What is A in Mandarin A-not-A Questions?

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In this paper, I argue that A refers to I° in Mandarin A-not-A questions, which can either be a modal, an aspect marker, a raised verb, a verb with aspect suffixation, or a preposition. I also argue t hat the forma tion of A-not-A questions follows a suc cessive cyclic derivation; i.e. I° moves to Neg ° to form the +Q tem plate [A-not], with its trace undeleted for not being a strict head movement, and then [A-not] moves to C° for the surface structure. My analy sis also offers a sy ntactic account for why A-*meiyou*-A is ungrammatical and why VO-not-VO is not attested in A-not-A questions.

1. Introduction

(1) and (2) are examples of Mandarin A-not-A questions (Dai 1990; Huang 1991; Ernst 1994; Wu 1997; Law 2006; Hagstrom 2006), where the disyllabic verb *xihuan* or only its first syllable *xi* is referred to as A, two o f which is separated by a negator, either *bu* or *mei*, depending on whether the pr edicate is individual-level or stage-level (cf. Lin 2003; Liu 2008). (2) illustrates the so-called grammatical violation of lexical integrity (Huang 1991); i.e., only *xi*, the first syllable of the verb *xihuan* 'like', serves as th e first A:

(1) Ni xihuan bu xihuan Ditelü?
    you like not like Detroit
    'Do you like Detroit or not?'
(2) Ni xi bu xihuan Ditelü?
    you like not like Detroit
    'Do you like Detroit?'

Other items that can function as A in A-not-A questions include modals as shown in (3), prepositions as in (4), and frequency adverbs as in (5). Also note that in (4)a, it is the preposition *gei* 'to' that functions as A; and in (4)b, it is the verb *da* 'to make' that functions as A. The contrast between (5)a and (5)b shows that in a sentence with the frequency adverb *chang* 'often' only *chang* can function as A but not the whole adverb. I will offer explanations in 3:

(3) Zhangsan hui bu   hui lai?
     Zhangsan can not can come
    'Can Zhangsan come?'
(4) a. Lisi gei bu gei ni   da   dianhua?
         Lisi to not to you make telephone
         'Does Lisi call you?'

    b. Lisi gei ni   da   bu   da   dianhua?
         Lisi to   you make not make telephone
         'Does Lisi call you?'
(5) a. Wangwu chang bu chang chi Zhongguo fan?
         Wangwu often not often   eat China   food
         'Does Wangwu often eat Chinese food?'

    b. *Wangwu changchang chi bu   chi Zhongguo fan?
          Wangwu   often   eat not eat China   food
         'Does Wangwu often eat Chinese food?'

2.   Literature on the Properties of A-not-A Questions

2.1. Huang (1991): A-not-A not Derived from Disjunctives
        Huang (1991) has convincingly argued that A-not-A questions are not
syntactically derived from di sjunctive questions as other li nguists have proposed (C hao
1968; Li and Thompson 1981); Huang (1991) further divides A-not-A questions into two
types: V-not-VO, like (1), and VO-not-V like (6):

        (6) ?Ni xihuan Ditelü bu xihuan?
             you like   Detroit not like
            'Do you like Detroit or not?'

Many native Mandarin speakers I have consulted, however, would put a ?   before (6).
Yue-Hashimoto (1993), Zhang (1990), and Zhu (1990) have reported that VO-not-V
exists in other Chinese dialects. Nevertheless, despite the acceptance of VO-not-V by
some Mandarin speakers, the violation of lexical integrity is no longer allowed in this
structure, as shown in (7). VO-not-VO like (8) is not possible, for which no literature has
offered an analysis, a point I will come back to in 3.

        (7) *Ni   xi   Ditelü bu   xihuan?
             you li(ke) Detroit not like
            'Do you like Detroit or not?'
        (8) *Ni xihuan Ditelü bu   xihuan Ditelü?
             you like Detroit not like   Detroit

‘Do you like Detroit or not?’

Huang (1991) argues that the V-not-VO structure has an INFL, as shown in (9), with an interrogative feature +Q that is realized by a verb copying rule that copies a sequence immediately following INFL and inserts *bu* or *mei*; the length of the copied sequence is a variable; for example, it can either be *xi* or *xihuan* for ‘like’ as shown in (2). The +Q INFL can also be found in wh-questions, which explains why A-not-A questions have similar distributions to those of wh-questions. Hagstrom (2006) has also shown the similarity between A-not-A questions and wh-questions in terms of island effects and focus marking.

(9) Ni xihuan bu xihuan Ditelü?
    you like   not like   Detroit
    ‘Do you like Detroit?’

