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Complex Predicates in Mandarin Chinese: Three Types of *Bu-Yu* Structures

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by

Haiyong Liu

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The dissertation of Haiyong Liu is approved.

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Pamela Munro

_____

Hongyin Tao

_____

Anoop Mahajan, Committee Co-Chair

_____

Timothy Stowell, Committee Co-Chair

University of California, Los Angeles

2004

For my aunt Zhang, Xuedong, the saving grace in my life, who passed away on April 16th, 2004, during the last stage of my dissertation revising.

List of Abbreviations

Comp	Complementizer
CRS	Currently Relevant State, i.e. clause-final *le*
DE	*De* as in potential Class II
DurAsp	Durative aspect, i.e. *zhe*
ExpAsp	Experiential aspect, i.e. *guo*
INeg	Individual-level predicate negator, i.e. *bu*
ImpNeg	Imperative negator, i.e. *bie*
Nomi	Nominalizer
Perf	Culminative perfective aspect, i.e. post-verbal *le*
Prog	Progressive aspect, i.e. *zai*
SNeg	Stage-level predicate negator, i.e. *mei*
Y/N	Yes-no question particle, i.e. *ma*

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x

VITA

May 23, 1972	Born, Beijing, People's Republic of China
1991-1992	Military Training Shijiazhuang Military Academy Shijiazhuang, P. R. China
1996	B.A., English Peking University Beijing, P. R. China
1998	M.A., Linguistics Wayne State University Detroit, Michigan
1998-1999	Humanities Deans' Fellowship University of California, Los Angeles
1999-2003	Teaching Assistant Department of Linguistics University of California, Los Angeles
1999-2003	Teaching Assistant Department of East Asian Languages and Cultures University of California, Los Angeles
2003-2004	Chinese Lecturer Department of Asian and Middle Eastern Languages and Cultures University of Virginia

PUBLICATIONS AND PRESENTATIONS

Liu, Haiyong (May, 1997). *Dou*-Doubling in Chinese. Paper presented at the annual meeting of the Michigan Linguistic Society, Eastern Michigan University.

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xiii

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ABSTRACT OF THE DISSERTATION

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by

Haiyong Liu

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Professor Anoop Mahajan, Co-chair

Professor Timothy Stowell, Co-chair

In this dissertation, I survey three classes of *Bu-Yu* complex-predicate structures in Mandarin Chinese. They are traditionally termed as *Jieguo*- 'resultative' *Bu-Yu*, *Keneng*- 'potential' *Bu-Yu*, and *Chengdu/Miaoshu*- 'degree/descriptive' *Bu-Yu*.

These *Bu-Yu* structures differ from one another in terms of structure, aspect marking, negation, and A-not-A question formation. A thorough study of their internal structures and a finer categorization within each class help explain these differences.

Questions I am concerned with regarding *Jieguo Bu-Yu*, or V-V compounds, include why only the second predicate (P2) is under the scope of negation and why an intransitive P2 shows up in a case-assigning position. My analysis of first predicate (P1) and P2 incorporation will shed light on these questions.

Keneng Bu-Yu will be argued to be derived from *Jieguo Bu-Yu*, based on the similarities in their semantic interpretations, the transitivity of their P2, and the optionality observed in their object topicalization and pro-drop. I will argue, however, that *Keneng Bu-Yu* has a serial-verb construction, the particle *de* being an analytical morpheme, providing not only potentiality but also causativity. A two-separate-course analysis will be given to account for the idiosyncrasy in *Keneng Bu-Yu* A-not-A question formation, which takes the form of P1-*DE*-P2-P1-not-P2, different from the A-not-A questions of the other two *Bu-Yu* structures.

I divide *Chengdu/Miaoshu Bu-Yu* into descriptives, resultatives, and causatives, depending on the nature of P2. When P2 is an individual-level predicate, we have descriptive structures, with P2 being the main-predicate. When P2 is a stage-level predicate, we have resultative or causative structures. Resultatives can have either subject-control or complex-clausal structure, based on the finiteness of P2. Causative structures have ECM. The *de* in descriptives will be argued to be a nominalizer to explain the peculiar P1-copying effect. The *de* in resultatives will be argued to be a complementizer like English 'that'. The *de* in causatives will be argued to be a prepositional complementizer like English 'for' that introduces infinitive complement.

Chapter 1   Introduction

1.1   The Three *Bu-Yu* Structures

In this dissertation, I will survey three complex-predicate structures in Mandarin Chinese. They are traditionally termed as *Bu-Yu* 'complement-word' structures in Chinese linguistics. As can be seen from the following examples, all these *Bu-Yu* structures comprise two parts, P(redicate)1 and P(redicate)2. (1) is an example of *Jieguo-* 'resultative' *Bu-Yu*, (2) is an example of *Keneng-* 'potential' *Bu-Yu*, and (3) is an example of *Chengdu/Miaoshu-* 'degree/descriptive' *Bu-Yu*:

(1) Wo zou-lei   le.   Class I
    I   walk-tired Perf
    'I got tired from walking.'

(2) Wo pao   de   kuai.   Class II
    I   run   PotentialMarker fast
    'I can run fast.'

(3) Wo tiao de   hen gao.   Class III
    I   jump Degree/DescriptiveMarker very high
    'I jump very high.'

P1's are *zou* 'to walk' in (1), *pao* 'to run' in (2), and *tiao* 'to run' in (3) respectively. P2's are *lei* 'tired' in (1), *kuai* 'fast' in (2), and *gao* 'high' in (3) respectively.

In this dissertation, I will call the above structures Class I, Class II, and Class III respectively, for the sake of avoiding confusion caused by terminology. Later, I will regroup these structures.

1

These *Bu-Yu* structures differ from one another in terms of structure, aspectual marking, negation, and A-not-A question formation, cf. Kupfer (1995). A thorough study of their internal structure and a finer categorization within each class will help us explain these differences.

Class I is traditionally called V-V compounds (Chao, 1961; Li, 1995). Class I structures take the form of P1-P2 and will be further divided into resultative and causative structures in this dissertation, depending on their theta-role assignment patterns. When P1 and P2 share the same agent, we have a resultative structure, as shown in (4); when P1 and P2 have different agents, we have a causative structure, as shown in (5):

(4) Wo kan-ni   le.
    I   read-get.fed.up Perf
    'I got fed up from reading.'

(5) Wo tui-dao   le   nadu qiang.
    I   push-topple Perf that   wall
    'I toppled that wall by pushing it.'

Some facts suggest that P1 and P2 do not behave in exactly the same way, despite being the two components of a compound. In (6), for example, although both P1 *da* 'to hit' and P2 *po* 'to break' follow *mei*, the negator, the sentence means 'I hit but did not break the vase' rather than 'I did not hit or break the vase'. The interesting question is why, in interpretation, only P2 seems to be under the scope of negation:

(6) Wo mei   da-po   zhege huaping.
    I   didn't hit-break this   vase
    'I did not break this vase.'

On the other hand, an inherently intransitive P2 can achieve transitivity with the help of being part of the compound. In (7), for example, an intransitive P2, like the stative verb, *da* 'big', can show up in a case-assigning position. When not inside a compound, *da* 'big' cannot have an object of its own, as shown in (8):

(7) Zhangsan fang-da le   zhezhang zhaopian.
    Zhangsan put-big Perf this   photo
    'Zhangsan enlarged this photo.'

(8) *Zhangsan da   le   zhezhang zhaopian.
    Zhangsan big Perf this   photo
    'Zhangsan enlarged this photo.'

My analysis of the obligatory incorporation of P2 with P1 in Caus(ative)P through predicate-raising will shed light on the scope and transitivity questions discussed above.

There has not been too much formal literature that focuses on Class II potential structure. I will offer some original analyses regarding this class. For example, Class II will be argued to be derived from Class I, judging from the similarities in their semantic interpretations, the transitivity of their P2's, and the optionality observed in their object topicalization and pro-drop. I will argue, however, that Class II has a structure more like a serial verb construction, the particle *DE* being an analytical morpheme, providing not only potentiality but also causativity. I suggest that *DE* heads PotentialP, a modal verb projection that is lower than P1, to account for the potential modality reading in Class II. I argue that there are two separate affirmative and negative derivations involved in the idiosyncratic Class II A-not-A questions, which, unlike Class I and Class III A-not-A

3

questions, take the form of P1-*DE*-P2-P1-not-P2. In 1.4, I will introduce Mandarin A-not-A questions, since they play a role in our discussion. For now, (9) is an example of A-not-A question:

(9) Ni xie   de wan xie   bu wan   zhege lunwen.
    you write DE finish write not finish this   paper
     'Can you finish writing this paper or not?'

In traditional Chinese grammar, cf. Chao (1961), all Class III structures have *de* between P1 and P2, but do not have potential interpretation like Class II structures. We will see in Chapter 6 and Chapter 7 that Class II *de* and Class III *de* are different. In this dissertation, Class III will be further divided into descriptives, resultatives, and causatives, depending on the predicate type of P2. Such categorization will clarify some of the inconsistencies that have been found within Class III in the literature, cf. Li (1990) and Huang (1992). I will also investigate the identity of *de*, which was not clearly discussed in previous studies.

When P2 is an individual-level predicate, we have descriptive structure, as shown in (10), where stative *kuai* 'fast' is an individual-level predicate.

(10)   Wo zou   de   hen kuai.
        I   walk DescriptiveMarker very fast
        'I walk/walked very fast.'

When P2 is a stage-level predicate and involves subject-control, we have resultative structure, as shown in (11), where we have stage-level P2 *lei* 'tired':

(11)   Zhangsan pao-de   hen lei.
        Zhangsan run Comp very tired
        'Zhangsan got tired from running.'

When P2 is a stage-level predicate and has focus marking, we have complex-clausal structure, which can be related to the English 'so…that' structure, also a resultative structure, as shown in (12). P2 in (12) will be argued to be finite, which distinguishes (12) from (13). (13) is an example of causative structure and will be argued to have an ECM structure, cf. Gu and Pan (2001).

(12)   Zhangsan da de   Lisi dou ku le.
        Zhangsan hit Comp Lisi even cry Perf
        'Zhangsan hit so much that Lisi cried.'

(13)   Zhangsan da de   Lisi ku le   qilai.
        Zhangsan hit Comp Lisi cry Perf start
        'Zhangan hit Lisi so much that Lisi started crying.'

I will also suggest that descriptives should be excluded from complex-predicate structures, because we will see that P2 is actually the main predicate with a nominalized P1. The *de* in descriptives will be argued to be a nominalizer that deverbalizes P1. Such an analysis is supported by the fact that when an object like *hua* 'word' occurs, P1-copying is required to create a verbal case-assigner for the object, as shown in (14):

(14)   Ta shuo hua shuo de   hen kuai.
        he talk word talk Nomi very fast
        'He talks/talked very fast.'

The *de* in resultatives and causatives will be argued to be a complementizer like English 'that', introducing a resultative clause. The *de* in ECM causatives will be argued to be a prepositional complementizer like English 'for' that introduces infinitive complement. Such analysis will help explain how, in an ECM causative structure like (15), Lisi is assigned an exceptional case, despite the fact that P1, *chao* 'to make noise; noisy', is intransitive:

(15)   Zhangsan chao   de   Lisi xiang mashang   zoukai.
        Zhangsan make.noise Comp Lisi want immediately walk.away
        'Zhangsan was so noisy that Lisi wanted to walk away immediately.'

1.2   Aspects and Modals in Mandarin

I will study the interactions between *Bu-Yu*'s aspects and modals. *Bu-Yu*'s behave differently in terms of aspect and modal marking and interpretations. For example, Class I must co-occur with perfective aspect or modals; Class II has inherent potential interpretation; and Class III can only have P2 marked for aspect and modality. All these characteristics will help reveal the underlying syntactic structures and semantic properties of *Bu-Yu* structures.

What is more, I propose that Mandarin has another type of aspect, i.e. habitual aspect for bare activity verbs, which has not been documented in the literature. Such a specification will help us understand Mandarin negation and A-not-A question formation

more comprehensively. Other problems I will investigate regarding Mandarin aspects and modals include formalizing the projections for the two notorious *le*'s in Mandarin, one for perfective aspect marking and one for Currently Relevant State (CRS) marking, as well as the Negative Polarity Item (NPI)[1] *you* in perfective marking. These well-known grammatical items have not been satisfactorily studied in formal Chinese linguistics.

1.3 Negation

Mandarin has three negators: *bu*, for statives, bare activity verbs, and modals, as shown in (16); *mei*, for aspects, as shown in (17); and *bie* for imperatives, as shown in (18). I will argue that, more than distinguishing aspectual from non-aspectual predicates, these negators distinguish individual-level from stage-level predicates. I will also suggest that the existence of aspect and modal null operators in *mei* and *bu* negation respectively.

(16)   Wo bu zhidao.
       I   not know
       'I do not know.'

(17)   Wo mei qu guo   Meiguo.
       I   not go ExpAsp America
       'I have never been to America.'

(18)   Bie   pao!
       don't run
       'Don't run!'

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[1] An NPI is a lexical item that occurs only when licensed in a negation, question, conditional-clause environment or by a quantifier; for example English 'ever', 'budge an inch', and 'any' are NPI's.

I will attempt to solve certain puzzles regarding *Bu-Yu* negation that include the scope problem in Class I, the incompatibility between *mei* and Class II, the incompatibility between *mei* and Class III descriptives, and how the semantic similarity between potential Class I and Class II merges their negation forms.

1.4   A-not-A questions

A-not-A question is one of the four question types in Mandarin. As shown in (20), for example, the so-called A-not-A refers to *lai-bu-lai* 'come-not-come', (19) being its non-question counterpart:

(19)   Zhangsan lai.
        Zhangsan come
        'Zhangsan comes.'

(20)   Zhangsan lai   bu lai?
        Zhangsan come not come
        'Does Zhangsan come or not?'

I am interested in solving the puzzle of the contrast between Class I and Class II A-not-A questions. Compare (21) and (22): the former for Class I with P1P2-not-P1P2 pattern, while the latter for Class II with P1-*de*-P2-P1-not-P2 pattern.

(21)   Ni chi-wan mei chi-wan?
        you eat-finish not eat-finish
        'Did you finish eating?'

(22)   Ni chi-de-   wan -chi-bu -wan?
        you eat-Potential.Marker-finish-eat-not-finish
        'Can you finish eating or not?

I will explain this difference from the point of view of Class I and Class II formation and the different mechanisms implemented in their A-not-A question formations: the former is derived from the +Q template of [A-not] while the latter from the template of [Affirmative]-[Negative].

For many years, linguists have been studying what the A really refers to and how the A-not-A interrogative template is derived. No work in formal linguistics has been done, however, on the formation of the A-not-A question of *Bu-Yu* structures.

I suggest that A refers to the highest auxiliary or I°, which can be either Modal° as in (23) or Asp° as in (24).

(23)　　Zhangsan yinggai bu yinggai lai?
　　　　Zhangsan should not should come
　　　　'Should Zhangsan come or not?'

(24)　　Zhangsan zai mei zai   xuexi?
　　　　Zhangsan Prog not Prog study
　　　　'Is Zhangsan studying or not?'

I will then argue for an analysis of successive movements, i.e. I-to-Neg followed by Neg-to-C, for A-not-A formation. I-to-Neg is an adjoining process, trigged by the realization of a +Q in the form of [A-not] template, and this adjoining process leaves its trace undeleted. The [A-not] formation is argued to be phonological, making lexical disintegrity possible, as shown in the contrast in (25): (a) follows lexical integrity, taking *bengji* 'to bungee' as A; while (b) is able to take only the first syllable *beng* of *bengji* as A:

(25) a.   Ni bengji bu bengji?
             you bungee not bungee
             'Do you bungee-jump?'

      b.   Ni beng   bu bengji?
             you bungee not bungee
             'Do you bungee-jump?'

