion cannot:

(54)   a. ni xihuan ta   ma? bu xihuan ma?
          you like   him PRT not like   PRT?
          'Do you like him? Don't you?'

      b. *ni xihuan ma? bu xihuan ta ma?

Like other deletion processes, anaphoric ellipsis must respect lexical integrity, and cannot strand a preposition:

(55)   *ta xihuan Lisi, keshi wo zhidao ni   bu   xi-.
       he like   Lisi, but   I   know you don't li-
       (Lit.) '*He likes Lisi, but I know you don't li-.'

(56)   ni   rende neige ren   ma? *wo bu ren-.
       you know that person PRT   I   not kn-
       (Lit.) 'Do you know that person? *No, I don't kn-.'

(57)   ni gen ta   shuo hua   ma? *wo bu gen.
       you with him say   words PRT I   not with
       (Lit.) 'Do you with him speak? *No, I don't with.'

(58)   *ta cong zheli chu-qu, keshi wo bu cong.
       he from here go-out   but   I   not from
       (Lit.) 'He from here went out, but I won't from.'

Summarizing, the modular approach treats the paradigm (1) as three distinct sub-paradigms. Example (1a) is a true disjunctive question that may undergo coordinate deletion, resulting in reduced *haishi*-questions. Examples (1c) and (1e) are [A not AB] questions that derive via reduplication from a simplex D-structure source. Example (1d) is an [AB not A] question that has a base-generated coordinate VP that undergoes anaphoric ellipsis. And (1b) may be analyzed as an example of either type of A-not-A question (but see note 6).

4   PROBLEMS SOLVED

Although the modular approach may appear more complex than the one-rule approach, it is so only by appearance. The hypotheses made in this approach are in fact mostly motivated on independent grounds, and as such do not add to the complexity of our grammar. As we saw, both coordinate deletion and anaphoric ellipsis are observed independently with constructions other than questions. The base-generation of coordinate VPs as disjunctive questions is also motivated independently of A-not-A questions of the [AB not A] type (see [49]–[50]). The only rule specifically proposed for the A-not-A question is the reduplication process. On the other hand, this approach is free from the numerous problems noted earlier, and provides an explanation for the facts observed.

Consider the problems concerning the DC and the ID Condition. These problems are posed by the occurrence of A-not-A questions like (1d) and (15), repeated here:

(1d)   ta xihuan zheben shu   bu xihuan?
       he like   this   book not like
       'Does he like this book or doesn't [he] like [it]?'

(15)   ni   bi   ta   mai shu bu bi   ta   mai?
       you force him buy book not force him buy
       'Will you force him to buy books or won't force him to buy [them]?'

But notice that these sentences belong to the [AB not A] type, which according to our analysis is an instance of anaphoric ellipsis, not of coordinate deletion. We have just seen that anaphoric ellipsis does not obey the DC or the ID. Therefore, the fact that [AB not A] questions do not exhibit DC or ID effects is just what we expect.

Consider now the problems concerning lexical integrity and preposition stranding. What we saw earlier was that some (but not all) A-not-A questions seem to disobey the LIH and allow preposition stranding. It should be easy to see now that the problematic examples are those that belong to the [A not AB] type, and not those of the [AB not A] type. The following examples are repeated for comparison:

(59) a. ta xi-bu-xihuan zheben shu?
        he li-not-like   this   book
        'Does he like this book or not?'

   b. *ta xihuan zheben shu bu xi-?

(60) a. ni   cong-bu-cong zheli chu-qu?
        you from-not-from here go-out
        'Will you go out from here or not?'

   b. *ni cong zheli chu-qu bu cong?

That the (b) sentences are ill-formed follows as no surprise, since these examples, as [AB not A] questions, can only be admitted as examples of anaphoric ellipsis. But since ellipsis must obey the LIH and cannot strand a preposition (see [55]–[58]), these sentences are out.

Why are the (a) sentences well-formed? There is good reason to believe that the LIH obtains only as a principle of syntax (and compositional semantics), but does not hold generally in phonology (or morphology). For example, the well-known third tone sandhi rule in Mandarin is obviously unconstrained by the LIH. In the following example, the second syllable *si* in the compound *xiao-si* 'laugh-die' changes from tone 3 to tone 2 in the environment of the following third tone *wo* 'me':

(61) ni [$_{v°}$ xiao-si]   wo le.
     you laugh-dead me ASP
     'You caused me to laugh to death.'