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          S
         /\
      NP  INFL
      |    /\
      |   |   VP
      |   |   /\
     ni +Q xihuan Ditelü                +Q = xihuan bu
     you  like    Detroit                    like    not
```

Hagstrom (2006) notices that both A-not-A questions and wh-questions can both be embedded, as shown in (10) and (11), whereas yes-no *ma*-questions cannot, as shown in (12). Such a contrast does make A-not-A questions look like an embeddable subtype of yes-no questions, cf. Cheng (1991).

(10)   Wo xiang zhidao ta shenmo shihou lai.
        I   want know he what   time   come
        ‘I wonder when he is coming’
(11)   Wo xiang zhidao ta lai   bu   lai.
        I   want know he come not come
        ‘I wonder if he is coming or not.’
(12)   *Wo xiang zhidao ta lai   ma.
         I   want   know he come Y/N
        ‘I wonder if he is coming.’

Huang’s contribution lies in the distinction between A-not-A and disjunctive questions and in the connection of A-not-A questions and wh-questions. His original argument for the existence of +Q in A-not-A questions will be further developed in this paper.

2.2. Ernst (1994): +Q as a Head Immediately C-Commanding V

Ernst (1994) further argues that +Q is a head immediately c-commanding V or a feature on V. The motivation is to account for the ungrammaticality of (13), since higher modal adverbs like *yiding* 'definitely' cannot take questions in their scope, considering that they only operate on a proposition but not a question (Cinque 1999). Consequently, according to Ernst, (13) is semantically anomalous since +Q is above V but lower than the modal. We will see in 0 that *yiding* 'definitely' can be under the scope of the B- not-B, a different type of question construction.

(13) *Ta yiding   qu bu   qu?
       he definitely go not go
       'Is he definitely going?'

Ernst (1994) notices the scope relation between A-not-A and sentential modal adverbs, but we still need to pinpoint the exact position of the proposed +Q.

2.3. Wu (1997): A-not-A vs. B-not-B

Wu (1997) distinguishes *shi-bu-shi* or B-not-B questions from A-not-A questions, based on the fact that the former is sentential and takes scope over sentential adverbs and modals, as shown in (14) and (15).

(14) Zhangsan shi-bu-shi yiding   dei   qu?
      Zhangsan B-not-B   definitely got.to go
      'Does Zhangsan definitely need to go?'
(15) Zhangsan shi-bu-shi yinggai qu xuexiao?
      Zhangsan B-not-B   should go school
      'Should Zhangsan go to school?

(14) and (15) show that *shi-bu-shi* has scope over the adverb *yiding* 'definitely' and the modal *yinggai* 'should'. Also note that the *shi* in B-not-B is no longer the copula since in (14) and (15), the lexical verb is not *shi* 'to be' but *qu* 'to go'. I argue that B-not-B is base-generated in C°, which gives them not only the power of having scope over sentential modal adverbs but also the power of determ ining the force of the sentence. The ungrammatical *shi-mei-shi* further helps argue that B-not -B is base-generated at a position higher than INFL, since it is not sensitive to the types of predication downstairs.

2.4. Dai (1990): A Phonology-Based Copying Rule?

Dai (1990) argues that the variable length of the copied sequence in V-not-VO, as illustrated in (1) and (2), i.e. the grammatical lexical disintegrity, is determ ined by a phonological rule on metrical requirement; i.e., Mandarin follows the Disyllabification

Rhythm Rule. He further shows, for example, that although *mei-you* is usually interchangeable with *mei*, as in (16)

(16) Ta mei-you lai.   =   Ta mei lai.
      he not-have come   he not   come
      'He did not come.'

it is not the case, howe ver, in A-not-A questions. In A-not-A questions, only *mei* is allowed, because only *meilai* 'didn't come' instead of *meiyoulai* 'did not come' forms a disyllabic troche; compare (17) and (18); see also Duanmu (2002) on Chinese stress patterns:

(17) Ta lai   mei lai?
      he come not come
      'Did he come?'
(18) *Ta lai   mei-you   lai?
       he come not-have come
       'Did he come?'

I will argue in 0 that the unavailability of *mei-you* in A-not-A questions is also caused by syntactic factors.

3. A: Main Predicate or What?

Ernst (1994), Huang (1991), and Li and Tho mpson (1981) have argued that in A-not-A questions, A is the m ain predicate. It has never been clarified, however, what we mean by the 'm ain predicate' while discuss ing A-not-A questions. F or example, main predicates can refer to the thematic or lexical verbs like *xihuan* 'like' as we have seen in (1) and (2). Alternatively, main predicates can refer to the highest ve rb or aux iliary in a sentence (Ross 1969). Recall also that A can be a modal verb as shown in (3). Furthermore, the experiential perfect marker *guo* can either follow A-not-A, as shown in (19), or follow each A, as shown in (20):