1.5   An Overview of the Theoretical Framework of this Dissertation

The discussions in this dissertation are within the theoretical framework of generative grammar (Chomsky, 1985 and 1995), focusing on particular data from Mandarin Chinese. Below I give a basic overview of some aspects of generative syntax that will be employed and discussed further in later chapters.

In generative model, the formations of phrase structures are assumed to follow X-bar binary branching. A phrasal head, X°, for example, governs a specifier and a complement in its XP projection:

(26)   XP
          ⁄   ＼
    Specifier   X'
                 ⁄   ＼
              X°   Complement
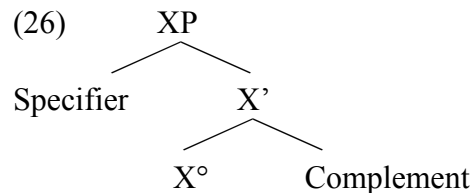
The merger process of various phrasal projections constructs at clausal level, which will be introduced in greater detail below. The merger process involves movements triggered by feature checking required of different lexical categories and functional operators. An operator is an item to denote, for example, interrogative,

negation, and auxiliary properties. They can be overt, i.e. with phonetic content, or covert, i.e. without phonetic content.

On the other hand, PRO and pro are covert pronouns. PRO does not have case and is understood as the subject of an infinitive complement of a control predicate. In a subject-control structure like '*John*$_i$ *decided to PRO*$_i$ *go home*', the PRO is bound by the matrix subject and in an object-control structure like '*I*$_i$ *told John to PRO*$_i$ *go*', the PRO is bound by the matrix object. A pro is a covert pronoun with nominative case.

As shown in (29), unless otherwise specified, I will follow Cheng (1995) and Li and Thompson (1981) by arguing that all Chinese subjects are base-generated in [Spec, TopicP] in the left periphery, an expanded CP domain in which the topic has its own functional projection (Rizzi, 1997).

Another reason to treat all Chinese subjects as topics is because all left-periphery DP's in Mandarin are definite. Indefiniteness is realized by appearing in the post-verbal existential closure (Diesing, 1992). Compare (27) and (28); *che* 'car' in the former has definite interpretation because of its left-periphery location and *che* 'car' in the latter has indefinite interpretation for falling in the VP domain:

(27)　Che lai　le.
　　　car come CRS
　　　'The car has come.'

(28)　Lai　　che le.
　　　come car CRS
　　　'A car has come.'

The topic then binds a pro that starts as an external argument in [Spec, VP] and then moves to either [Spec, Asp(ect)P] or [Spec, ModalP] for theta-role assignment. CP accommodates illocutionary force markers. Beneath CP is a ModalAdvP hosting modal adverbs like *yiding* 'definitely'; under ModalAdvP is CrsP for the CRS *le*. Above ModalAdvP and CrsP is the negator *bu* for *yiding* or *mei* for CRS. Following CrsP is NegP and IP that is realized as ModalP and AspP. The lowest projections are *v*P or Caus(ative)P and VP; *v*P is usually activated in resultative structures while CausP is activated in causative structures:

(29) TopicP

subject$_i$ CP

NegP1

ModalAdvP

CrsP

NegP2

ModalP

pro$_i$ AspP

pro$_i$ *v*P/CausP

pro$_i$ VP

pro$_i$ V'
|
V
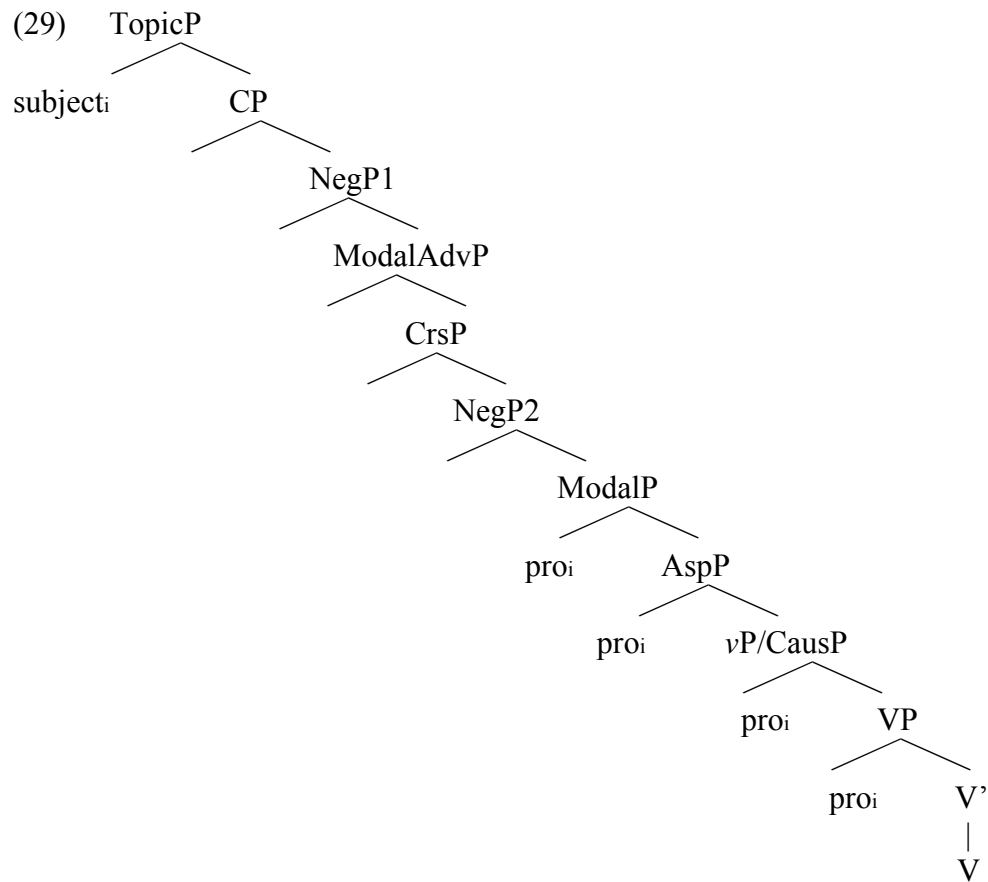
1.6   Some Other Tests Used in this Dissertation

In this dissertation, all three *Bu-Yu* structures will be examined in terms of formation, negation, aspect and modal marking, and A-not-A questions.   Some other tests, however, are restricted for only a certain perspective on a certain structure.   In this section, I introduce some of these tests and explain why I use them on one but not the other *Bu-Yu* structures.

1.6.1   Individual-Level Predicates Vs. Stage-Level Predicates

Carlson (1977) has identified two types of predicates: individual-level and stage-level predicates.   The distinction between individual-level and stage-level predicates is useful in terms of understanding the properties of Mandarin negation and the categorization of Class III.

According to Carlson (1977), stage-level predicates express properties that are temporally bounded, and, for example, can occur in *there*-insertion sentences in English; while individual-level predicates express properties that are not temporally bounded and cannot occur in *there*-insertion in English; compare (30) and (31), the former with the stage-level predicate 'available' and the latter with the individual-level predicate 'altruistic':

(30)   There are firemen available.

(31)   *There are firemen altruistic.

Kratzer (1995) argues that these two types of predicates differ also in syntactic structure; stage-level predicates are *davidsonian* (Davidson, 1967) in that they have an

extra event argument position above the VP, as shown in (32), which individual-level

predicates do not have, as shown in (33):

(32)   IP
       / \
   event   I'
          / \
        VP
       / \
   subject   V'
              |
           available

(33)   IP
       / \
   subject   I'
          / \
        VP
       / \
          V'
          |
       altruistic
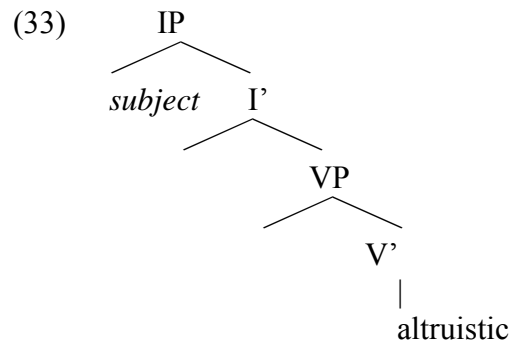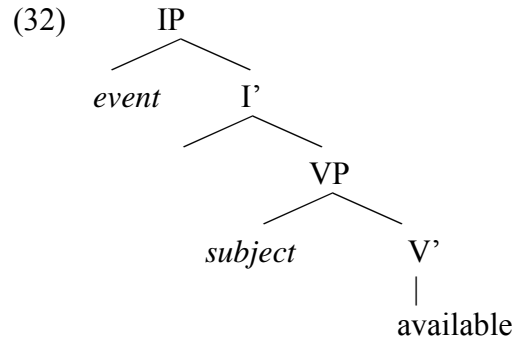
I will redefine the function of each Mandarin negator, with the help of Carlson's

distinction, i.e. *bu* for individual-level predicates and *mei* for stage-level predicates,

which is more fundamental than the traditional criteria. This distinction will also prove

to be crucial in separating descriptives from resultatives and causatives in Class III.

Descriptives, with individual-level P2, will be argued not to belong to the set of complex-

predicate structures, a revision of the traditional categorization. I will not discuss such a

distinction for Class I and Class II, because their P2's are all stage-level, marked by the

lack of the stative intensifier *hen*, which we will discuss in greater detail in 2.2.2.2.4.2.

1.6.2   The *Ba*-Test

I will use *ba*-test for causativity on Class I V-V compounds and Class III resultatives and causatives.

Although the basic word order in Mandarin is SVO (Li and Thompson, 1981), *ba*-structure, i.e. subject + *ba* + direct object + V (SOV), is used very frequently, in which the direct object is placed immediately after *ba* and before the verb; compare (34) and (35). According to Sun (1996), with the *ba*-structure, (35) indicates high transitivity.

(34)   Wo xie zi   le.
       I   wrie character Perf
       'I have written characters.'

(35)   Wo ba zi   xie   le.
       I   BA character write Perf
       'I have written the character(s).'

According to Sun (1996), a high-transitivity marker like *ba* interacts with the referentiality of the object NP and the temporal structure of the sentence. In *ba*-structure, the patient, for example *zi* 'character' in (35), must be definite; compare (35) and the ungrammatical (36).

(36)   *Wo ba yige zi   xie   le.
       I   BA   a   character write Perf
       'I have written a character.'

Ba-structure can only occur with perfective marker *le*, as already shown in (35), or with an overt modal, as shown by (37) and (38). What is more, as shown by the

contrast between (37) and (39), when the perfective *le* is not in play, a telic verb like *xie-wan* 'finish writing' must be used:

(37) Wo xiang ba zhege zi   xie-wan.
       I   want BA this   character write-finish
       'I want to finish writing this character.'

(38) *Wo ba zhege zi   xie-wan.
       I   BA this   character write-finish
       'I finish writing this character.'

(39) *Wo xiang ba zhege zi   xie
        I   want BA this   character write
       'I want to write this character.'

As a result of *ba*-structure indicating high transitivity, i.e. obligatory co-occurring with a definite object and the perfective aspect or the overt modal, it can be used to help distinguish causative structures from resultative structures in Class I and Class III; we will go into more detail in Chapter 5 and Chapter 7. The test cannot be used on Class II potential structure, because Class III structures do not have perfective or overt-modal marking:

(40) *Wo ba zhege zi   kan de   qingchu.
        I   BA this   character look PotentialMarker clear
       'I can see this character clearly.'

Huang (1982) considers that there is a *Ba*-Transformation, by which a postverbal object is preposed. And *ba* is the preposition that makes such a preposing possible by assigning case to the object. Similarly, Audrey Li (1991) treats *ba* as a base-generated

case assigner, assigning accusative case to the NP following *ba* rather than assigning case to a preposed object as Huang proposes. I will also introduce Sybesma's (1992) structure of *ba* interacting with Class I V-V compounds in 5.4.2.

1.6.3   Vendler (1957)'s Verb Classes

Vendler (1957) divides verbs into four groups, based on the fact that the use of a verb also suggests the particular way in which that verb presupposes and involves the notion of time. We will find Vendler's classification to be a useful tool throughout this dissertation; it helps us understand the temporal-reference properties of different *Bu-Yu* structures as well as their aspect and modal markings.

According to Vendler, stative verbs, such as 'to love' and 'to know', indicate an action that lasts for a period of time. Activity verbs, such as 'run' and 'push a cart', consist of successive phases following one another in time. Accomplishment verbs, such as 'draw a circle' and 'run a mile', indicate actions that have a telos in order to be what they are claimed to be. Achievement verbs, such as 'reach the top' and 'to win a race', indicate an action that occurs at a single moment.

1.6.4   The Focus Test

The focus test helps to identify the clause that an object has moved out from (Gu and Pan, 2001) as well as the finiteness of a clause. We will use the focus test, the *lian...dou* structure, on Class III resultative and causative structures to identify the finiteness of clausal P2.

The focus marker *lian...dou* 'even' surrounds the nominal that is focused. *Lian...dou* can only modify elements contained in its own clause and must be preverbal,

as shown in (41) and (42). (41), without focus marking, has the archetypal SVO order; in (42)a, the focused object *ta* 'he' is, however, in a preverbal position; (42)b is out because of the focused post-verbal object; (42)c shows subject-focusing:

(41)   Wo xihuan ta.
       I   like   he
       'I like him.'

(42)   a.   Lian ta wo dou xihuan.
              even he I   even like.
              'I like even him.'

        b.   *Wo xihuan lian ta dou.
              I   like   even he even
              'I like even him.'

        c.   Lian wo dou xihuan ta.
              even I   even like   he
              'Even I like him.'

(43) has an object-control structure, with a non-finite complement clause *Zhangsan zou* 'Zhangsan go' (F. Liu, 1987). (44), (45), and (46) show that focusing of the subject of the non-finite clause is impossible, no matter where the focused *Zhangsan* is located: at the beginning of the complement clause, before the matrix verb *quan* 'to persuade', or at the beginning of the matrix clause. (47), on the contrary, has the subject of the matrix finite clause focused and is grammatical.

(43)   Wo quan   Zhangsan zou.
       I   persuade Zhangsan go
       'I persuade Zhangsan to go.'

(44) *Wo quan   lian Zhangsan dou   zou.
        I persuade even Zhangsan even go
      'I persuade even Zhangsan to go.'

(45) *Wo lian Zhangsan dou quan   zou.
        I   even Zhangsan even persuade go
      'I persuade even Zhangsan to go.'

(46) *Lian Zhangsan wo dou   quan   zou.
        even Zhangsan I   even persuade go
      'I persuade even Zhangsan to go.'

(47) Lian wo dou quan   Zhangsan zou.
      even I   even persuade Zhangsan go
      'Even I persuade Zhangsan to go.'

(48) has also object-control, but the non-finite complement clause has an object *doufu* 'tofu' in it, which is different from (43). (49), (50), and (51) are examples showing that it is impossible to focus the object *doufu* 'tofu' in a non-finite clause, no matter where the focused *doufu* 'tofu' is placed.

(48) Wo quan   ta chi doufu.
      I   persuade he eat tofu
      'I persuade him to eat tofu.'

(49) ?*Wo lian doufu dou quan   ta chi.
        I   even tofu   even persuade he eat
       'I even persuade him to eat tofu.'

(50) *Lian doufu wo dou quan   ta chi.
       even tofu   I   even persuade he eat
      'I even persuade him to eat tofu.'