This rule must apply at the phrasal level because it refers to the object NP external to the compound verb. But the rule affects only the second syllable of the compound. A phonological rule like tone sandhi must therefore be free from the constraints of the LIH. Now we have proposed that the [A not AB] questions are formed by a rule of reduplication. As a phonological rule, it is not expected to obey the LIH, and the well-formedness of (60a) and similar sentences is explained.[11]

The problem concerning preposition stranding also does not arise, again because [A not AB] questions involve no deletion, ellipsis, or movement, but reduplication. The reduplication of a preposition does not create an empty category or a configuration disallowed by the filter (24). Therefore, apparent cases of preposition stranding are allowed in such questions.

The difference between disjunctive questions and A-not-A questions regarding the LIH and P-stranding also follows. This is because disjunctive questions involve coordinate deletion, and like those involving anaphoric ellipsis, they cannot violate the LIH or strand a preposition.

Finally, the facts concerning island constraints have a principled explanation. Recall that an A-not-A form cannot occur in a sentential subject or complex NP, but a sequence with *haishi* can:

(62) a. *[wo qu-bu-qu Meiguo] bijiao hao?
          I   go-not-go America more good
          'Is it better that I go to America or that I don't?'

      b. [wo qu haishi bu qu Meiguo] bijiao hao?
          (Same as (a).)

(63) a. *ni   xihuan [renshi-bu-renshi ni de] ren?
          you like   know-not-know you REL person
          'Do you like the person who knows you or the person who doesn't know you?'

      b. ni xihuan [renshi haishi bu renshi ni de] ren?
          (Same as (a).)

Consider first why the A-not-A questions are ill-formed. We have analyzed the A-not-A questions as simplex sentences with a [+Q] constituent, on a par with other constituent questions. Note that a *wh*-phrase can occur in a root clause, or it can occur in a complement clause and have scope over the matrix (i.e., be interpreted as a direct question):

(64) ni   weishenme meiyou lai?
      you why   did-not come
      'Why didn't you come?'

(65) ni   juede [ta weishenme bu gen   wo shuo hua]?
      you feel   he why   not with me speak word
      'Why$_i$ do you think [he didn't want to talk to me t$_i$]?'

This property of *wh*-questions is reminiscent of 'long-distance movement,' although there is no overt *wh*-movement in the language. Our analysis of A-not-A questions captures the fact that they also exhibit the same property:

(66)   ni   you-mei-you   lai?
       you have-not-have come
       'Did you come or not?'

(67)   ni   juede [ta hui-bu-hui   shengqi]?
       you feel   he will-not-will angry
       'Do you think he will be angry or do you think he won't?'

At the same time, note that a direct *wh*-question with *weishenme* 'why' cannot be formed with the *wh*-phrase occurring in an island:

(68)   *[ni   weishenme mai shu] bijiao hao?
         you why   buy book more good
         'What is the reason x such that it is better that you, for reason x, buy books?'

(69)   *ni   xihuan [weishenme piping   ni   de] ren?
         you like   why   criticize you REL person
         'What is the reason x such that you like the man who for reason x criticized you?'

If A-not-A questions are a kind of *wh*-question, then the fact that they exhibit island effects is again no surprise. It is possible that whatever principle excludes the *wh*-phrase *weishenme* 'why' in (68) and (69) would also exclude the A-not-A constituent (a *wh*-phrase in our sense) in (62a) and (63a). In fact, as I have shown in Huang (1982), the island proper-ties of A-not-A questions and *why*-questions are readily derivable from a general principle of UG, namely, the ECP (Chomsky 1981). In particular, assume that the question constituents, although they do not *wh*-move in Syntax, do undergo abstract movement in LF. The traces of both the interrogative adverb *weishenme* 'why' and the interrogative INFL (pho-netically the A-not-A constituent) will be subject, among other things, to the ECP. According to Chomsky's original formulation of it, the ECP requires a trace to be governed either by a lexical category (e.g., a verb), or by its antecedent (the moved category). A trace can be governed by a verb only if it occurs within the maximal projection of the verb (i.e., in VP). In the cases under consideration, since adjuncts like *weishenme* 'why' and the INFL constituent do not occur within VP, they are not lexically governed. Therefore, according to the ECP, their traces must be antecedent-governed. This means that an adjunct or an INFL constitu-ent can only be moved a short step at any one time, to a landing site that is close enough to govern its trace at the extraction site. This locality requirement prevents an adjunct from moving across an island, and we have a principled explanation for the island effects of both A-not-A ques-tions and certain *wh*-questions.[12]