(19) Ni qu mei qu guo   Meiguo?
      you go not go ExpAsp[1] America
      'Have you ever been to America?'
(20) Ni qu guo   mei qu guo   Meiguo?
      you go ExpAsp not go ExpAsp America

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[1] Some abbreviations used in this article: E xpAsp: experiential as pect; DurAsp: durative aspect; Y/N: yes-no question marker.

'Have you ever been to America?

(21) and (22) illustrate the same phenomenon for the suffixal durative aspect-marker *zhe*. Again, A seems to be something more than the lexical verb:

(21)   Lisi shou-li   na mei na zhe   yiben shu?
         Lisi hand-in hold not hold DurAsp a   book
         'Is/was Lisi holding a book in his hand?'
(22)   Lisi shouli   na   zhe   mei na zhe   yiben shu?
         Lisi hand-in hold DurAsp not hold DurAsp a   book
   'Is/was Lisi holding a book in his hand?'

Consequently, Ross (1969)'s characterization of the main verb being the structurally highest verb is the most relevant, given our concerns. To be more specific, I argue that A refers to I°, which can be realized either as modals, aspectual markers; or prepositions; and the +Q of A-not-A is located in C°, like B-n ot-B; but the former reaches C° through successive cyclic m ovements rather than being base-generated like the latter. In the following sections, I will go more deeply into how modals, bare-verbs, adverbs, and aspects form A-not-A questions.

3.1. A-not-A for Modal Verbs
     In A-not-A formation, I argue that +Q is realized in C° as a template of [A-Neg]; such a construal is consistent with the formation of one type of yes-no question as discussed by Cheng (1991)[2]. For example, as shown in (23), like the speech-act yes-no question particle *ma* that is bas e-generated in C°, the negator *mei* or *bu* is capable of being moved from Neg° to C°, attracting its complement to raise to form a yes-no question:
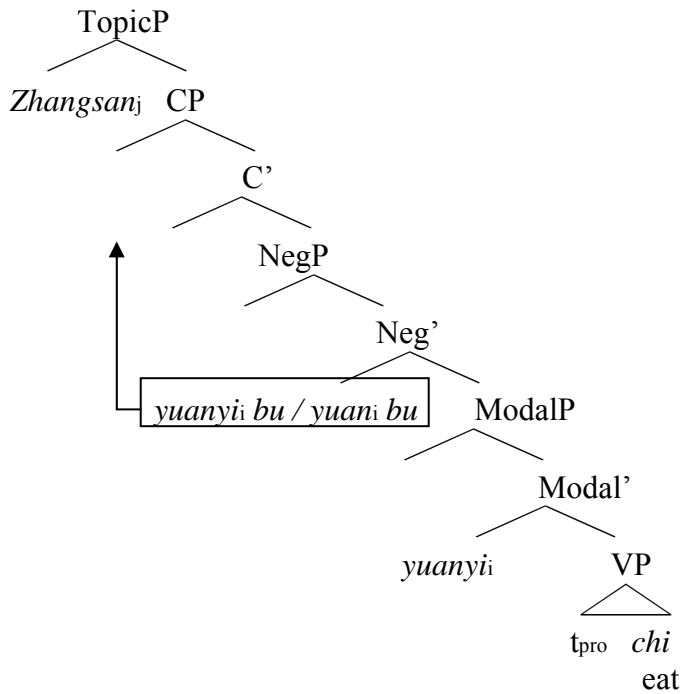
(23)   (a)   Zhangsan lai   ma?
                 Zhangsan come Y/N
                 'Does Zhangsan come?
         (b)   Zhangsan lai   bu?
                 Zhangsan come not
                 'Does Zhangsan come?'
         (c)   Zhangsan lai   mei?
                 Zhangsan come not
                 'Did Zhangsan come?'

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[2] Hagstrom (2006) argues that yes- no *ma* occupies a sen tence-final position higher than that of an interrogative negator.

TopicP
Zhangsan_i CP
C'
ma / NegP
Step I
Neg'
bu/mei   IP
pro_i   I'
VP
Step II
t_pro lai
come
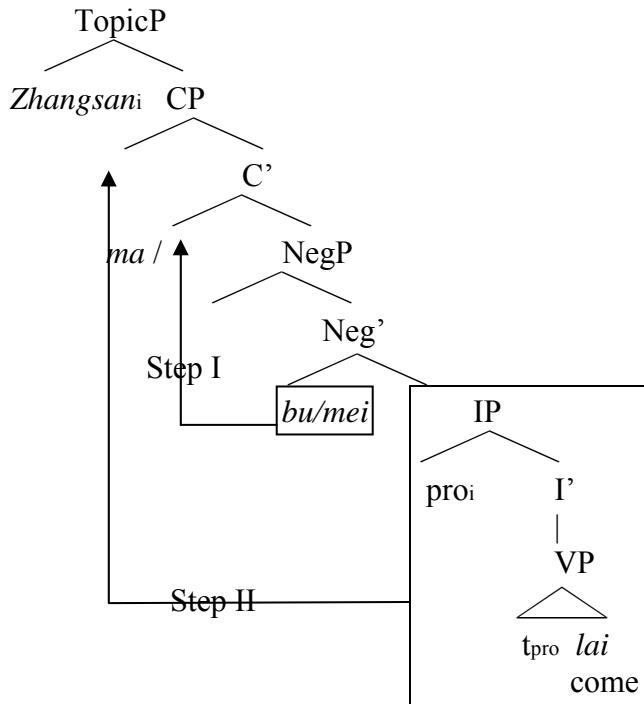
In yes-no q uestions, only Neg° undergoes head-movement to reach C°. In A-not-A questions, however, I argue that it is [A-not] that moves to C° from Neg°. Before the Neg-to-C movement, I° is adjoined to Neg°, filling in the [A-Neg] template. The partial spell-out of I°, however, is phonologically c onditioned. Such a phonological realization of +Q is blind to syntactic or lexical boundary, which results in lexical disintegrity; i.e. any segment of A° that starts with the first syllable of I° is capable of filling the [A-Neg] template. Furthermore, since this is not a rigid head-movement but an adjoining of a part of a constituent, the trace of I° is not deleted. After the adjoining, the [A-Neg] template is attracted to C° to finalize the question fo rmation. Through such an adjoining and non-trace-deletion process, we arrive at the surface structure. (24) illustrates how A-not-A questions with m odal verbs are form ed through the abov e-mentioned successive cyclic movements. *Yuan* or *yuanyi* 'willing to' f rom I° is first adjoined to *bu* with its trace maintained, forming an [A-Neg] template at Neg°. Then the template is attracted to C° where the force of the whole sentence is determined.

(24)   Zhangsan yuan(yi) bu yuanyi chi?
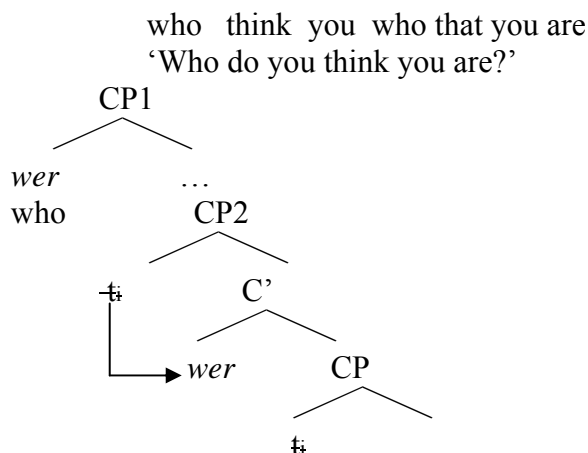   Zhangsan willing not willing eat
        'Is Zhangsan willing to eat?'

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         TopicP
        /      \
  Zhangsanⱼ    CP
              /   \
                   C'
                  /   \
                       NegP
                      /     \
                           Neg'
          ┌──────────────────┐    \
          │ yuanyiᵢ bu / yuanᵢ bu │   ModalP
          └──────────────────┘   /      \
                                      Modal'
                                     /      \
                               yuanyiᵢ       VP
                                            / \
                                        tₚᵣₒ  chi
                                              eat
```