(51) ?*Wo quan   ta lian doufu dou chi.
        I   persuade he even tofu even eat
       'I even persuade him to eat tofu.'

19

I will not run the focus test on Class I and Class II in Chapter 5 and Chapter 6, because it would not yield any results that are useful for my analyses in these monoclausal finite structures. (52) and (53) for Class I and (54) and (55) for Class II only prove the preverbal requirement in focus structure.

(52)   Lian wo dou kan-jian   ta le.
          even I   even look-perceive he Perf
          'Even I saw him.'

(53)   Wo lian ta dou   kan-jian   le.
          I   even he even look-perceive Perf
          'I even saw him.'

(54)   Lian Lisi dou   kan de   jian.
          even Lisi even look PotentialMarker perceive
          'Even Lisi can see.'

(55)   Lisi lian zhege zi   dou kan de   jian.
          Lisi even this   character even look PotentialMarker perceive
          'Lisi can even see this character.'

1.7   Organization

Chapter 2, Chapter 3, and Chapter 4 introduce Mandarin aspects, modals, negations, and A-not-A questions. They serve to familiarize the reader with the diagnostic tests that will be used in the discussions of Chapter 5, Chapter 6, and Chapter 7, which deal with the specific *Bu-Yu* structures. Some of these tests have been used to study some features of a certain *Bu-Yu* structure in the literature, cf. Chao (1961) and Li (1990) etc. In this dissertation, a comprehensive study of these tests on all *Bu-Yu* structures provides for more systematic investigations of the different *Bu-Yu*'s.

Chapter 2 will introduce Mandarin aspects and modals. Mandarin aspects include imperfective and perfective. In addition to progressive and durative that are well-known already, I suggest that there is a habitual aspect in Mandarin. This new aspect will help solve problems found in negation and A-not-A formation of stative and activity verbs. Perfectives include experiential- and culminative- perfectives. CRS will be introduced as a projection that hosts a clause-final particle *le*, which is higher than both ModalP and AspP, as illustrated in inchoative structures.

Chapter 3 introduces the three negators in Mandarin: *bu*, *mei*, and *bie*. I will argue that their division of labor is more than aspectual vs. non-aspectual but rather between individual-level vs. stage-level predicates; i.e. *bu* is for individual-level predicates while *mei* is for stage-level predicates.

Chapter 4 introduces A-not-A questions; first I will present a literature review and then I argue that A actually refers to the highest auxiliary, cf. Ross (1961). Then, I offer the model of I-to-Neg adjoining followed by Neg-to-C movement for A-not-A question derivation. Then A-not-A for modal verbs, aspects, and bare verbs will be examined in turn.

Chapter 5 is on Class I. I will study Class I from the perspective of its Aktionsart, formation through incorporation, negation, and the A-not-A question formation.

Chapter 6 is on Class II. I will argue that Class II is derived from Class I, with corresponding resultative and causative structures. The A-not-A question formation of Class II is not quite the same as that of the other two classes, but is rather a combination of formations of the affirmative and the negative.

Chapter 7 is on Class III. I will divide what is traditionally uniformly called Class III into descriptives, resultatives and causatives. Descriptives have a monoclausal structure, while resultatives have subject-control or complex-clausal structure, and causatives have ECM structure.

Chapter 2   Aspects and Modals in Mandarin Chinese

2.1   Introduction

A study of Mandarin aspects and modals is necessary for us to understand *Bu-Yu* structures better, since different *Bu-Yu* structures show different properties in their interactions with aspects and modals. We will see, for example, in Chapter 5, Chapter 6, and Chapter 7 that Class I V-V compounds must be marked with either perfective aspects or modals, because of their telic Aktionsart; Class II has inherent potential interpretation that indicates the existence of a ModalP of potentiality; and Class III descriptive structures do not allow aspect- or modal- marking on P1.

In this chapter, I investigate the syntactic structures and classification of Mandarin modals and progressive, durative, experiential, and culminative aspects that have been traditionally identified. I also argue for the existence of the fifth type of habitual aspect to account for the habitual reading of bare activity verbs. I propose to distinguish the so-called clause-final and post-verbal *le*'s by relating them to universal perfective and existential perfective projections (McCawley, 1971; Iatridou, Anagnostopoulou, and Izvorski, 2001). I also introduce Mandarin stative verbs and study their interactions with aspects and modals in inchoative structures.

2.2   Aspects in Mandarin

In traditional grammar, Mandarin has four aspects, two imperfectives and two perfectives (Li, 2000; Comrie, 1976). Unlike English, in which the perfective auxiliary *have* and the progressive aspect auxiliary *be* are both located pre-verbally at surface

structure, aspect markers in Mandarin may either be pre-verbal or post-verbal, due to various grammaticalization processes (Chao, 1962; Li and Thompson, 1981; Li, 1990; Wu, 2000). Li (1990), for example, proposes not to treat Mandarin aspect markers as a coherent class, because of the differences in their distributions. I argue, however, that the underlying architecture of aspect marking is fixed: AspP is higher than VP. The surface differences in aspect markings are due to different derivational processes.

2.2.1 Imperfective Aspects

The two imperfective aspects that have been identified in Mandarin are progressive and durative.

2.2.1.1 Progressive Aspect

Zai is the progressive marker, as shown in (56). *Zai* occurs pre-verbally:

(56)　　Lisi zai　chouyan.
　　　　Lisi Prog smoke
　　　　'Lisi is smoking.'

Zai is both an aspect marker and a preposition that means 'at, in', as seen in (57).

(57)　　Zhangsan zai jia　li.
　　　　Zhangsan at　home inside
　　　　'Zhangsan is at home.'

It is a common practice cross-linguistically to use the preposition *in* to indicate progressive aspect, which describes 'in the process of doing something'. As a matter of fact, linguists have identified tense- and aspect- markings as spatio-temporal ordering of

predicates with the meaning of prepositions, for example, 'after' for past tense, 'before' for future, and 'with(in)' for present (Stowell, 1995a and 1995b; Demirdache and Uribe-Etxebarria, 1997).

(58) shows the structure for (56), i.e. progressive aspect in Mandarin. I assume that *zai* originates in the head position of AspP, which c-commands the verb. A similar analysis is in Lin (1999).

(58) Topic

Lisi$_i$ AspP
Lisi

        pro$_i$ Asp'

            Asp   VP
            zai

                t$_{pro}$ V'
                           |
                        chouyan
                        smoke
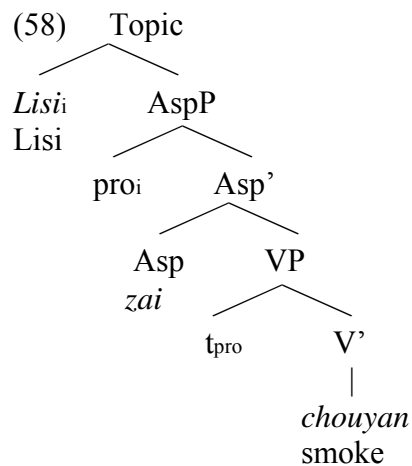
2.2.1.2 Durative Aspect

The other imperfective aspect is durative, with *zhe* as the marker, as shown in (59).

(59)   Lisi yiyanbufade zhan zhe.
       Lisi quietly   stand DurAsp
       'Lisi is/was standing quietly.'

25

The use of durative aspect is very limited; for example, *zhe* is commonly used only with verbs of posture like *zuo* 'to sit', *zhan* 'to stand', *dun* 'to squat', *xie* 'to rest', and, *tang* 'to lie down, to sleep'. Unlike other verbs, these verbs can only be used with *zhe*, but not *zai*, for imperfective, as shown by the contrast between (59) and (60):

(60)   *Lisi yiyanbufade zai   zhan.
         Lisi quietly   Prog stand
        'Lisi is/was standing quietly.'

In Russian, too, only verbs of posture like 'stand', 'sit', and 'rest' etc., but not other verbs, can occur with the durative aspect prefix *po* (Harrison, 1996).

(61)   Ja po-stojal   tselyj chas.
        I DurAsp-stand there hour
        'I stood there for an hour.'

(62)   *Ja po-jel   tselyj chas.
         I   DurAsp-eat whole hour

The durative is employed to indicate that a situation occupies a limited or specified amount of time (Harrison, 1996), while the progressive can indicate a period of no specified length. Their difference is shown in (63) and (64), since, unlike the action described by a verb of posture, *du boshi* 'to study for a Ph.D. degree' takes more than a countable period of time:

(63)   Wo zai du   boshi.
        I   Prog study.for Ph.D.
        'I am studying for my Ph.D. degree.'

26

(64)   *Wo du   zhe   boshi.
       I   study.for DurAsp Ph.D.
       'I am studying for my Ph.D. degree.'

Another use of the durative aspect is to indicate the accompaniment of one action

to another, as in (65) and (66):

(65)   Lisi zhan zhe   chifan.
       Lisi stand DurAsp eat
       'Lisi eats while standing.'

(66)   Lisi xiao zhe   zou kai   le.
       Lisi smile DurAsp walk away Perf
       'Lisi walked away, smiling.'

(65) has a habitual interpretation and (66) a perfective interpretation, because of

the use of *le* suffixed to *zou kai* 'walk away'. Also note, in such V1-*zhe* + V2 structure,

V1 suffixed with *zhe*, for example *zhan* 'to stand' and *xiao* 'to smile', expresses

accompaniment adverbial to the main V2, for example *chifan* 'to eat' and *zou* 'to walk',

which is opposite to the ordering in the corresponding 'while-structure' in English; in

Mandarin, adverbial clauses usually precede the main verb (Li and Thompson, 1981).

     Zhe is suffixed to the verb and I suggest the following structure in (67) for *zhe*:

AspP still takes a VP complement as we have seen in 2.2.1.1. Now the verb is adjoined

to *zhe* for durative aspect marking through head movement. Note this is different from

what I suggested for progressive aspect in 2.2.1.1 in that the progressive does not involve

verb movement.

(67)   AspP

          Asp'

     V$_i$ -*zhe*   V

               t$_i$
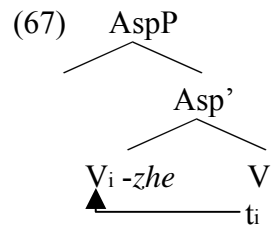
2.2.1.3 Habitual Aspect

Giorgi and Pianisi (1997) have argued that English verbs are inherently perfective, as shown in (68), in which 'cross' is interpreted as 'have crossed' rather than 'crossing' the street; they argue, therefore, English bare verbs have a habitual reading, i.e. a collection of completed events.

(68)   I see/saw John cross the street.

French bare verbs, on the other hand, are not inherently perfective. As shown by (69) and (70), depending on the tense of the matrix verb, *traverser* 'cross' can either mean 'crossing' or 'cross'. Furthermore, the verb in (71) can either mean 'John is smoking' or 'John smokes', different from its unambiguous English counterpart 'John smokes'.

(69)   J'ai vu   Jean traverser la rue.
       I've seen John cross   the street
       'I saw John cross the street.'

28

(70)   Je vois Jean traverser la rue.
         I   see John cross   the street
         'I see John crossing the street.'

(71)   Jean fume.
         John smoke
         'John smokes.'
         'John is smoking.'

Giorgi and Pianisi's (1997) observation of English applies to Mandarin as well. With no overt aspect marker, a sentence like (72) indicates a habit; i.e. Lisi is a smoker. Bare activity verbs usually have the habitual reading when they stand by themselves, indicating a series of completed activities over time:

(72)   Lisi chouyan.
         Lisi smoke
         'Lisi smokes'

Bare verbs are mostly stative or activity verbs in Mandarin, since accomplishment and achievement verbs have obligatory aspect marking (Li, 1990) or modal marking, as shown by the contrast between (73) and (74) and (75).

(73)   *Lisi shuai.
          Lisi fall

(74)   Lisi shuai le.
         Lisi fall   Perf
         'Lisi fell.'

(75)   Lisi yuanyi   shuai.
         Lisi willing.to fall
         'Lisi is willing to fall.'

Habitual aspect indicates a pattern of events and habitual predications that are semantically stative (Smith, 1991). I suggest that there is a covert habitual aspect operator in Asp° as shown in (76). Such an Asp° position can be overtly realized with *changchang* 'often', a frequency adverb as in (76).

(76)   TopicP
       /   \
   Lisi$_i$ AspP
            /   \
         pro$_i$ Asp'
                  /   \
      operator / *changchang* VP
                            /\
                      t$_{pro}$ *chou yan*
                        smoke cigarette
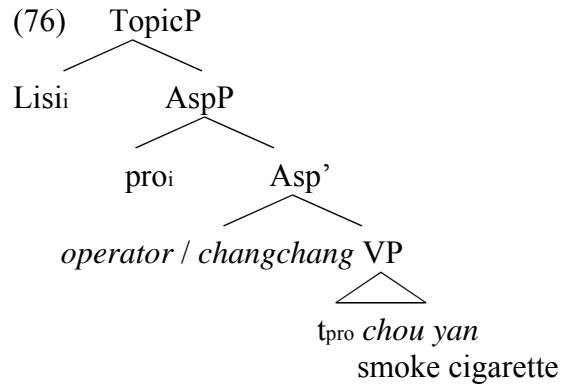
Considering that an Asp° has to be lexicalized (Koopman, 1984), another way to fill the Asp° position is through V-to-Asp movement, as shown in (77), in which, the lexical verb *chou* 'to smoke' is raised to Asp°; we will see the advantage of such an analysis in A-not-A question formation for bare verbs in 4.6:

(77)   TopicP
       /   \
   Lisi$_i$ AspP
            /   \
         pro$_i$ Asp'
                  /   \
              chou$_j$ VP
              smoke   /\
                      t$_{pro}$ t$_j$ *yan*
                             cigarette
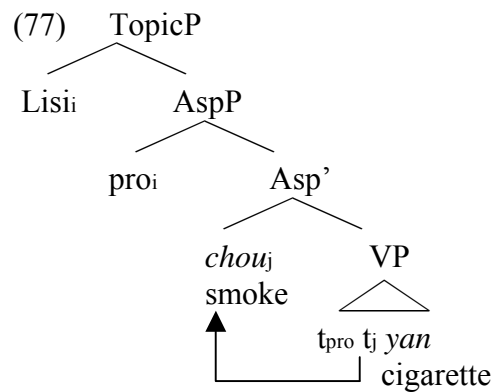
Other evidence shows that the adverb *changchang* can function as an aspect marker. *Kan-jian* 'to see', for example, is a Class I accomplishment verb, and therefore must co-occur with either perfective aspect as in (78) or with a modal as in (79), a point we will explore in Chapter 4.

(78)   Wo kan-jian Zhangsan le.
        I   see   Zhangsan Perf
        'I have seen Zhangsan.

(79)   Wo neng kan-jian Zhangsan.
        I   can   see   Zhangsan
        'I can see Zhangsan.'

(80) is ungrammatical because of the lack of aspectual and modal marking. The null habitual operator is not projected, because *kan-jian* 'see' is an achievement rather than an activity verb. *Changchang* or its reduced form *chang* seems to have the same effects as an aspect marker to save (81) from being ruled out. The contrast between (80) and (81) indicates that *changchang* may function as a habitual aspect marker. I also argue that only activity verbs like *chouyan* 'to smoke' and *tiaowu* 'to dance' etc. can be moved to habitual Asp°, as we have shown in (77). Accomplishment verbs can only resort to overt habitual aspect marker *changchang* to realize habitual interpretation.

(80)   *Wo kan-jian Zhangsan.
         I   see   Zhangsan
         'I see Zhangsan.'

31

(81) Wo changchang kan-jian Zhansan.
I often see Zhangsan
'I often see Zhangsan.'