As for disjunctive questions, the fact that they do not exhibit island effects follows from the postulation that their derivation involves no movement, nor traces of any kind that are subject to the ECP (or Subjacency). It is well known that deletion processes do not obey island constraints, hence the well-formedness of sentences like (62b) and (63b).

5   INDEPENDENT MOTIVATIONS

We have seen that under the modular approach, all the problems noted in Section 2 disappear and the relevant facts receive a principled explanation. But this approach is not motivated by these considerations alone. In this section, I will present comparative evidence as independent support for the proposed analysis.

5.1.   Taiwanese *kam*-questions

Many Chinese dialects have a question form illustrated by the Taiwanese examples following:

(70)   li   kam beh   lai?
       you Q   want come
       'Do you want to come?'

(71)   li   kam chaiia: i   kio shiami mia:?
       you Q   know he call what   name
       'Do you know what his name is?'

In each of (70) and (71), there is an element, *kam*, that occurs between the subject and the VP. The presence of this element, presumably a result of fusion from *ka:-mng* 'dare-ask' ('may I dare ask'), is obviously what makes (70)–(71) questions. Note that *kam* occurs in the position of the INFL. The existence of *kam*-questions in Taiwanese thus provides important evidence for our analysis, since it shows that a question can indeed be formed with an interrogative INFL constituent. I propose that the *kam*-questions are Taiwanese counterparts of the A-not-A questions in Mandarin (more precisely, the [A not AB] type). That is, whereas the [+Q] INFL is realized by reduplication in Mandarin, it is directly realized as *kam* in Taiwanese. *Kam*-type questions are used in many other dialects, in fact, as Zhu (1985) has pointed out. To cite just a few examples, in addition to *kam* in Taiwanese, we have *a* in Shanghai and Suchou, and *ke* in Early Mandarin:

(72)   nong a le   va?   (Shanghai)
       you   Q come PRT
       'Will you come?'

(73)   ni   ke you kong?   (Early Mandarin)
      you Q have time
      'Do you have time?'

My proposal that *kam*-questions and A-not-A questions are different
realizations of the same clement in different dialects converges with
that of Zhu (1985), who cites extensive cross-dialectal data showing
that the *kam*-type and the A-not-A type are counterparts of each other
across different dialects. A difference between my analysis and that of
Zhu's is that whereas he analyzes the *kam*-question as a variant of the
A-not-A question and the latter, in turn, as a variant of the disjunctive
question, I have treated the [A not AB] type of question as a variant of
the *kam*-question, and the latter in turn, in its syntax, as a type of con-
stituent question. The *wh*-question-like property of *kam*-questions is
evident from the fact that they exhibit long-distance scope dependency
([74]–[75]) and island effects ([76]–[77]):

(74)   li   kam u   chi:?
      you Q   have money
      'Do you have money?'

(75)   li   siu: i kam e   lai?
      you think he Q   will come
      'Do you think he will come?'

(76)   *[i kam u   lai] kha hou?
      he Q   have come more good
      (Lit.) '*That he *kam* has come is better?'

(77)   *li   kha ai [kam u   chi: e] lang?
      you more like Q   have money REL person
      (Lit.) '*You prefer the person who *kam* has money?'