The involvement of Asp° and Modal° explains why we have the alternation of A- *bu*-A and A-*mei*-A, which are sensitive to the type of predication. Compare the minimal pair, (25) and (26): they differ from one another only in the choice of the negator; such difference makes them end up having different interpretations, the former habitual and the latter perfective:

(25) Ta lai   bu lai?
      he come not come
      'Does he come?'

(26) Ta lai   mei lai?
      he come not come
      'Did he come?'

I°'s being the starting point of A-not-A formation explains why (13) is impossible; recall that the senten tial adverbial *yiding* 'definitely' is higher than IP, and therefore it does not allow questions within its scope.

In their analysis of German wh-copy construction, Fanselow and Mahajan (2000) account for the undeleted wh-traces by arguing th at they are actually not on the chain of head-movement: the intermediate wh-word, *wer* 'who', as shown in (27), actually undergoes head-movement from its intermediate [Spec, CP] position, and therefore it survives the deletion process; what actually is deleted is the 'who' that is on the chain for wh-movement; the untouched intermediate 'who' becomes a part of a separate chain.

(27)   Wer glaubst du, wer   daß du bist?

who   think   you   who that you are
'Who do you think you are?'

```
          CP1
         /    \
    wer         ...
    who          CP2
               /    \
           t̶i̶       C'
                   /    \
              → wer       CP
                        /    \
                      t̶i̶
```

Another example of undeleted trace is the verb-doubling phenomenon in Nupe predicate cleft constructions (Kandybowicz 2000) as shown in (28).   Koopman (1984) argues that the trace of the verb that is raised to C° for clefting is spelled out as a resumptive verb[3]:

(28)   Gigi   Gana gi gulu   o.
       eating Gana eat vulture Focus
       'It was eating that Gana did to the vulture (as supposed to riding it.)

The reason why Wu (1997), Ernst (1994), and Huang (1991) did not locate A-not-A in C° is that all wh-movements in Mandarin were assu med to happen at LF. Recent works on overt movements by Kayne (1998), as well as Koopman (2000) on E nglish wh-subject vs. wh-object m ovements, and Liu (2002) on the co-occurrence of wh-words and universal quantifier in Mandarin, suggest that Chinese has overt-wh-movement at least in, for example, quantification.
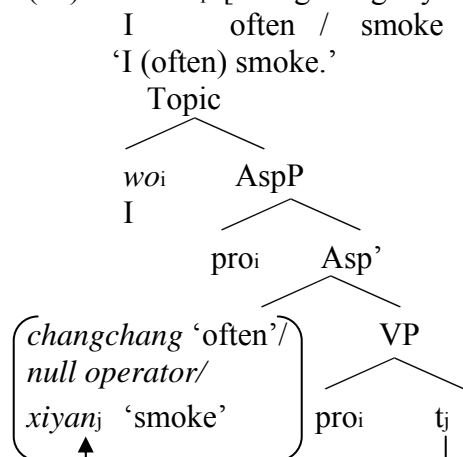
     The proposal to locate [A-Neg] in C° is also based on the existence of the *shi-bu-shi* or B-not-B question particle. I have shown   in 0 that B-not-B originates higher tha n modal adverbs, modals, and AspP. I propose th at B-not-B is base-generated in C°, as a realization of +Q. W ithout all the derivations starting from I-to-Neg movement, B-not-B is able to have scope over all the above items.

3.2 A-not-A for Bare Activity and Stative Verbs

     Mandarin AspP can be realized as activity and stative verbs that are raised from V°, or by a null habitual operator that can also be realized as an frequency adverb *changchang* 'often', as shown again in (29), cf. Koopman (1984) that an Asp° has to be lexicalized:

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[3] Alternatively, Nunes (2004) also argues that   the phonetic realization of m ultiple chain links arises through head-movement that is followed by morphological reanalysis.

(29)   Wo $_{AspP}$[changchang/xiyan$_i$ $_{VP}$[t$_i$]].
         I   often / smoke
        'I (often) smoke.'

```
           Topic
          /     \
        wo_i     AspP
        I       /    \
              pro_i   Asp'
                     /    \
    ┌─────────────────┐    VP
    │ changchang 'often'/    /  \
    │ null operator/      pro_i  t_j
    │ xiyan_j 'smoke' │
    └─────────────────┘
```

(30) and (31) are examples of A-not-A questions involving a bare verb and adverbial; i.e., A can refer to either the lexical verb or the habitual aspect marking adverb *changchang*:

(30)   Zhangsan xi(huan) bu xihuan zheben shu.
        Zhangsan like   not like   this   book
        'Does Zhangsan like this book?'
(31)   Zhangsan chang bu chang lai?
        Zhangsan often not often come
        'Does Zhangsan come often?'