We will see in 4.6 that the short form *chang* can actually function as the A in A-not-A questions, which will be argued to refer to the highest auxiliary[2]. This kind of capability distinguishes *changchang* from other frequency adverbs like *zong*(*shi*) 'always', *conglai bu* 'never', *henshao* 'seldom', and *youshihou* 'sometimes' that cannot function as A in A-not-A questions and therefore are not aspect markers; instead, they have to resort to yes-no or B-not-B[3] questions when being questioned. Compare (82), (83), (84), (85), and (86):

(82) Ta chang bu chang lai?
he often not often come
'Does he come often?'

(83) *Ta zong bu zongshi lai?   cf.   Ta zong lai ma?
he always not always come   he always come Y/N
'Does he always come?'

(84) *Ta conglai bu conglai lai?'   cf.   Ta conglai bu lai ma?
he ever not ever come   he ever not come Y/N
'He never comes, right?'

(85) *Ta henshao bu henshao lai?   cf.   Ta shi-bu-shi henshao lai?
he seldom not seldom come   he be-not-be seldom come
'Is it the case that he seldom comes?'

---

[2] I will argue in 4.4 that the A in A-not-A questions refers to either Asp° or Modal°, which is formerly assumed to be the main predicate.
[3] I will introduce what B-not-B questions are in 4.3.3.

(86) *Ta youshihou bu youshihou lai?   cf.   Ta shi-bu-shi youshihou lai?
       he sometimes not sometimes come   he be-not-be sometimes come
       'Is it the case that he sometimes comes?'

Actually, it is not uncommon for an independent lexical word like *changchang* 'often' to be grammaticalized as an aspect marker; the culminative perfective marker *le* is reduced from a full verb *liao* 'to finish'; the experiential perfective marker *guo* is itself a verb that means 'to pass'; and, as we have seen, the progressive aspect marker *zai* is a preposition that means 'in, at'.

2.2.2   Perfective Aspects

According to traditional grammar (Li and Thompson, 1981; Chao, 1968), there are two perfective aspects in Mandarin, one is the culminative perfective with *le* as the marker, as shown in (87), and another is the experiential perfective with *guo* as the marker, as shown in (88).

(87)   Ta ku le.
       he cry Perf
       'He cried.'

(88)   Ta ku guo.
       he cry ExpAsp
       'He has cried before.'

In terms of interpretation, Iatridou, Anagnostopoulou, and Izvorski (2001), cf. also McCawley (1971), divide the perfect into the existential perfect and the universal perfect. The existential perfect comprises experiential (89) and resultative (90):

33

(89)   I have been in Los Angeles before.

(90)   I have just arrived in Los Angeles.

(91) is an example for the universal perfect:

(91)   I have lived in Los Angeles since 1998.
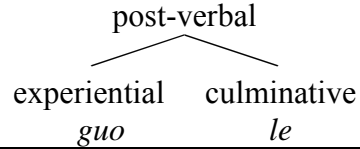
Following their categorization, the *guo*-perfective is existential and the *le*-perfective is resultative in Mandarin. We will see later that in this dissertation the term 'resultative' is reserved for resultative structures rather than aspect marking; for the sake of avoiding confusion caused by terminology, I will call the *le*-perfective the culminative perfective.

The Chinese universal perfective is illustrated in (92), where we can see two *le*'s: one post-verbal and another one clause-final. The post-verbal *le* gives us a culminative reading, as shown in (93). We will see in 2.2.2.2.2 that the clause-final *le* indicates CRS (Li and Thompson, 1981). Such double marking for universal with both culminative and CRS *le*'s is consistent with the semantic interpretation of universal perfect, which involves both completed action and continuing action. I will suggest in 2.2.2.2.2 that such double-*le* marking is determined by the idiosyncrasy of CRS *le*, which selects only telic predicates, contradictory to Li and Thompson's (1981) claim that CRS refers to both telic or atelic situation:

(92)   Wo zai Luoshanji   zhu le   wu nian le.
        I   in Los Angeles live Perf five year CRS
        'I have been living in Los Angeles for five years.'

(93)   Wo zai Luoshanji   zhu le   wu nian.
        I   in Los Angeles live Perf five year
        'I lived in Los Angeles for five years.'

Table I is a summary of perfective markings in Mandarin:

Table I

Universal	Existential
Post-verbal *le* + clause-final *le* culminative CRS	post-verbal experiential culminative *guo* *le*

2.2.2.1 Experiential Perfective

(94) is an example of experiential perfective, the verb being marked with *guo* 'once; ever, before' (Li and Thompson, 1981). *Guo* is not a negative polarity item in Mandarin, though its counterpart in English, 'ever', is. Like durative *zhe*, *guo* is also suffixed to the verb as shown in (94), where the verb is attracted to the Asp° through merging.

(94) Wo qu guo   Luoshanji.
      I   go ExpAsp Los Angeles
      'I have been to Los Angeles (before).'

```
        AspP
       /    \
            Asp'
           /    \
      Vi -guo    VP
       ↑          |
       |_____ti
```
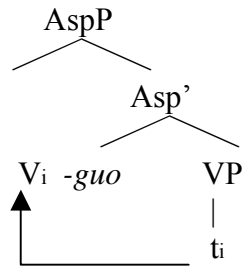
2.2.2.2 Culminative Perfective

2.2.2.2.1 Clause-Final *Le* vs. Post-Verbal *Le*

Chinese linguists, such as Wu (2001), Li and Thompson (1981), and Chao (1968), have distinguished two *le*'s in Mandarin: the post-verbal perfective-marking *le* and the clause-final particle *le* that indicates CRS.

2.2.2.2.2 Clause-Final *Le*: CRS Marker

Li and Thompson (1981) argue that CRS marks a clause as referring to a situation, which is either telic or atelic, whose existence is considered by the participants in the speech act to be relevant to their discourse frame at speech or reference time. Basically, linguists have traditionally treated clause-final *le* as a discourse marker; but there is not too much literature on the formal approach to it. (95) is an example of clause-final *le*.

(95)　　Wo chi pingguo le.
　　　　I　 eat apple　 Perf
　　　　'I ate the apple(s).'

Zhang (2001) assumes clause-final *laizhe* to be a past-tense marker. Based on the similarity between the distribution of CRS-*le* and *laizhe*, she treats CRS-*le* also as a tense-marker, which is higher than aspect projection; compare (95) and (96).

(96)　　Wo chi pingguo laizhe.
　　　　I　 eat apple　 Past
　　　　'I was eating an apple.'

Zhang (2001) does not, however, explain why (96) has the inherent past progressive rather than simple past interpretation. (97) shows the compatibility between *laizhe* and an overt progressive marker *zai*.

(97)　　Wo zai　chi pingguo laizhe.
　　　　I　 Prog eat apple　 Past
　　　　'I was eating an apple.'

(98), however, shows that progressive *zai* cannot be used together with CRS *le*. Such incompatibility indicates that CRS *le* may not be a tense marker as Zhang (2001) has argued. Furthermore, I take (98) as a piece of evidence showing that CRS *le* selects only predicates that cannot be marked with progressive *zai*.

(98)　　*Wo zai　chi pingguo le.
　　　　 I　 Prog eat apple　 CRS

(95), repeated below as (99), is not a counterexample to our claim that CRS

selects only telic predicates. As we have discussed in 2.2.1.3, bare activity verbs like *chi*

'to eat' have habitual interpretation, i.e. a series of completed events that can be

understood as telic.

(99)   Wo chi pingguo le.
        I   eat apple   Perf
        'I ate the apple(s).'

(99) also illustrates that CRS *le* is projected higher than perfective *le*. I suggest

that clause-final *le* is projected in CrsP, higher than AspP. (100) shows how clause-final

le is derived: the whole AspP raises to [Spec, CrsP] to yield the correct order[4].

---

[4] When we have clause-final *le* in sentences with an accomplishment verb, the sentence has strong reading of voluntariness, or completive interpretation (Cinque, personal communication). What is more, as expected, (i) does have a stronger CRS reading than (ii) that has a verb-final *le*:
   (i)   Ta qi   huai wode zixingche le.
             he ride break my   bike   Perf
             'He (finally) managed to break my bike by riding it.'
   (ii)   Ta qi   huai le   wode zixing che.
             He ride break Perf. my   bike
             'He broke my bike by riding it.'
For now, what the voluntariness follows from awaits more research.

(100)   Topic
        /\
Subject$_i$ CrsP
         \
          Crs'
          /\
      le   AspP
             /\
        pro$_i$ Asp'
              /\
        V$_t$ *guo / le*   VP
                   /\
               t$_{pro}$ V'
                    |
                    t
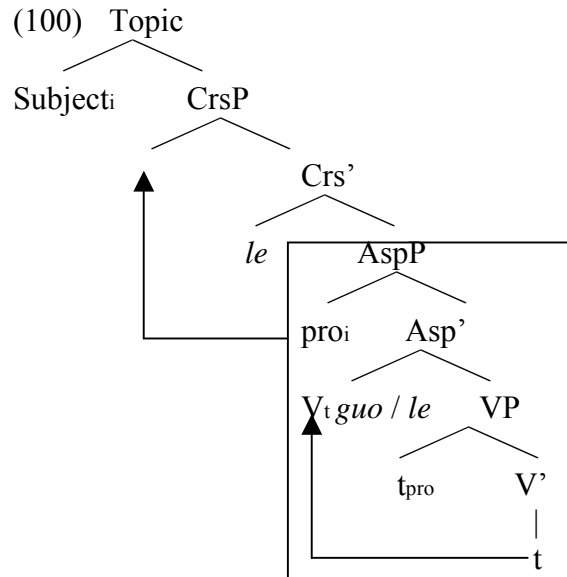
2.2.2.2.3 Post-Verbal *Le*: Culminative Perfective Marker

Post-verbal or culminative perfective *le* is required when the verb has a strong interpretation of completion, i.e. more than termination, cf. Soh and Kuo (2003). A quantity-denoting object, therefore, requires post-verbal *le*, since once the number is given, the event of creating the object should be completed already. Compare (101) and (102). (102) is ungrammatical, because of the use of sentence-final CRS *le*, when there is a quantity-denoting object. (103), with both verb-final and sentence-final *le*'s, has both completion and currently related interpretations.

    (101)   Wo chi le   liangge pingguo.
             I   eat Perf two   apple
             'I ate two apples.'

    (102)   *Wo chi liangge pingguo le.
              I   eat two   apple   Perf
             'I ate two apples.'

(103)　Wo chi le　liangge pingguo le.
　　　　I　eat Perf　two　apple　CRS
　　　　'I have eaten two apples (up to now).'

Verbal *le* also occurs in the *jiu* 'as soon as, immediately' structure, cf. (104) and

(105). In this structure, the speaker emphasizes the completion of the first action, *chi* 'to

eat', preceding the second action, *hui* 'to return':

(104)　Wo chi le　fan　jiu　　　hui　jia.
　　　　I　eat Perf meal immediately return home
　　　　'I will go home right after eating.'

(105)　?*Wo chi fan　le　jiu　　　hui　jia.
　　　　　I　eat　meal CRS immediately return home
　　　　　'I will go home right after eating.'

Finally, verbs with strong accomplishment or achievement Aktionsart require

post-verbal *le*; compare (106) and (107)[5].

(106)　Ta da-po　le　wode huaping.
　　　　he hit-break Perf my　vase
　　　　'He broke my vase.'

(107)　?*Ta da-po　　wode huaping le.
　　　　　he hit-break my　vase　　CRS
　　　　　'He broke my vase.'

---

[5] (107) is grammatical, if we have a completive interpretation, as explained in footnote 4. But, on
the other hand, the following sentence is ungrammatical, though (103) is grammatical:
　　　　　*Ta da-po　le　wode huaping le.
　　　　　He hit-break Perf my　vase　CRS
　　I assume activity verbs allow both post-verbal and sentence-final *le*-marking; but accomplishment
verbs allow only post-verbal *le*-marking for completion or sentence-final *le*-marking for voluntariness, but
not with them together.

40

Actually, achievement verbs in Mandarin, such as *po* 'to wear out', *diao* 'to fall', and *bing* 'to get sick', can only take the perfective aspect markers, i.e. *le* or *guo*, but not the progressive or durative markers, i.e. *zai* and *zhe* (Li, 1990). Compare (108) and (109). There is no adjective or stative verb in Mandarin that corresponds to the English adjective 'sick'; instead, one has to say (108) to express the meaning that 'I am sick' or 'I've got sick':

(108)   a.   Wo bing   le.
                 I   get.sick Perf
                 'I have become sick (I am sick).'

        b.   Wo bing   guo.
                 I   get.sick ExpAsp
                 'I got sick before.'

(109)   *Wo zai   bing.
         I   Prog get.sick
        'I am sick.'

(110)   *Wo bing zhe.
          I   get.sick DurAsp
         'I am sick.'

(111) shows how verbal *le* is derived; i.e. the verb adjoins to the suffix *le* to have perfective marking. Nevertheless, only verbs with a strong completion interpretation can undergo this kind of head-movement.

(111)　AspP

```
(111)   AspP
         /\
        /  \
       /   Asp'
      /    /\
     /    /  \
   Vₜ   le   VP
    ↑        /\
    |       /  \
    |          V'
    |          |
    |          t
    └──────────┘
```
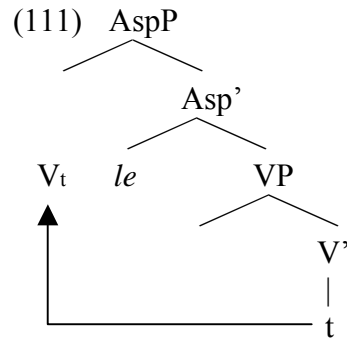
2.2.2.2.4　Inchoative Structure in Mandarin

2.2.2.2.4.1　CRS and Inchoative Structure

We have been seeing examples with activity, accomplishment, and achievement verbs marked with perfective *le* or CRS *le*. When stative verbs co-occur with clause-final *le*, they have an inchoative reading as shown in (112); for example, (112) does not mean that the clothes have completed being small but rather the clothes are small now:

(112)　Yifu　　xiao le.
　　　　clothes small CRS
　　　　'The clothes have become now / have shrunk.'

We have discussed in 2.2.2.2.2 that a CRS *le* selects only a telic predicate. To explain the stative status of *xiao* 'small' in (112), I assume that there is a null inchoative head, Inch, selected by CrsP, which combines with the stative *xiao* 'small', making *xiao* now a telic predicate and then capable of raising to [Spec, CrsP], as shown in (113):

(113) …CrsP

```
        ┌───────┐
        │      CrsP'
   ↑    ┌───┴──────┐
   │   Crs    ┌─InchP──────────┐
   │          │   ┌──┴────┐    │
   │          │        Inch'   │
   │          │      ┌───┴───┐ │
   └──────────│  Inch     xiao │
              │           small│
              └────────────────┘
```
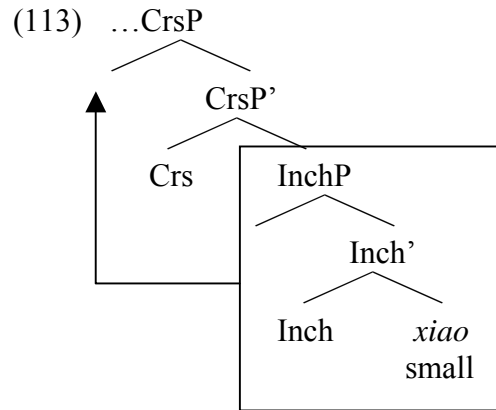
Moreover, I assume that when no inchoative reading is intended, the null head above the adjective is realized as *hen* 'very', the indicator of stative status of a lexical item, which we will go deeply into in 2.2.2.2.4.2.