5.2   Complementary Distribution of *kam* and A-not-A

As evidence for the claim that *kam*-questions and A-not-A questions
are of the same type, Zhu (1985) shows that these two forms gener-
ally do not co-occur in the same dialect—a kind of 'complementary
distribution.' To the extent that this is true, our analysis of course
receives additional strong support. However, there are exceptions to
Zhu's claim. As counterexamples, Malmqvist (1986) cites sentences
like the following from *Xi You Ji* (*Journey to the West* or *The Adven-
tures of the Monkey*), a book that is believed to have been written in a
kam-type dialect:

(78) ye hai bu zhi   shi ta   bu shi ta   li.
      also still not know be him not be him PRT
      'Also (we) still don't know whether it was him or wasn't him.'
      (*XYJ*, 24.334)

(79) you-ge   shenme Qi-Tian-Da-Sheng   cai lai zheli fou?
      have-one what   QTDS (Monkey's title) just came here not
      'Was there some kind of a QTDS who just came here or not?' (*XYJ*,
      6.79)

(80) ni   ba shifu   tuo guoqu bu shi?
      you BA master drag over   not be
      'Do you want to drag the Master over or not?' (*XYJ*, 22.229)

It is even possible to find both a *kam*-word (*ke* in the following) and an
A-not-A form within the same sentence:

(81) kan ke qing Lao Sun bu qing.
      see Q invite Lao Sun not invite
      'See if [they] will invite me (Lao Sun) or not invite [me].' (*XYJ*, 5.60)

Zhu (1985) himself notes some examples of what he refers to as 'mixed
forms':

(82) Xi-Men-Qing wen Wen-Xiu-Cai: shu ke xie-le bu ceng?
      Xi-Men-Qing ask Wen Xiu-Cai book Q wrote not have
      'XMQ asked WXC: have the books been written or haven't?'
      (*Jin Ping Mei*, 67.1870)

(83) wei zhi   lao die ke yiyun bu yi.
      not know old dad Q permit not permit
      '(I) wonder if Old Dad would permit it or not permit [it].' (*Jin Ping
      Mei*, 69.1961)

In Taiwanese, 'mixed forms' of the following kind are also acceptable to
some speakers:

(84) li   kam e   lai be?
      you Q   will come not-will
      'Will you come or won't?'

(85) li   kam bat   chit-e lang (a) m-bat?
      you Q   know this person or not-know
      'Do you know this person or don't know [him]?'

The existence of these sentences (especially those with the 'mixed forms') poses a nontrivial problem for Zhu's analysis and the claim that A-not-A questions are in complementary distribution with *kam*-questions. Notice, however, that all these examples are examples of the [AB not A] type, or can be seen as of this type (e.g., [78], with B being null in [AB not A]). Crucially, the counterexamples do not belong to the [A not AB] type, and no example with both a *kam*-form and an [A not AB] form seems to exist:

(86)   a.   ni   ke gaoxing?
            you Q   happy
            'Are you happy?'

       b.   ni gao-bu-gaoxing?

       c.   *ni ke gao-bu-gaoxing?

(87)   a.   li   kam bat   chit-e lang?
            you Q   know this person

       b.   li bat-m-bat chit-e lang?

       c.   *li kam bat-m-bat chit-e lang?

If this is correct, then the occurrence of (78)–(85) does not present a problem for my analysis (though it does for Zhu's). In fact, these sentences provide evidence for the claim that the [AB not A] questions should be distinguished from the [A not AB] type. And the complementary distribution of the latter type with the *kam*-form within a sentence provides an argument for treating them as allomorphs of the same morpheme.

5.3   Directionality and Phonetic Identity

A few Taiwanese A-not-A questions can take either the [A not AB] form or the [AB not A] form:[13]

(88)   a. li   bat-m-bat   khi Bikok?
           you have-not-have go   America
           'Have you been to America?'

       b. li bat khi Bikok m-bat?

(89)   a. li   ai-m-ai   chit-e lang?
           you like-not-like this   person
           'Do you like this person?'

       b. li ai chit-e lang m-ai?

However, in the following sentences only [AB not A] forms are acceptable:

(90) a. li   u   cia hun   bou   cia hun?
          you have eat tobacco not-have eat tobacco
          'Do you smoke or not smoke?'

      b. li u cia hun bou?

      c. *li u bou cia hun?

(91) a. i e   lai   be   lai?
          he will come not-will come
          'Will he come or not come?'

      b. i e lai be?

      c. *i e be lai?