In the derivation of (30) and (31), Asp° is occupied by the habitual aspect marker, the adverb *chang* 'often', or by a raised stative or active verb like *xiyan* 'smoke'. After I°/Asp° is filled with *chang* 'often' or *xiyan* 'to smoke', what follows is the same successive cyclic movements we have discussed in (24), i.e. I-to-Neg and then Neg-to-C; again, the adjoining of I to Neg does not delete its trace.

Note that only monosyllabic form of *changchang*, i.e. *chang*, is used in (31); when the disyllabic form is used, the sentence does not sound very natural. This is consistent with Dai (1997)'s claim of the Disyllabification Rhythm Rule that we have discussed in 0:
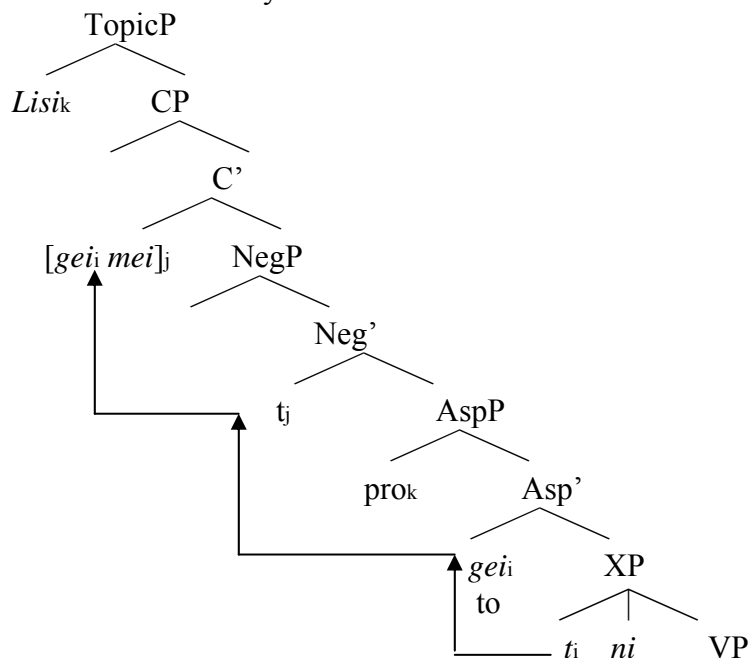
(32)   ?Zhangsan chang(chang) bu changchang lai.
         Zhangsan often   not often   come
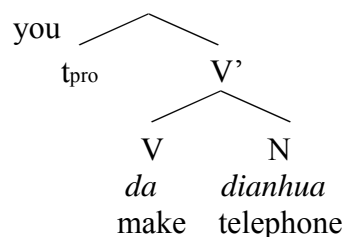   'Does Zhangsan come often?'

By arguing for V-to-I and then I-to-Neg movements, one can also explain why V O-not-VO is not possible, i.e. (8), repeated below as (33): what moves is only I° or part of it, but not the whole VP involving the internal argument *Ditelü* 'Detroit' in it.

(33)   *Ni xihuan Ditelü bu xihuan Ditelü?
     you like   Detroit not like   Detroit
     'Do you like Detroit or not?

I suggest that A-not-A questions with A as a preposition, as shown in (4), repeated below as (34), have similar structure to (24). The PP of *ei ni* 'to you' originates in a complement position of VP and then moves to an XP above VP; after this, the preposition moves to I° for A-no t-A question formation. For other non-com plement PP's, I suggest that they originate in   an XP above VP. The preposition   *gei* 'to' first moves to Neg and then the template [*gei mei*] moves to C°. Actually Mandarin prepositions have all been identified as co -verbs (Li and Th ompon 1981), a result of the grammaticalization of v erbs; for ex ample *gei* can also be a verb meaning 'to give' and *gen* 'with' is also a verb 'to follow'; consequently the Prep-to-I movement resembles that of V-to-I movement. I use a simplified version of the PP struc ture with focus on its A-not-A question formation.

(34)   Lisi gei mei gei ni da   dianhua?
     Lisi to not to you make telephone
     'Did Lisi call you?'

```
            you ⌒
          t_pro        V'
                      ⌒
                   V      N
                   da    dianhua
                  make  telephone
```

(35) and (34) form a minimal pair. They further support the idea that prepositions have verbal features in Mandarin, since they are sensitive to the type of predication, as seen from their choice of either *bu* or *mei* for negation.

(35) Lisi gei bu   gei ni da   dianhua?
      Lisi to not to   you make telephone
      'Does Lisi call you?'