The contrast between (114) and (115) indicates that statives can only be marked with clause-final CRS *le* but not post-verbal perfective *le*.

(114)   Wo zhidao tade mingzi le.
       I   know his name   CRS
       'Now I know his name.'

(115)   *Wo zhidao le   tade mingzi.
        I   know Perf his   name
       'I knew his name.'

Sentences with activity verbs like *paobu* 'jog' are ambiguous between a perfective reading and an inchoative reading.

(116) Wo paobu le.
       I   jog   CRS/Perf
       'I jogged already.'
       'Now I jog. / I have started jogging now.'

I suggest that, in (116), when *le* is understood as CRS, we have the inchoative reading. Following the structure of CRS marking in (100), I argue that statives and activity verbs have an InchP projected above them, enabling them to achieve their inchoative reading by feature checking against CRS *le* at [Spec, CrsP] through movement, as shown in (117). When *le* is understood as perfective aspect-marker, we have the perfective reading through the verb adjoining with suffix *le*, as shown in (118).

(117) Topic

*wo*i   CrsP
  I
                    Crs'

              le   InchP

                           Inch'

                      Inch   VP

                            t_pro   V'
                                        |
                                     paobu
                                      jog

(118) Topic

wo_i   AspP
I

     pro_i   Asp'

        -le   VP

           t_{pro}   V'
                     |
                   paobu
                   jog
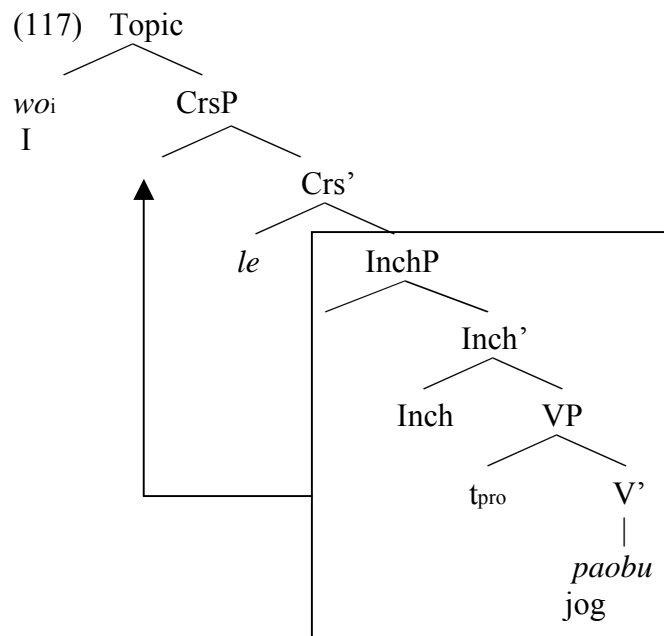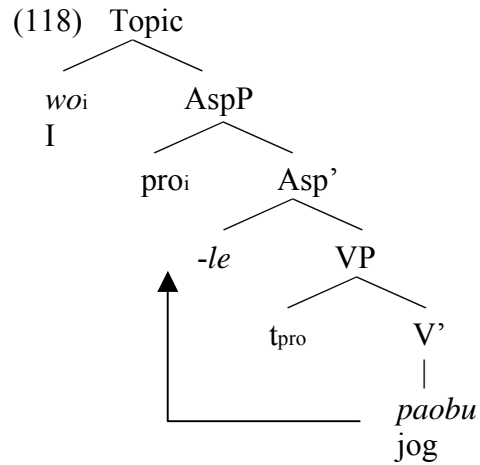
2.2.2.2.4.2 Stative Verbs in Mandarin

Since we are going to see data with adjectives involved in *Bu-Yu* structures, it is necessary for us to take a look at Mandarin adjectives. What are considered adjectives in English are categorized by Li and Thompson (1989) as stative verbs in Mandarin.

The following criteria show that they are verbs: first, statives do not co-occur with the copula, as shown in (119) and (120); though nominal predicates do, as shown in (121) and (122):

(119) *Ta shi hen   ai.
      he be very short
     'He is short.'

(120) Ta hen ai.
     he very short
     'He is short.'

(121) Ta shi Zhongguoren.
     he be Chinese.person
     'He is Chinese.'

(122)   *Ta Zhonguoren.
          he Chinese.person
          'He Chinese.'

Second, stative verbs, like regular activity verbs, are negated by the non-aspect

negator *bu* 'not' as shown in (123), (124), and (125); we will go into more detail about

negation in Chapter 3.

(123)   Ta bu ai.
        he not short
        'He is not short.'

(124)   Ta bu xihuan pingguo.
        he not like   apple
        'He does not like apples.'

(125)   Ta bu chi pingguo.
        he not eat apple
        'He does not eat apples.'

Also, the use of the intensifier *hen* 'very' in an affirmative sentence is obligatory

for stative verbs, though *hen* does not necessarily contribute to degree-specification[6].

Compare (126) and (127):

(126)   Ta hen ai.
        he very short
        'He is (very) short.

---

[6] A similar marking of statives is also reported in Pima (Jackson, 2002). The stative *s-* morpheme in Pima shows up before 80% of monomorphemic adjectives and numerous stative verbs. What is interesting is that *s-* is derived from *si* that also means 'very' like *hen*:
        S   -keeg- aj   'o   heg   hoa.
        Stative-beautiful Verbalizer Imperfective Determiner basket
        'The basket is beautiful.'

46

(127) *Ta ai.
     he short
   'He is short.'

One might potentially argue that *hen* is like the copula in Mandarin for statives. We will see in Chapter 4, however, that *hen* cannot occur as A in A-not-A questions, when other stative verbs can, if we consider the copula as a stative verb. Compare (128) and (129):

(128) Ta ai   bu ai?
     he short not short
     'Is he short?'

(129) *Ta hen bu hen ai?
     he very not very short
     'Is he short?'

Nevertheless, *hen* can be used as a diagnosis to test if an item is at VP level or has been raised higher. In an inchoative structure like (130), the VP has raised to [Spec, CrsP], enabled by an InchP occupied by a null inchoative operator, as we have discussed in 2.2.2.2.4.1; repeated below as (131):

(130) Yifu   xiao le.
     clothes small CRS
     'The clothes are smaller now / have shrunk.'

(131) ...CrsP

```
(131)  ...CrsP
              /\
             /  \
          ↑   CrsP'
          |    /\
          |   /  \
         Crs  InchP
              /\
             /  \
          Inch'
           /\
          /  \
       Inch   xiao
```
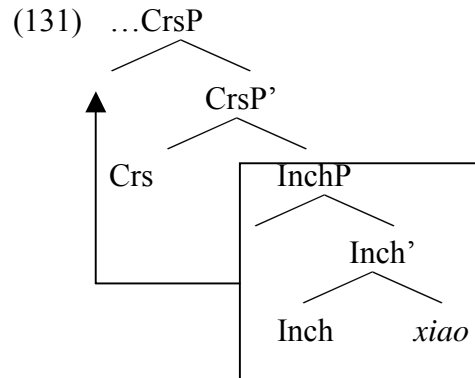
In a sentence with stative predicate, instead of a null inchoative operator above the adjective, there is a *hen*. (132) further proves that CRS *le* selects only telic predicates and that *hen* marks the stative status of a lexical item:

(132) *Yifu   hen xiao le.
       clothes very small CRS
       'The clothes are smaller now / have shrunk.'

We will see more examples of the use of *hen* in Chapter 4 on A-not-A questions.

2.3   Modal Verbs in Mandarin

2.3.1   ModalP above AspP

The most commonly used modal verbs (or auxiliary verbs, optative verbs in traditional Chinese grammar) in Mandarin are shown in Table II (Li and Thompson, 1981):

Table II   Most Common Modal Verbs in Mandarin:

yao	*xiang*	*yuanyi*	*neng*	*keyi*	*hui*	*yinggai*
want to, need, need to	want to	be willing to	can	can, be allowed to	can, might	should, must
bixu	*dei*	*xuyao*	*gan*			
must	got to, ought to	need, need to	dare			

In (133), for example, we can see that the modal verb *yao* 'want' precedes the

verb:

(133)   Ta yao   ti   qiu.
        he want kick ball
        'He wants to kick the ball/play soccer.'

(134) shows the structure that I propose for (133), in which the modal verb takes a

VP complement:

(134)   Topic
        /   \
     *ta*ᵢ   ModalP
      he   /   \
           proᵢ   Modal'
                   /   \
                yao   VP
                want   /   \
                      tₚᵣₒ   V'
                            /   \
                          ti   *qiu*
                          play   soccer

49
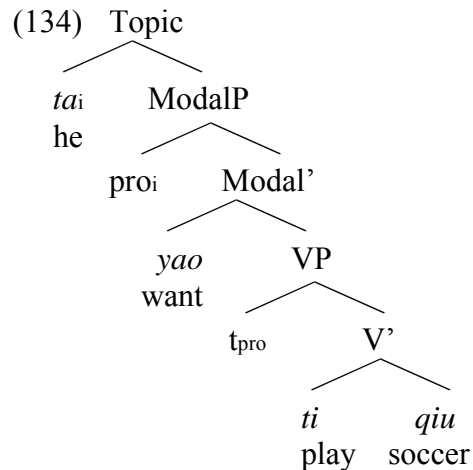
(135) shows that ModalP is higher than AspP, a very common cross-linguistic occurrence (Cinque, 1999). In (135) now the pro co-indexed with the subject pro further moves to [Spec, ModalP] from [Spec, AspP].

(135) Lisi yinggai zai xuexi.
Lisi should Prog study
'Lisi should be studying.'

```
                Topic
               /     \
           Lisi_i    ModalP
                    /     \
                pro_i     Modal'
                         /      \
                   yinggai      AspP
                   should      /    \
                           t_pro    AspP
                                   /    \
                                 Asp     VP
                                 zai    /  \
                                   t_pro   xuexi
                                           study
```
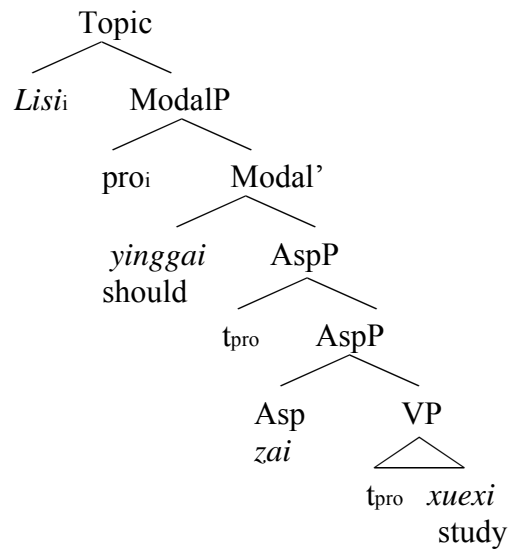
2.3.2 Inchoative with Modals

In an inchoative structure involving modals, the clause-final CRS *le* takes wide scope over the modal. In (136), for example, with the verb *xuexi* 'to study' preceded by a modal and followed by *le*, we obtain an inchoative reading; i.e. Lisi was unable to study before but now he has become capable of doing this. (136) suggests that CRS is projected higher than ModalP and that for the modal verb to achieve the inchoative reading, it is the whole telic ModalP that is raised to [Spec, CrsP], enabled by a null inchoative operator above ModalP:

50

(136) Lisi neng xuexi le.
       Lisi can study CRS
       '(now) Lisi can study; Lisi now has become able to study.'

```
                    Topic
                   /     \
              Lisiᵢ       CrsP
                         /    \
                       Crs'
                      /    \
                   le      InchP
                          /     \
                       Inch'
                      /     \
                  ModalP
                 /      \
            proᵢ       Modal'
                      /      \
                  neng       AspP
                            /    \
                        t_pro    Asp'
                                /    \
                              VP
                             /  \
                        t_pro  xuexi
                               study
```
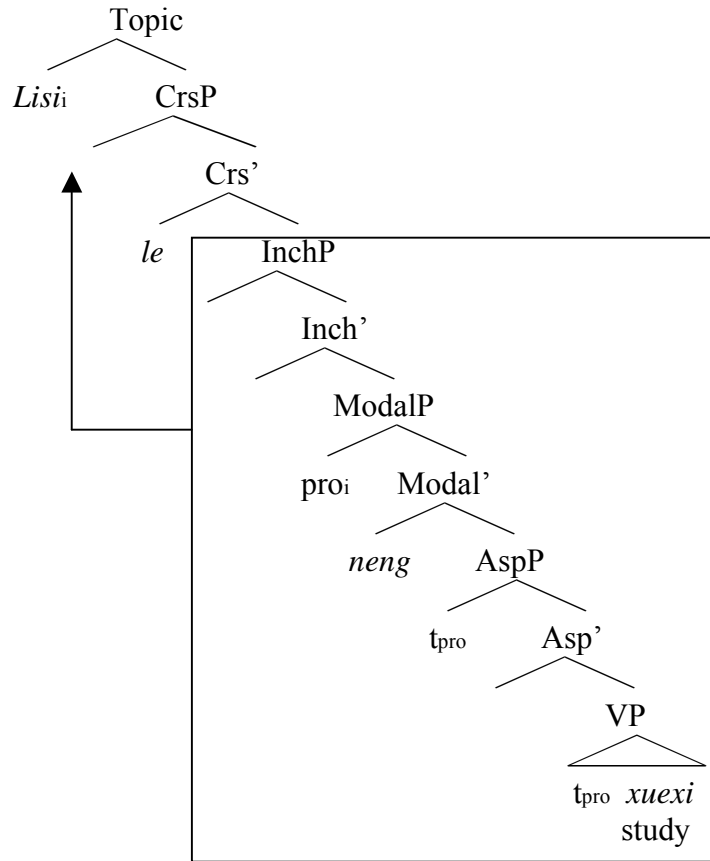
2.4 Conclusion

In this chapter, I have shown that Mandarin aspects can be marked either through c-commanding or through head-movement; bare activity verbs have habitual-aspect, marked with either *changchang* 'often' or through V-to-I movement; the two *le*'s, one universal and one existential, are hosted in CrsP and AspP respectively, with the former

being higher than the latter; and Mandarin modals are structurally higher than Mandarin aspects.

Chapter 3   Negation In Mandarin

3.1   Introduction

Cross-linguistically, negation has been used as a very effective tool in various syntax studies. I will employ Mandarin negation as a diagnostic tool to investigate *Bu-Yu* structures.

According to traditional grammar (Li and Thompson, 1981), there are three negators in Mandarin: one for modals, statives and activity verbs, one for aspects, and one for imperatives. They are *bu*, *meiyou* or the short form *mei*, and *bie* respectively. Such a division of labor suggests that Mandarin, instead of having a single negative projection, might have more than one projection.

Bu-Yu structures differ from one another in terms of negation as shown in Table III. Class I V-V compounds, for example, can only be negated with *mei*, unless they are preceded by a modal; and if the modal is *neng* 'can', their negation is the same as that for potential Class II. Class III descriptives can only have P2 negated with *bu*. Class II is negated with *bu* inserted between P1 and P2.

Table III   Negation of *Bu-Yu*'s

	Class I			Class II	Class III		
	V-V	with *neng* 'can'	with other modals	V-*de*-V	descriptive	resultative	causative
bu	✘	V-*bu*-V	✔	V-*bu*-V	✔	✔	✔
mei	✔	✘	✘	✘	✘	✔	✔

I argue in this chapter that these negators are not sensitive to the aspects but to the type of predicates. I will also propose that there is a NPI aspect marker *you* in negative culminative aspect marking, a counterpart to the null operator in modal negation.