A key difference between these two groups of sentences is the following. In (88) and (89) the verbs *bat* 'have experience in' and *ai* 'like' have transparent negated forms, *m-bat* and *m-ai*, which contain the negative morpheme *m* plus a sequence phonetically identical to the affirmative form. But in (90) and (91), the negative forms of *u* 'have' and *e* 'will' are *bou* and *be* (not *m-u* or *m-e*). These forms are not analyzable into a sequence of negation followed by a phonetically identical copy of the affirmative. Why should this difference correspond to a difference in acceptability observed here? Under the proposed analysis, the answer is simple. Since [A not AB] questions are formed by reduplication, the result of reduplication will give two phonetically identical copies. So (88a) and (89a) are acceptable, where the negative forms can be obtained by reduplication. But (90c) and (91c) are unacceptable, since the sequences *u bou* and *e be* cannot be obtained by reduplication. On the other hand, all of the [AB not A] questions are acceptable, because these questions are instances of anaphoric ellipsis. A necessary condition for ellipsis is that the item to be deleted is in some way (phonetically or referentially) identical to some other item in a given context, but such a process does not require what is left over to be phonetically identical to something else. Therefore, all the (b) sentences in (88)–(91) are well-formed regardless of whether their verbs have transparent negative forms or not.

5.4   Tone Sandhi

Finally, our analysis receives important support from a fact of Taiwanese tone sandhi. In Taiwanese (and other South Min dialects), each tone is associated with two forms: a 'citation tone' and a 'sandhi tone.' In each of the [A not AB] questions that follow, both the original verb (*bat, si, ka:*) and its copy are pronounced with a sandhi tone.

(92) a. li   bat-m-bat   khi Bikok?
          you have-not-have go America
          'Have you been to America?'

b. li si-m-si   Tan Siansi:?
   you be-not-be Tan Mr.
   'Are you Mr. Tan?'

c. li ka:-m-ka: sai chhia?
   you dare-not-dare drive car
   'Do you dare to drive a car?'

But in the disjunctive questions (with *asi* 'or') that follow, only the second occurrence of the verb uses a sandhi tone. In the position preceding *asi* 'or' the elements *bat, si, ka:* must retain their citation tones.

(93) a. li   bat-asi-m-bat   khi Bikok?
         you have-or-not-have go America
         'Have you been to America?'

      b. li   si-asi-m-si   Tan Siansi:?
         you be-or-not-be Tan Mr.
         'Are you Mr. Tan?'

      c. li   ka:-asi-m-ka: sai chhia?
         you dare-or-not-dare drive car
         'Do you dare to drive a car?'

Since R. Cheng (1973) (cf. also Chen 1987), it has been well known that the choice between a citation tone and a sandhi tone in a given environment largely depends upon the syntactic structure of the environment. The core principle is that a tone immediately followed by a major phrase boundary (end of an NP, VP, S, etc.) retains its citation form, and in other environments it must take its sandhi form. The fact that the first *bat, si,* and *ka:* in each of (93) must retain their citation tones shows that immediately before *asi* 'or' there is a major phrase boundary. Since we analyze these sentences as deriving from full bi-sentential sources, this fact is obtained if we assume that coordinate deletion does not take place until after the tone sandhi rule, or that the brackets and boundaries are retained under deletion. On the other hand, since the sentences in (92) are derived from simplex sentence sources by reduplication of the first verbal element in VP, and since there is never a major phrase boundary between the verbal element and its negative copy, all of these verbal elements must use their sandhi tones. The difference between (92) and (93) thus argues strongly, again, for treating A-not-A questions as different syntactic constructions from true disjunctive questions.

6 CONCLUSION

Summarizing, I have argued that the paradigm in (1) should be analyzed as involving three separate construction types: true disjunctive questions,

A-not-A questions that are derived by reduplication, and A-not-A questions that are instances of anaphoric ellipsis. This analysis explains a number of otherwise problematic facts concerning lexical integrity, preposition stranding, island constraints, and certain conditions governing the application of coordinate deletion. It also accounts for the distribution of certain alternative question forms across Chinese dialects and certain phonological facts of Taiwanese questions. I hope this chapter has demonstrated the use of a modular approach to an understanding of the relevant constructions in Chinese, and to linguistic explanation in general.