3.3. A-not-A Questions for Sentences with Aspect Marking
3.3.1. Progressive *Zai*
      The formation of A-not-A questions with progressive aspect marking is not too much different from my treatment of modals as shown in (24). Now it is   *zai* that occupies Asp° and moves to Neg° that is occupied by *mei*
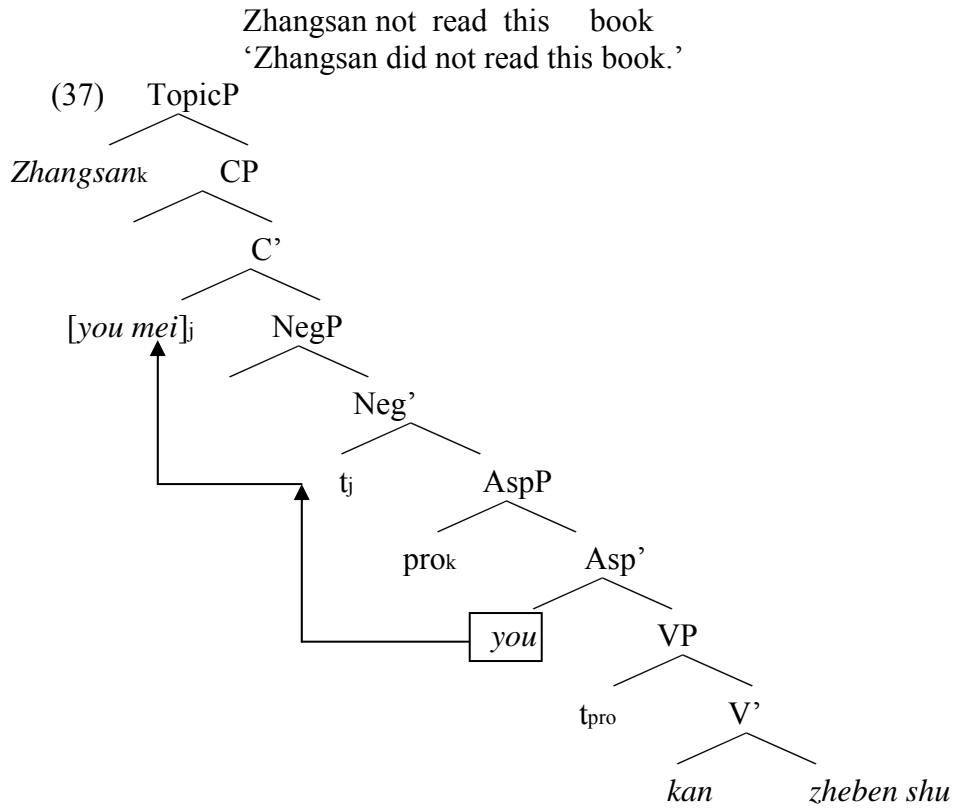
3.3.2. Culminative Perfective Aspect
3.3.2.1. When A is *You*
      Let us take a look at the simpler case first when I° is occupied by the culm inative perfective aspect particle *you* as shown in (36)a[4]. (36)b and (36)c are the corresponding affirmative and negative sentences. (37) shows the derivation of (36)a, where A-not-A emerges as *you-mei-you*:

(36)   a.   Zhangsan you mei you   kan zheben shu?
               Zhangsan have not have read this   book
               'Has Zhangsan read this book?'
       b.   Zhangsan kan zheben shu   le.
               Zhangsan read this   book Perf
               'Zhangsan has read this book.'
       c.   Zhangsan mei kan zheben shu.

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[4] I will not distinguish the two *le*'s in Mandarin, one sentence-finally for currently relevant st ate and another post-verbally for perfective marking (Li and Thompson 1989). Since *le* and *mei* are in complementary distribution, in A-not-A questions, *le* does not surface and therefore its location does not affect my general analyses.

Zhangsan not read this   book
'Zhangsan did not read this book.'

(37)   TopicP

*Zhangsan*k   CP

C'

[*you mei*]j   NegP

Neg'

tj   AspP

pro_k   Asp'

you   VP

t_pro   V'
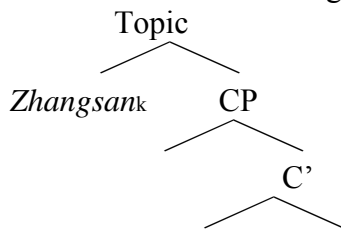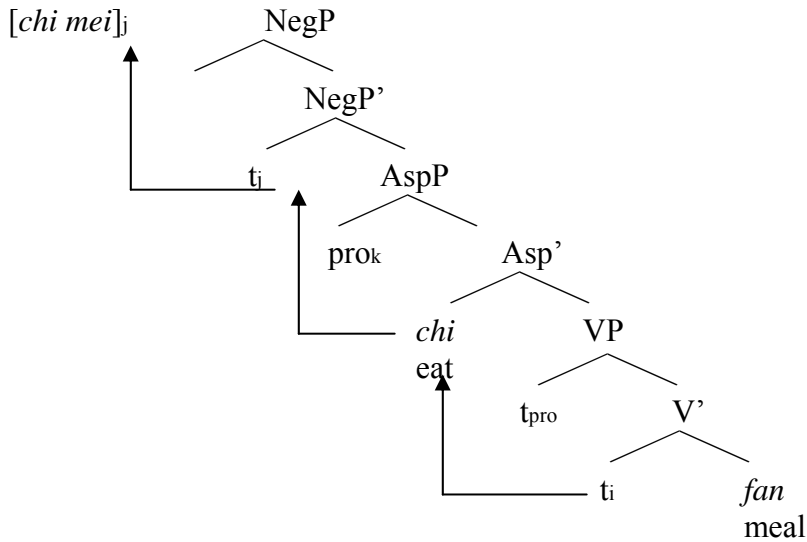
kan   zheben shu

Following what we have been discussing for modals and bare verbs, in (37), *you* is adjoined to Neg° from I°, with *mei* being the head of NegP. As can be seen from (36), *mei* and *le* are in com plementary distribution, *le* therefore cannot surf ace in (37). The mutual exclusion between *mei* and *le* proves again that the NegP is activated in form ing A-not-A questions, providing A with a position to adjoin to form the [A-not] template.