3.2 *Mei* and *Meiyou* Negation

3.2.1   Negation with Perfect Aspect and CRS

In Chapter 2, I have shown that perfective aspect is marked with post-verbal *le* and CRS is marked with clause-final *le*, as repeated in (137) and (138) respectively:

(137)   Wo chi le   liangge pingguo.
         I   eat Perf two   apple
         'I ate two apples.'

(138)   Wo chi le.
         I   eat CRS
         'I have eaten.'   or   'I ate.'

Meiyou 'not have' or its short-form *mei* 'not' is used in perfective and CRS negation. The presence of negation, however, excludes the possibility of *le* surfacing, as in (139) and (140), the former CRS negation and the latter perfective negation.

(139)   Wo mei(you)   chifan.
         I   SNeg (have) eat
         'I did not eat.'
         'I have not eaten.'

(140)   Wo mei(you)   chi liangge pingguo.
         I   SNeg (have) eat two   apple
         'I did not eat two apples.'

(141) shows that *mei*(*you*) and *le* may not co-occur:

(141) *Wo mei(you)   chifan le.
        I   SNeg (have) eat   CRS
        'I haven't eaten or didn't eat.'

I will gloss *mei(you)* as SNeg for stage-level negator, because we will see in 3.3.2 that actually *mei* negation is not only for aspects but also for CRS, which is not necessarily aspectual. On the other hand, aspect- and CRS- marked predicates are stage-level predicates. *Bu* negation, or INeg for individual-level predicates, negates not only individual-level statives and modals but also habitual aspect, as we will see in 3.3.1.

As seen from (141), *le* and its negator *mei/meiyou* are in complementary distribution. My explanation for this phenomenon is that *mei/meiyou* 'didn't' or 'haven't' is actually analytical, consisting of two morphemes: the negator *mei*, the head of NegP, and the head of AspP or CrsP, manifested as either *you* or a null aspectual head. To be more specific, *le*, being a positive polarity item, marks the affirmative perfect aspect or CRS, while *you*, being an NPI, as seen in *meiyou*, marks the negative perfective aspect and CRS. When *you* does not show up, I assume that there is a null aspectual operator, similar to Liu's (2000) proposal for a null modal negator in modal negation, which we will consider later in this section.

You is a negative polarity item in Mandarin spoken in the North, marking perfective aspect and CRS, licensed in negative and A-not-A contexts. It has a broader range of uses in Mandarin spoken in the South, as shown in (142). Compare (142) and (138). We can see that *you* and *le* are both aspect markers, the latter in a preverbal position and the latter postverbal.

(142)   Lisi you   chifan.   (Southern dialect)
        Lisi Perf/CRS eat
        'Lisi ate' or Lisi has eaten.'

(143) is the structure for CRS negation in Mandarin.

(143)   Wo mei(you)   xuexi.
        I   SNeg(have) study
        'I did not study.'

```
                Topic
              /      \
          woi        NegP
          I          /   \
                   Neg'
                  /    \
               mei      CrsP
               SNeg.   /    \
                      Crs
                    /      \
              you / null     VP
                            /  \
                         tpro  xuexi
                               study
```
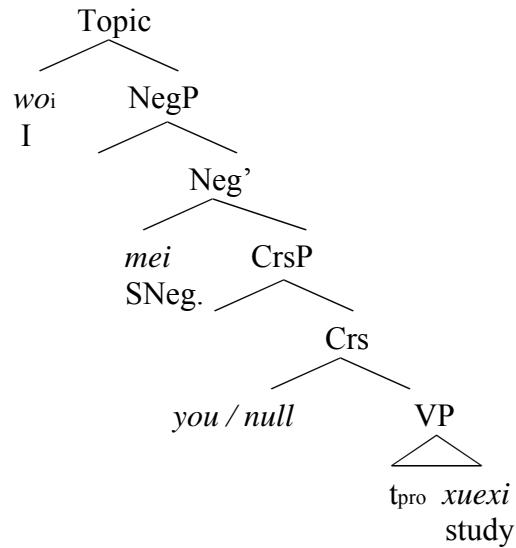
As shown in (143), the negative head *mei* associated with CRS is projected higher than CrsP, triggering *you* or the null operator in CrsP°. Now, no AspP-to-[Spec, CrsP] feature checking is needed; instead, we have *you*, the NPI equivalent of clause-final *le*, or the null operator licensing for CRS marking.

The mechanism for perfective negation is the same as that for CRS negation, as shown in (144). Instead of having the perfective negator *mei* above CrsP, we have it

above AspP and it triggers the NPI *you* or a null operator in Asp° licensing the verb for

perfective.

(144)   Topic
        /   \
     *wo*ᵢ   NegP
      I   /   \
          Neg'
          /   \
       mei   AspP
       SNeg.   /   \
              Asp
             /   \
      you / null   VP
                    / \
                 t_pro *xuexi*
                        study
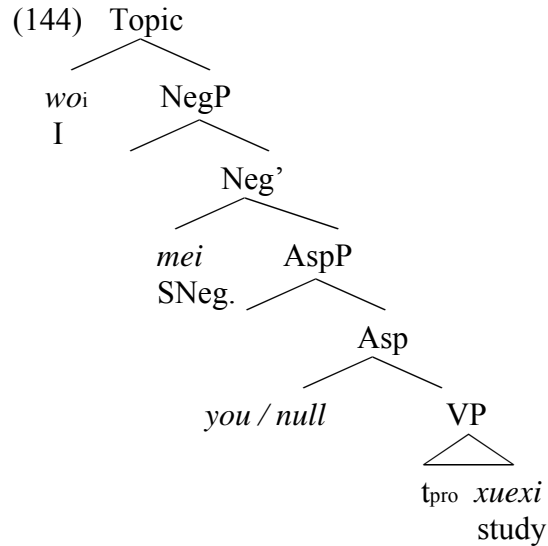
(143) and (144) thus show that Chinese has more than one projection for negation,

one above CRS and one above ModalP and AspP.

3.2.2   Negation with Progressive, Durative, and Experiential Aspects

Mei is also employed to negate a sentence with non-culminative-perfective aspect

marking. Examples (145), (146), and (147) illustrate the negations of the progressive,

durative, and experiential aspects respectively. Since the affirmative markers, *zai, zhe,*

and *guo* are still used in these sentences, the NPI *you* is no longer needed:

(145)   Lisi mei   zai   chouyan.
        Lisi SNeg Prog smoke
        'Lisi is not smoking.'

(146) Lisi mei   zhan zhe.
       Lisi SNeg stand DurAsp
       'Lisi is/was not standing.'

(147) Wo mei   qu guo   Luoshanji.
       I   SNeg go ExpAsp Los Angeles
       'I have never been to Los Angeles.'

Many native speakers tend to use only *mei*, not *meiyou*, to negate non-culminative perfective aspects. Other speakers use *mei* and *meiyou* interchangeably for all aspectual negation; I argue that their use is actually a reanalysis, which is based on the particular use of *meiyou* in culminative perfective negation; in other words, these speakers take *meiyou* as monomorphemic rather than analytical.

(148) is a sketch of the structure for the negation of durative and experiential aspects and culminative aspect without *you* in Asp° but with a null operator. The same V-to-Asp movement as we saw in 2.2.2 is still at play, but this time, it occurs under the licensing of the negator *mei*.

(148) a.   Wo mei   zhan zhe.
             I   SNeg stand DurAsp
             'I am/was not standing.'

       b.   Wo mei   zhan guo.
             I   SNeg stand ExpAsp
             'I never stood.'

```
                    TopicP
                   /      \
               wo_i       NegP
                I        /     \
                      Neg'
                     /    \
                  mei      AspP
                          /    \
                      pro_i     Asp'
                                /    \
                  ( null operator )   VP
                  ( zhe          )   /  \
                  ( guo          ) t_pro  t_j
                  ( zhan 'to stand' )
```
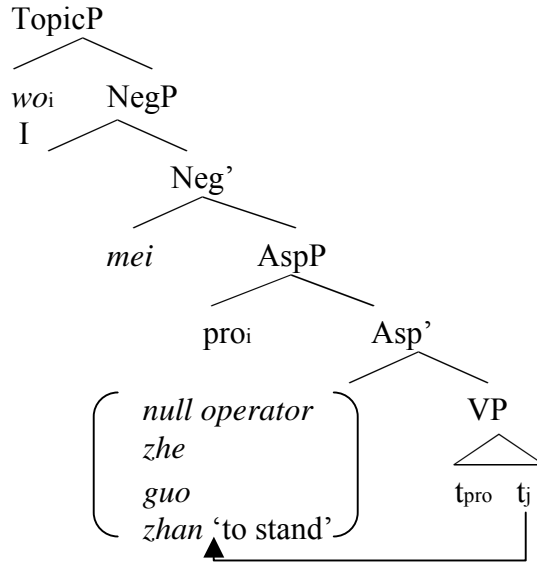
To make the analysis unified, I argue that V-to-Asp movement also happens to culminative marking with the null operator in Asp°; i.e. the null operator is replaced with the raised verb. This move is presumably due to the requirement that INFL, i.e. our AspP, must be lexically realized (Koopman, 1984). We will also see the relevance of such movement in 4.7.2.2 for A-not-A question formation with a culminative perfective interpretation.

3.3 *Bu-* and *Bie-* Negation

3.3.1   The Stative and Activity Negator *Bu*

Unlike *mei*, *bu* is reserved for individual-level predicates, such as verbs without aspectual or CRS markers, i.e. bare stative and activity verbs and modals. *Bu*-negation has different interpretations depending on the Aktionsart of the verb following it (F. Liu, 2001). (149) and (150) are examples of stative negation and (151) an example of modal

negation. Note that for stative adjective negation, *hen* does not co-occur with *bu* unless a

degree reading is intended as shown by the contrast between (150)a and (150)b:

(149) Ta bu   zhidao.   cf.   Ta zhidao.
       he INeg know   he know
       'He does not know.'   'He knows.'

(150) a.   Ta bu   congming.   cf.   Ta hen congming.
               he INeg smart   he very smart
               'He is not smart.'   'He is smart.'

       b.   Ta bu hen congming.
               he not very smart
               'He is not very smart.'
               ?*'He is not smart.'

(151) Ta bu   xiang changge.   cf.   Ta xiang   changge.
       he INeg want.to sing   he want.to sing
       'He does not want to sing.'   'He wants to sing.'

Unlike *meiyou/mei*, *bu* does not co-occur with accomplishment or achievement

verbs that must be marked with perfective marking; compare (152) and (153). In order to

express 'I do not walk to school', we have to resort to (154):

(152) *Wo bu   zou-dao   xuexiao.
        I   INeg walk-arrive school
        'I don't walk to school.'

(153) Wo mei   zou-dao   xuexiao.
        I   SNeg walk-arrive school
        'I didn't walk to school.'

(154) Wo bu   shi zou lu   dao   xuexiao.
        I   INeg be walk road arrive school
        'It is not by walking that I go to school.'
        'I get to school not by walking.'

When *bu* is used with activity verbs, the sentence becomes ambiguous between habitual and modal readings (F. Liu, 2001; Huang, 1988), as shown in (155):

(155)   Ta bu   kan dianshi.
        he INeg watch TV
        'He does not watch TV.' or
        'He does not want to watch TV.'

The person in (155) is either a habitual non-TV-watcher, because he does not own a TV set for instance; or if we go for the modal reading, he is declining the offer to watch a TV program.   The habitual interpretation of the activity verb, *kan* 'to watch,' in negative sentences is related to the habitual interpretation of affirmative activity verbs we saw in Chapter 2, for example (72), repeated below as (156):

(156)   Lisi chouyan.
        Lisi smoke
        'Lisi smokes.'

To account for the alternative modal reading in (155), I will follow our analysis of the null operator marking of culminative perfective and CRS in *mei* negation, as shown in (143). I propose that there is an NPI covert modal operator under the negator *bu*, giving the verb a modal interpretation. Actually, the null operator in modal negation can only be recovered as *xiang* 'to want to' but not any other modals as shown by the two sentences in (157); their affirmative counterpart is (158), which allows only a habitual but not a modal interpretation; (159) is the structure for (157):

(157) Ta bu   kan   dianshi. = Ta bu   xiang kan   dianshi (Liu, 2001 12a.)
       he INeg watch TV   he INeg want.to watch TV
       'He does not want to watch TV.'
Or   'He does not watch TV.'
But   *'He does not need to watch TV.'

(158) Ta kan   dianshi.
       he watch TV
       'He watches TV.'
But   *'He wants to watch TV.'

(159)

TopicP

*ta*i   NegP
he

      Neg'

   bu   ModalP

     pro_i   Modal'

  xiang / null operator VP
  want

        t_pro *kan dianshi*
          watch TV
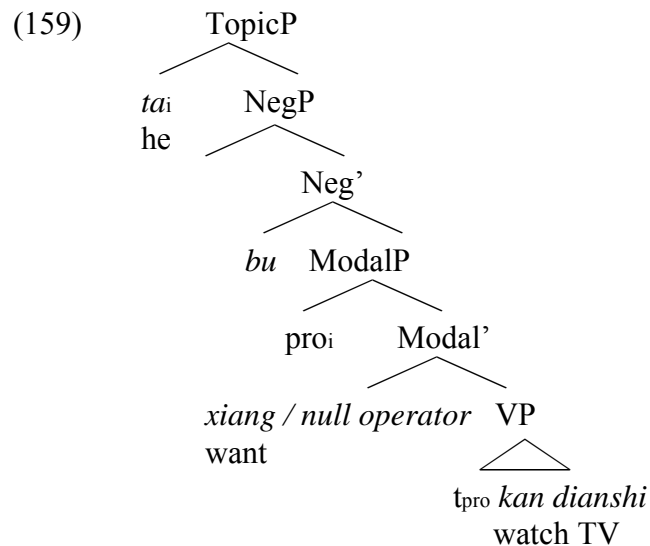
This use of *bu* is very similar to the use of Dutch *nee* 'I don't want', the boulemaeic negator used by Dutch-speaking children (Hoekstra and Jordens, 1994):

(160) Nee   poes vlees   (1;10, their example 15a)
       I.don't.want kitty meat
       'I don't want the kitty to have meat.'

By comparing (143) and (159), we can see the similarity between aspect/CRS negation and modal negation in terms of the use of a covert operator in Mandarin. Both

structures can have a null operator, equivalent to either the overt *you* or the overt modal *xiang*, selected by the negator, *mei* or *bu*. My analyses of the null-operator in negation can be related to Laka's (1994) proposal, based on her study of Basque, for a more abstract ∑P that licenses both NegP and Aff(irmation)P. AffP, for example, is very often realized as a null operator.

Now, we have seen that above stative verbs, we have either the stative marker *hen* to mark the individual-level predicate status or a null inchoative head to change the stative-verb into a stage-level predicate through raising to [Spec, AspP] as discussed in 2.2.2.2.4.2. On the other hand, above the activity verb, we can have a habitual head, realized either as *changchang* or filled through verb raising to realize the individual-level predicate status; or we can have the null inchoative head to change the individual-level predicate to a stage-level predicate, i.e. 'begin-to-habitually-V', a telic predicate that is compatible with CRS *le*.

(161)

hen   stative verb

AspP

Asp'

le   InchP

Inch   stative verb
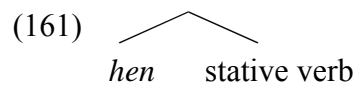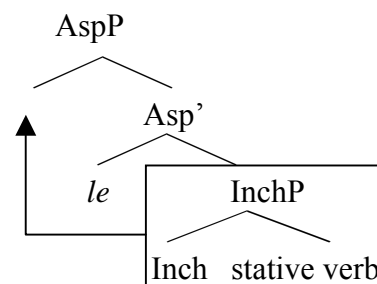
Individual level stative predicate   Stage-level stative predicate

3.3.2   Negation in Inchoative Structures

Bu, being an individual-level predicate negator, can also occur with the clause-final CRS marker *le*, as shown in (162) or (163), the former with an activity verb and the

latter a modal verb. (162) or (163) are inchoative structures that involves negation. (164) and (165) are corresponding examples without inchoative readings due to the lack of CRS *le*.

(162) Lisi bu   chifan le.
       Lisi INeg eat   CRS
       'Lisi does not eat any more.' or
       'Lisi has started not to eat.'

(163) Lisi bu   xiang   chifan le.
       Lisi INeg want.to eat   CRS
       'Lisi does not want to eat any more.'

(164) Lisi bu   chifan.'
       Lisi Ineg eat
       'Lisi does not eat.'

(165) Lisi bu   xiang chifan.'
       Lisi INeg want   eat
       'Lisi does not want to eat.'

The affirmative counterpart for (162) is (166). Also, as seen from the English translation, (162) does not mean 'Lisi did not eat' but rather 'Lisi does not eat any more'; i.e. Lisi has undergone some change and reached a state of not eating. All these facts suggest that the negated phrase *bu chifan* 'not eat' is under the scope of CRS:

(166) Lisi chifan le.
       Lisi eat   CRS
       'Lisi has started eating.'
       'Lisi has eaten already.'

(167) is an example illustrating the interaction between CRS negation and modal negation, which proves again that Chinese has more than one projection for negation, one above CRS, i.e. NegP1, and one above ModalP, i.e. NegP2, as shown in (168):

(167) Lisi mei   bu xiang chifan.
       Lisi SNeg INeg want eat
       'Lisi did not want not to eat any more.'
Or   'It was not the case that Lisi does not want to eat.'

(168) TopicP

*Lisi*ᵢ   NegP1

           Neg1'

      mei   CRS

                CRS'

      null operator   NegP2

                       NegP2'

                  bu   ModalP

                       proᵢ Modal'

                        xiang   AspP
                        want

                             t_pro   Asp'

                                        VP

                                  t_pro   *chifan*
                                            eat
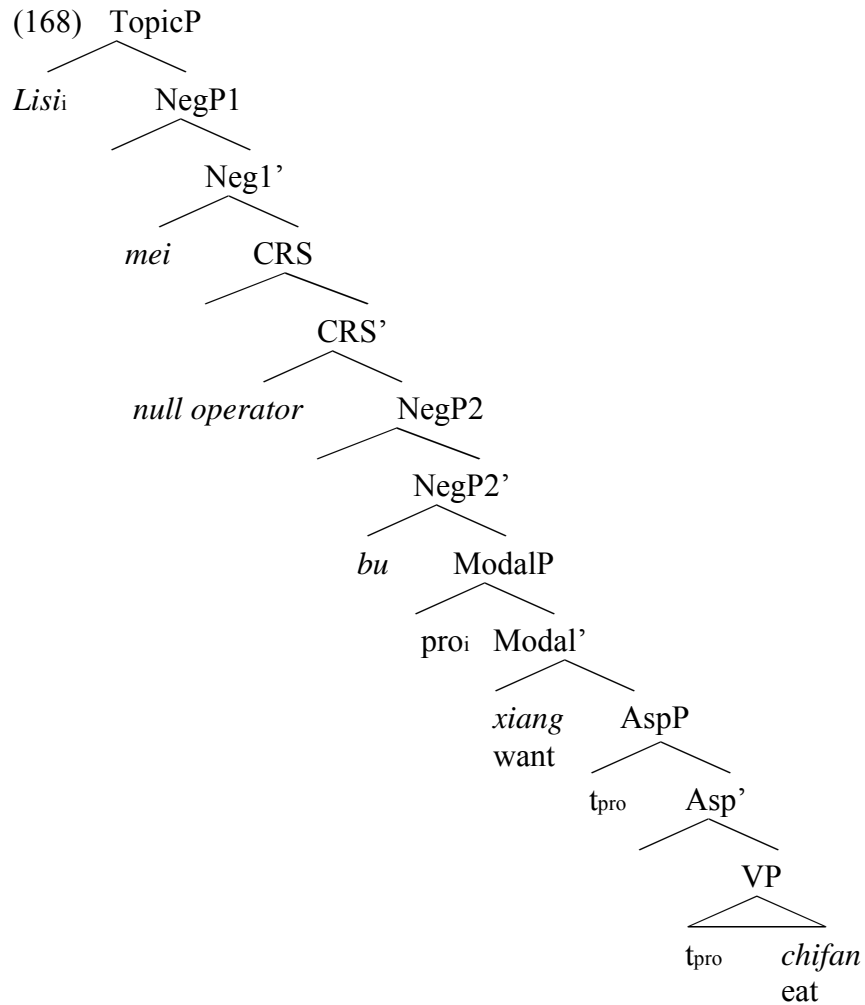
(169) is an example of CRS negation interacting with perfective negation. (170) and (171) indicate that CRS selects only the negator *mei*, homophonous with the culminative perfective negator; *bu* cannot occupy NegP1 for CRS negation. (172) illustrates the derivation of (169). But we will see that *bu* can occupy the same position for modal adverb negation in 4.3.3:

(169) Lisi mei   mei chifan.
       Lisi SNeg SNeg eat
       'It was not the case that Lisi did not eat.'

(170) *Lisi bu   mei chifan.
        Lisi INeg SNeg eat

(171) *Lisi bu   bu xiang chifan le.
        Lisi INeg INeg want   eat   CRS

(172) TopicP

Tree diagram:

```
(172)  TopicP
      /    \
  Lisi_i   NegP1
           /    \
              Neg1'
              /    \
           mei    CRS
                  /   \
                    CRS'
                    /    \
          null operator  NegP2
                         /    \
                          NegP2'
                          /    \
                       mei    ModalP
                              /    \
                          pro_i   Modal'
                                  /    \
                               xiang   AspP
                                want   /    \
                                    t_pro   Asp'
                                           /    \
                                              VP
                                             /  \
                                          t_pro  chifan
                                                 eat
```
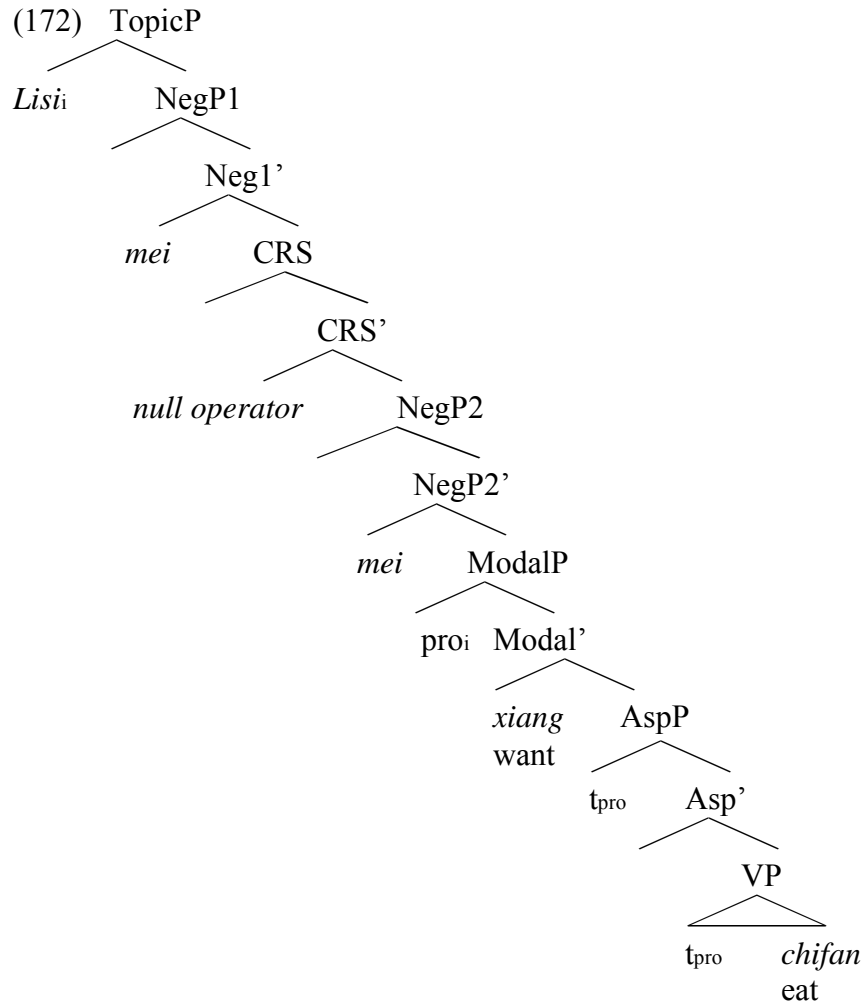
3.4 The Imperative Negator *Bie*

Another negator is *bie*, 'don't'. *Bie* is a reduced form of *bu-yao* 'not-want' and is only used in negative imperatives; compare (173) and (174):

(173) Zou!
go
'Go!'

(174) Bie   zou!
ImpNeg go
'Don't go!'

67

3.5 Conclusion

In this chapter, I have shown that *mei* and *bu* are negators for stage-level and individual-level predates respectively. *You* is argued to be an NPI aspect marker in the negation of culminative perfective. I also argue for the existence of null CRS, perfective, and modal operators in Mandarin negation.

Chapter 4   A-not-A Questions in Mandarin

4.1   Introduction

Different *Bu-Yu* structures have different A-not-A question formations. For Class I V-V compounds, for instance, we can have P1-not-P1P2, or P1P2-not-P1P2 as the A-not-A question formation. For descriptive Class III, only P2 can function as A; i.e. we have P1-*de*-P2-not-P2. For potential Class II, we have P1-*de*-P2-P1-*bu*-P2.

In this chapter, I first offer a literature review, summing up previous studies on A-not-A questions, for example, lexical disintegrity, the identity of A, the derivation of A-not-A, and the B-not-B or *shi*-not-*shi* structure. I later argue that A in A-not-A refers to I°, either Asp° or Modal°. I also argue that A-not-A questions are derived from successive movements that include I-to-Neg movement followed by Neg-to-C movement. At the end, I will demonstrate how A-not-A questions involving modals, bare activity-verbs, and aspects are derived.

4.2   Types of Questions in Mandarin

Let us first have a brief overview of Mandarin question types. There are four types of questions in Mandarin. The first type is wh-questions, as in (176); and it is a well-known fact that Mandarin does not have overt wh-movement (Huang, 1982; Cheng, 1991); compare (175) and (176):

(175)   Zhangsan chi pingguo.
       Zhangsan eat apple
       'Zhangsan eats apples.'

(176)   Zhangsan chi shenmo?
         Zhangsan eat what
        'What does Zhangsan eat?'

The second-type is yes-no questions or *ma*-questions, as shown in (177).

(177)   Ni chi rou   ma?
         you eat meat Y/N
         'Do you eat meat?'

There has not been much literature on the formal study of *ma*. Considering the fact that *ma* is a clause-final speech-act particle, one can potentially argue that *ma* originates as [Head, CP], and then the whole proposition, i.e. the complement of CP, raises to [Spec, CP] to form a yes-no question. A fact not discussed in the literature is that *ma* must occupy the highest matrix C°, not intermediate ones, as shown in (178). (178) can only be interpreted as a yes-no question rather than a statement with an embedded question, since *ma* always has the widest scope:

(178)   Zhangsan zhidao Lisi shi Meiguoren ma?
         Zhangsan know   Lisi be   American Y/N
         'Does Zhangsan know that Lisi is American?'
         *'Zhangsan knows if Lisi is American.'

The third type is disjunctive questions or *haishi*-questions as shown in (179):

(179)   Ta he   shui haishi he   pijiu?
         he drink water or   drink beer
         'Does he drink water or does he drink beer?'

Mandarin has two lexical items that correspond to English 'or': *haishi* and *huozhe*. *Haishi* is a question-polarity item that is licensed in a yes-no question context in a matrix clause, as in (179), or in an embedded clause, as in (180). It does not occur, however, in a negation context like (181). *Huozhe* occurs elsewhere. (179) and (182), for example, form a minimal pair.

(180)   Wo zhidao ta shi Zhongguoren haishi Meiguoren.
          I   know he be Chinese   or   American
        'I know whether he is Chinese or American.'

(181)   *Ta bu he   shui haishi pijiu.
          he not drink water or   beer
        'He does not drink water or beer.'

(182)   Ta he   shui huozhe he   pijiu.
          he drink water or   drink beer
        'He drinks either water or beer.'

The fourth type is A-not-A questions, as in (183) and (184), where the disyllabic verb *xihuan* or only its first syllable *xi* is referred to as A, two of which is separated by a negator, either *bu* or *mei*, depending on whether the predicate is individual-level or stage-level. (184) illustrates the so-called grammatical violation of lexical integrity (Huang, 1991); i.e., the verb *xihuan* 'like' is split in half:

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

(184)　Ni　xi　　bu　xihuan Ditelü?
　　　　you like INeg like　　Detroit
　　　　'Do you like Detroit?'

As we have seen in (178), repeated below as (185), a *ma*-question can never be embedded. Instead, for indirect quotation, what is embedded is an A-not-A question as shown in (186); (187) is an A-not-A question with the same semantic interpretation as (185), the *ma*-question:

(185)　Zhangsan wen Lisi shi Meiguoren ma?
　　　　Zhangsan ask　Lisi be　American　Y/N
　　　　'Does Zhangsan ask if Lisi is American?'
　　　　*'Zhangsan asks if Lisi is American.'

(186)　Zhangsan wen Lisi shi bu　　shi Meiguoren.
　　　　Zhangsan ask　Lisi be INeg be American
　　　　'Zhangsan asks if Lisi is American.'

(187)　?Zhangsan wen bu　　wen Lisi shi bu　shi Meiguoren?
　　　　Zhangsan　ask INeg ask　Lisi　be INeg be American
　　　　'Does Zhangsan ask if Lisi is American?'

Similar effects can also be found in English embedded yes-no questions, in which an indirect quotation like (189) is not allowed; instead a complementizer *whether/if* is inserted and auxiliary inversion is not allowed, as in (190). Chinese does not have complementizer insertion or subject-auxiliary inversion, but resorts to a different question type for yes-no question embedding.

(188)　Does John like reading?

(189)　*I wonder does John like reading.

(190)   I wonder if/whether John likes reading.

Based on the above observations regarding A-not-A questions and yes-no questions as well as their semantic similarity, Cheng (1991) has analyzed A-not-A questions as a subtype of yes-no questions. The yes-no question in (191) and A-not-A question (192), for example, have the same possible affirmative or negative answers as shown in (193) and (194). We will see in 4.3.1, however, that A-not-A questions are more related to wh-questions, from the point of view of syntactic structure (Huang, 1991):

(191)   Ni chi rou   ma?
        you eat meat Y/N
        'Do you eat meat?'

(192)   Ni chi bu   chi rou?
        you eat INeg eat meat
        'Do you eat meat?'

(193)   Chi.
        eat
        'Yes.'

(194)   Bu   chi.
        INeg eat
        'No.'

Other items that can function as A in A-not-A questions include modals as shown in (195), prepositions as in (196), and frequency adverbs as in (197). Also note that in (196)a, it is the preposition *gei* 'to' that functions as A; and in (196)b, it is the verb *da* 'to

make' that functions as A. The contrast between (197)a and (197)b shows that in a

sentence with *chang* 'often' only *chang* can function as A but not the verb. We will offer

explanations in 4.4:

    (195)   Zhangsan hui bu   hui lai?
              Zhangsan can INeg can come
              'Can Zhangsan come?'