3.3.2.2. When A is the Verb

Another way of forming an A-not-A question with culminative perfective aspectual interpretation is (38), when A is not the aspectual marker *you* but the verb *chi* 'to eat', i.e. A-not-A being *chi-mei-chi*.
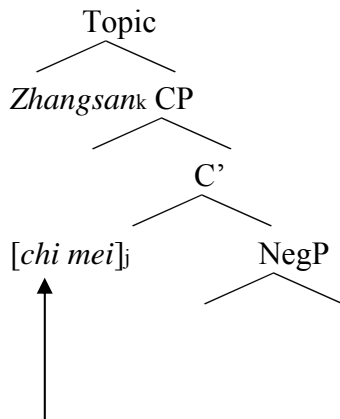
(38)   Zhangsan chi mei   chi fan.
         Zhangsan eat not eat meal
         'Did Zhangsan eat?

Topic

*Zhangsan*k   CP

C'

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[*chi mei*]ⱼ   NegP
           NegP'
     tⱼ   AspP
        proₖ   Asp'
            chi   VP
            eat
               t_pro   V'
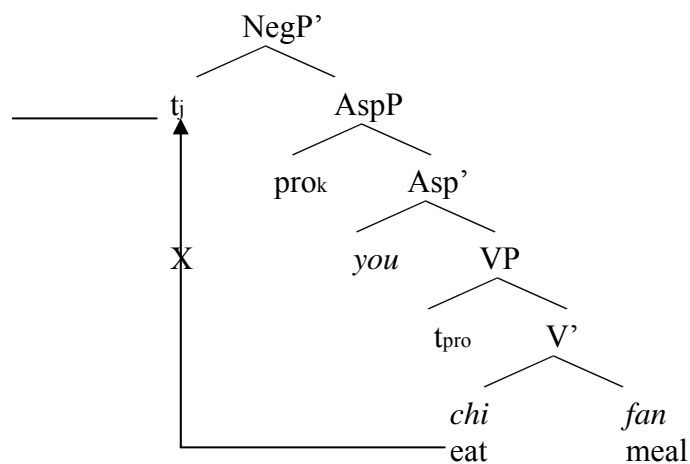   tᵢ   *fan*
                             meal

For such a structure, I argue that the lack of aspectual particle *you* in I°, caused by the implementation of a null operator as a result of the use of contracted *mei*, is compensated for by the raising of the verb, i.e. *chi* 'to eat', again due to the requirement that INFL must be lexically realized (Koopman 1984). After V-to-I raising, we can follow the same process that happens to modals, bare verbs, and other aspects to reach the surface structure, i.e. I-to-Neg and then Neg-to-C, combined with adjoining without trace deletion. In other words, (38), similar to the A-not-A formation for bare stative and activity verbs as shown in (29) that involves verb raising. Now, the derivation in (38) enables us to account for the ungrammaticality of (18), repeated below as (39), from a syntactic perspective; i.e. only A-*mei*-A but not A-*meiyou*-A is grammatical. A-*meiyou*-A is not allowed because in A-not-A formation, what is adjoined to Neg° is I°; in (39), however, what is adjoined to Neg° is the verb *chi* 'to eat', though I° is already occupied by the head *you*, which is not a suffix to which the verb can be attached to:

(39)   *Ta chi mei-you   chi fan?
       he eat not-have eat meal
       'Did he eat?'

        Topic
   *Zhangsan*ₖ   CP
               C'
   [*chi mei*]ⱼ   NegP

300

```
                    NegP'
                  /      \
        _____ tⱼ         AspP
                           /    \
                        proₖ      Asp'
                                 /     \
                 X             you       VP
                                        /   \
                                     tpro    V'
                                            /   \
                                          chi     fan
                                          eat     meal
```
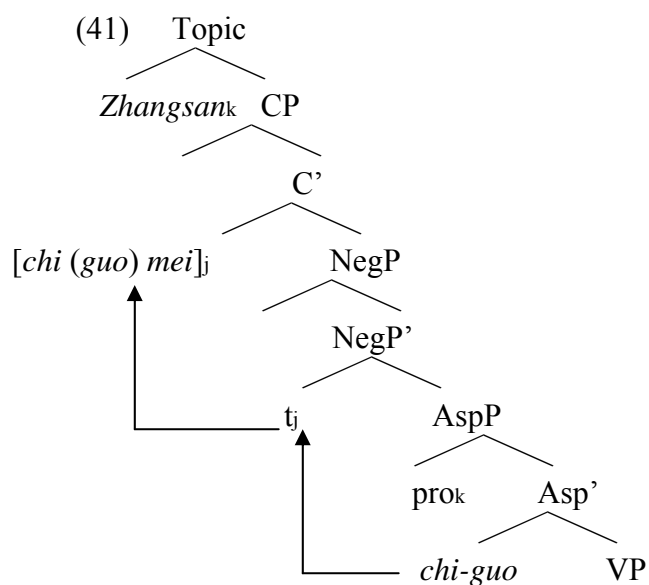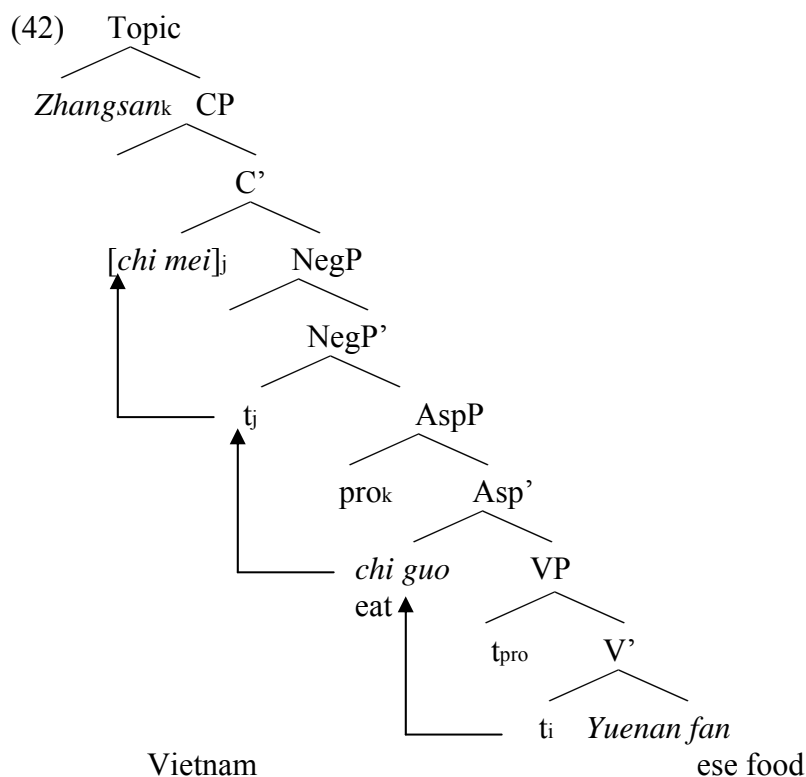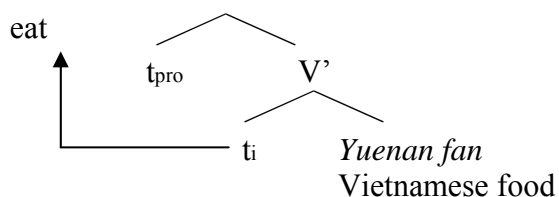
3.3.3. Experiential Aspect *Guo* and Durative Aspect *Zhe*

(40) shows how A-not-A questions are formed with the suffixal experiential aspect marker *guo* involved.

(40) Zhangsan chi(guo)   mei chi guo   Yuenan fan?
      Zhangsan eat (DurAsp) not   eat DurAsp Vietnam food
      'Did Zhangsan ever eat Vietnamese food?'

The lexical item that can function as A is either the verb *chi* 'to eat' alone or the verb suffixed with *guo*, i.e. *chiguo*. *Guo* is a suffixal aspect head, attracting the verb for experiential aspect marking through V-to-Asp head-movement, as shown both in (41) and (42):

```
(41)   Topic
       /    \
  Zhangsanₖ  CP
             /  \
               C'
              /   \
[chi (guo) mei]ⱼ    NegP
                   /
                NegP'
                /    \
             tⱼ       AspP
                     /    \
                  proₖ     Asp'
                          /    \
                      chi-guo    VP
```

eat

t_pro   V'

t_i   *Yuenan fan*
       Vietnamese food

(42)   Topic

Zhangsan_k   CP

C'

[*chi mei*]_j   NegP

NegP'

t_j   AspP

pro_k   Asp'

chi guo   VP
eat

t_pro   V'

t_i   *Yuenan fan*
Vietnam   ese food

In (41), after the suffixation, the whole Asp°, *chiguo*, is adjoined to Neg° for further derivation; the result is that we have *chiguo* as A. In (42), after the suffixation, only the verb, but not the suffix *guo*, moves to Neg°; again this is due to the fact that I°-to-Neg° movement is not a strict head-movement, any element from I° is sufficient for the formation of the [A-Neg] template, so now we have only the verb *chi* 'to eat' as A.

The durative aspect marker *zhe* is, like experiential maker *guo*, a suffix, and originates in Asp°. A can refer to either the verb *na* 'to hold' or the suffixed verb *na-zhe*; the derivation processes are identical to (41) and (42),

Although in the formation of A-not-A questions of culminative, experiential, and durative aspects, A can refer to either the verb or the verb suffixed with an aspect marker, in A-not-A questions that involve progressive aspect m arker *zai*, only *zai-mei-zai* is allowed but not *zai-V-mei-zai-V*, as shown in (43) and (44).

(43) Zhangsan zai   mei zai   xuexi?
      Zhangsan Prog not Prog study
      'Is Zhangsan studying?'
(44) ?*Zhangsan zai xuexi mei zai   xuexi.
       Zhangsan Prog study not Prog study
       'Is Zhangsan studying?'

Such contrasts once again support the claim that A refers to I. In culminative, experiential, and durative aspect marking, I have argued th at the verb needs to merge with the suffixal aspect markers, forming a constituent in I° and then s erving as possible A in A-not-A question form ation. Progressive aspect marking, however, is not through suffixation but through *zai* licensing the verb; what is in I, therefore, is only *zai* but no verbal element, and, that is why (44) is ungrammatical.

4.   Conclusion

I conclude that A in A-not-A questions refers to I°, Asp° or Modal°. The derivation of A-not-A questions starts with I-to-Neg movement, attracted by the realization of +Q o f [A-not] in Neg°. This movement leaves its trace undeleted. And Neg-to-C movement gives the sentence the force of a question. A study of the scope o f B-not-B question further proves that A-not-A question starts at a position lower than C°. My analysis also explains why A- *mei*-A is possible but A- *meiyou*-A is not, considering that *mei* and *meiyou* are free variants in negation of stage-level predicates.

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