    (196)   a.   Lisi gei bu   gei ni da   dianhua?
                   Lisi to INeg to you make telephone
                   'Does Lisi call you?'

            b.   Lisi gei ni da   bu   da   dianhua?
                   Lisi to   you make INeg make telephone
                   'Does Lisi call you?'

    (197)   a.   Wangwu chang bu   chang chi Zhongguo fan.
                   Wangwu often INeg often   eat China   food
                   'Does Wangwu often eat Chinese food?'

            b.   *Wangwu changchang chi bu   chi Zhongguo fan.
                   Wangwu   often   eat INeg eat China   food
                   'Does Wangwu often eat Chinese food?'

The following examples show how *Bu-Yu* structures form A-not-A questions.

(198) and (199) involve Class I, i.e. the V-V compounds. In (198), P1 and P2 together

form A and in (199) only P1 is A.

    (198)   Ni kan-jian   mei kan-jian   ta?
              you look-perceive SNeg look-perceive he
              'Did you see him?'

    (199)   Ni kan mei kan-jian   ta?
              you look SNeg look-perceive he
              'Did you see him?'

(200) is an example for descriptive Class III with only P2 functioning as A.

(200)   Ta pao de   kuai bu   kuai?
        he run DescriptiveMarker fast   INeg fast
        'Does/did he run fast?'

(201) is an example that involves Class II, the potential structure, which is a bit
different from other Classes in that the format is P1-*DE*-P2 P1-*bu*-P2: the first A is the
affirmative form of Class II and the second A is the negative form of Class II. I will offer
an analysis for this in Chapter 6:

(201)   Ta pao de   kuai pao bu   kuai?
        he run Potential.Marker fast run INeg fast
        'Can he run fast?'

4.3   Previous Studies of A-not-A Questions

4.3.1   Huang (1991)

4.3.1.1 A-not-A Not Derived from Disjunctives

Huang (1991) has convincingly argued that A-not-A questions are not derived
from syntactically disjunctive questions as other linguists have proposed (Chao 1961; Li
and Thompson 1981).

Huang (1991) gives several arguments. First, as shown in (184), repeated below
as (203), A-not-A questions can violate lexical integrity; i.e. either the whole disyllabic

verb *xihuan* 'like' or only its meaningless first syllable *xi* can function as A. Disjunctive

questions, however, cannot, as shown in (202):

> (202) *Ni xi   haishi bu xihuan Ditelü?
> you like or INeg like   Detroit
> 'Do you like or do you not like Detroit?'

> (203) Ni xi   bu xihuan Ditelü?
> you like INeg like   Detroit
> 'Do you like Detroit?'

Second, A-not-A questions, but not disjunctive questions, exhibit island effects in

sentential subjects, as shown by the contrast between (204) and (205):

> (204) Wo qu Meiguo haishi bu   qu Meiguo bijiao   hao?
> I   go America or   INeg go America comparatively good
> 'Is it better that I go to America or is it better that I do not go to America?'

> (205) *Wo qu bu   qu Meiguo bijiao   hao?
> I   go INeg go America comparatively good
> 'Is it better that I go to America or is it better that I do not go to America?'

Larson (1985) has argued that in English disjunctive questions, *whether*

undergoes wh-movement at LF, and therefore its originating position cannot be within an

island. A similar property can also be seen in Chinese disjunctives, with *haishi* being the

counterpart of English 'whether'. The reader is also referred to Huang (1981) for an

analysis of Chinese wh-movement.

4.3.1.2 +Q and the Copying Rule

Huang (1991) further divides A-not-A questions into two types: V-not-VO and VO-not-V. (183), repeated below as (206), for example, are V-not-VO. (207) is an example of VO-not-V.

For many native speakers I have consulted, VO-not-V, however, does not sound very natural; I would put a ? for (207). Nevertheless, despite the acceptance of VO-not-V by some speakers, the violation of lexical integrity is no longer allowed in this structure, as shown in (208). VO-not-VO like (209) is not possible, for which no literature has offered an analysis, a point we will come back to in 4.4.

(206) Ni xihuan bu   xihuan Ditelü?
       you like   INeg like   Detroit
       'Do you like Detroit?'

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

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

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

Huang (1988) argues that the V-not-VO structure has an INFL, as shown in (210), with an interrogative feature +Q which 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.' The +Q INFL

77

can also be found in wh-questions, which explains why A-not-A questions have similar

distributions to those of wh-questions.

(210) Ni xihuan bu   xihuan Ditelü.
       you like   INeg like   Detroit
       'Do you like Detroit?'

```
         S
        /\
      NP INFL
      |   /\
      |  |  VP
      |  |  /\
     ni +Q xihuan Ditelü              +Q = xihuan bu
     you   like   Detroit                  like   INeg
```
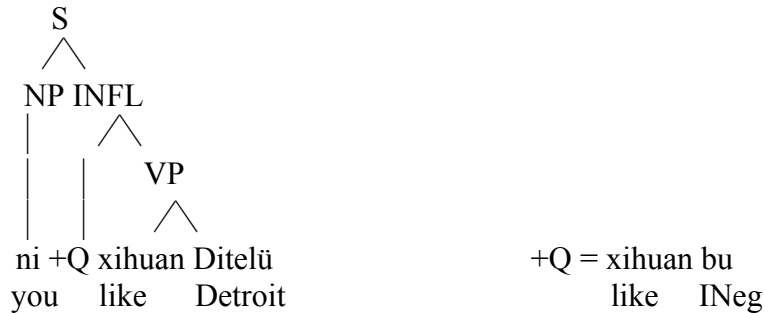
I offer another piece of evidence to show the similarity between A-not-A and wh-

questions: they can both be embedded, as shown in (211) and (212), whereas *ma-*

questions cannot, as shown in (213). Such a contrast does make A-not-A questions look

like an embeddable subtype of yes-no questions, cf. Cheng (1991):

(211)   Wo xiang zhidao ta shenmo shihou lai.
        I   want   know   he what   time   come
        'I wonder when he is coming'

(212)   Wo xiang zhidao ta lai   bu   lai.
        I   want   know he come INeg come
        'I wonder if he is coming or not.'

(213)   *Wo xiang zhidao ta lai   ma.
        I   want   know he come Y/N
        'I wonder if he is coming.'

Huang (1988) argues that VO-not-V is derived from a deep structure with a base-generated VP of the form [[VO] [not VO]] that may undergo a process of anaphoric ellipsis that deletes the second occurrence of O.

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 dissertation.

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

Ernst (1994) further elaborates the proposal concerning the position of +Q as proposed by Huang (1988). He argues that +Q is a head immediately c-commanding V or a feature on V. The motivation behind such a treatment is to account for the ungrammaticality of (214), since higher modal adverbs like *yiding* 'definitely' (Cinque, 1999; Jackendoff, 1972) cannot take questions in their scope, considering that they only operate on a proposition but not a question. Consequently, according to Ernst, (214) is semantically anomalous since +Q is above V but lower than Modal. We will see in (222) that *yiding* 'definitely' can be under the scope of the B-not-B, a different question construction.

(214)   *Ta yiding   qu-bu-qu?
         he definitely go-INeg-go
         'Is he definitely going?'

Let us now take a look at how *yiding* interacts with yes-no, wh-, and disjunctive questions, in order to have a better understanding of its location and that of the +Q of A-not-A question.

As predicted, the yes-no question (215) is grammatical in its interaction with *yiding*, because, as we have seen in 4.2, *ma* tends to always take the widest scope, and consequently *yiding* 'definitely' can never have *ma* in its scope.

(215)   Ta yiding   qu ma?
        he definitely go Y/N
        'Is he definitely going?'

The wh-question (216) is grammatical too, another piece of evidence showing the movement of Chinese wh-words to a position higher than *yiding* 'definitely', i.e. CP.

(216)   Ta yiding   qu nar?
        he definitely go where
        'Where does he go for sure?'

In addition to Ernst's observation, there are additional reasons for us to believe that *yiding* cannot be base-generated at a position higher than *haishi* 'whether', i.e. the CP projection, for example, the contrast between disjunctive questions (217) and (218). In (218), when *yiding* is branched into the *either* and *or* clauses that are connected by *haishi*, i.e. in a position lower than *haishi* or CP but higher than VP, the sentence is grammatical:

(217) *Ta yiding   qu Meiguo haishi Zhongguo.
        he defintitely go America or   China
        'Definitely does he go to America or China?'

(218) Ta yiding   qu Meiguo haishi yiding   qu Zhongguo.
       he definitely go America or   definitely go China
       'Does he definitely go to America or China?'

(219) further shows that the modal adverb *yiding* is higher than ModalP. Now

knowing that it is higher than ModalP but lower than CP, I assume that the projection for

modal adverbs like *yiding* 'definitely' is close to that for CRS.

(219) Ta yiding   dei lai.
        he definitely must come
        'He definitely must come.'
…
        ModalAdverbP / CRS
       ╱   ╲
    yiding   ModalP
    definitely |
                    dei
                    must
                          …
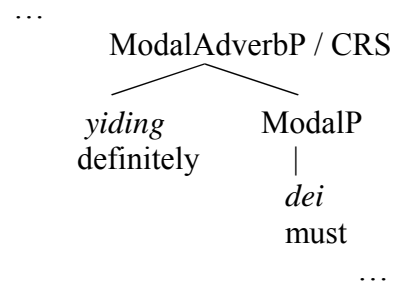
Following our analysis that ModalP is higher than AspP, I argue that the modal

adverb *yiding* is at a position higher than CRS *le* that has a temporal interpretation. Such

relevant positioning can be tested by (220). (220)a is a sentence with CRS-*le* marking.

(220)b is the negation of (220)a; the negator *mei* is higher than CRS, as we discussed in

2.2.2.2.3. (220)c shows *yiding* 'definitely' is higher than *mei* and therefore CRS-*le*.

81

(220) a. Ta chi zaofan le.
     he eat breakfast CRS
     'He ate breakfast.'
or   'He has eaten breakfast.'

    b. Ta mei chi zaofan.
      he SNeg eat breakfast
      'He did not eat breakfast.'

    c. Ta yiding mei chi zaofan.
      he definitely SNeg eat breakfast
      'Definitely he did not eat breakfast.'

Ernst (1994) further argues that, unlike the modal adverb *yiding* 'definitely', locative and temporal adverbs like *zaizher* 'here' and *mingtian* 'tomorrow' are referential and therefore permit A-not-A questions in their scope, as shown in (221).

(221) Mingtian ni qu bu qu?
    tomorrow you go INeg go
    'Are you going tomorrow?'

Ernst (1994) employs (222) to show that in order to form a valid A-not-A question with adverbs like *yiding* 'definitely', the +Q for A-not-A must be syntactically higher than *yiding*. We will discuss questions like (222), termed as B-not-B by Wu (1997), in more detail in the following section:

(222) Ta shi-bu-shi yiding qu?
    he B-not-B definitely go
    'Is he definitely going?'

Ernst (1994) notices the scope relation between A-not-A and sentential adverbs, but we still need to pinpoint the exact position of the proposed +Q. And later in 4.3.3, we will see that the *shi-bu-shi* question is actually different from A-not-A, as argued by Wu (1997).

4.3.3   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 qualifying adverbs and modals, as shown in (223) and (224).

(223)   Zhangsan shi-bu-shi yizhi   qu xuexiao?
        Zhangsan B-INeg-B always go school
        'Does Zhangsan always go to school?'
Or   'Is it the case that Zhangsan always goes to school?'

(224)   Zhangsan shi-bu-shi yinggai qu xuexiao?
        Zhangsan B-INeg-B   should go school
        'Should Zhangsan go to school?
        'Is it that Zhangsan should go to school?'

(222) has shown that *shi-bu-shi* is higher than modal adverb *yiding* 'definitely'. (223) and (224) show that *shi-bu-shi* also has scope over the adverb *yizhi* 'always' and the modal *yinggai* 'should'. Also note that *shi* in B-not-B is no longer the copula since in (223) and (224), for example, the lexical verb is not *shi* 'to be' but *qu* 'to go'. I assume that the *shi* in B-not-B is derived from the copula, with the meaning of 'is/was it the case that...' as seen from the English translation for (223).

Wu's (1997) examples, (214) and (215), suggest that B-not-B is higher than modals. The following examples show that B is consequently higher than aspects. (225),

83

(226)a, (227)a, and (228)a illustrate how B-not-B questions interact with the culminative, experiential, durative, and progressive aspects respectively; (226)b, (227)b, and (228)b are the corresponding A-not-A questions.

(225)   a.   Ni shi-bu-shi ku le?
                 you B-not-B cry Perf
                 'You cried, right?'
     or   'Did you cry?'

         b.   Ni ku mei ku?
                 you cry SNeg cry
                 'Did you cry?'

(226)   a.   Ni shi-bu-shi qu guo   Ditelü?
                 you B-not-B go ExpAsp Detroit
                 'Have you ever been to Detroit?'

         b.   Ni qu (guo)   mei qu guo   Ditelü?
                 you go (ExpAsp) SNeg go ExpAsp Detroit
                 'Have you ever been to Detroit?'

(227)   a.   Ni shi-bu-shi na zhe   yiben shu?
                 you B-not-B hold DurAsp a   book
                 'Are/were you holding a book?'

         b.   Ni na (zhe)   mei na zhe   yiben shu?
                 you hold (DurAsp) SNeg hold DurAsp a   book
                 'Are/were you holding a book?'

(228)   a.   Ni shi-bu-shi zai kanshu?
                 you B-not-B Prog read
                 'Are/were you reading?'

         b.   Ni zai mei zai kanshu?
                 you Prog SNeg Prog read
                 'Are/were you reading?'

Actually, B-not-B can also appear in the left periphery of a sentence as shown in (229):

(229)   Shi-bu-shi ni yao   bangzhu wo?
        B-not-B   you want help   me
        'Is it true that you want to help me?'

Shi-bu-shi can also be found at a clause-final position, which makes the whole sentence like a tag question as shown in (230)a and (230)b, the former with affirmative main clause and the latter with negative main clause; in this case, B-not-B behaves similarly to Indian English *isn't it* or French *n'est-ce pas* as shown in (231) and (232):

(230)   a.   Ni xiang   bangzhu wo, shi-bu-shi?
                you want.to help   me B-not-B
                'You want to help me, right?'

        b.   Ni bu   xiang   bangzhu wo, shi-bu-shi?
                you INeg want.to help   me B-not-B
                'You do not want to help me, right?'

(231)   John should come, isn't it?

(232)   Jean doit venir, n'est-ce pas?
        John must come isn't-this not
        'John has to come, doesn't he?'

Tag questions are usually not embeddable, as shown by (233):

(233)   *I asked Tom if he liked Mary, didn't he?

Such incompatibility between tag question and embedding holds true with clause-final B-not-B questions like (230) as well:

(234)   ?*Wo xiang zhidao ni   yao bangzhu wo, shi-bu-shi?
          I   want   know you will help   I   B-not-B
        'I wonder if you will help me.'

Sentence-medial instances of B-not-B like (228) and sentence-initial B-not-B as in (229) can, however, be embedded, as shown by (235) and (236):

(235)   ?Wo xiang zhidao shi-bu-shi ni yao   bangzhu wo?
          I   want   know B-not-B   you want help   I
        'I wonder if you want to help me.'

(236)   Wo xiang zhidao ni   shi-bu-shi yao bangzhu wo?
         I   want   know you B-not-B   want help   I
        'I wonder if you want to help me.'

The contrast between (234) and (235) and (236) suggests that there are two types of B-not-B +Q's in Mandarin. I argue that the clause-final one in (234) is a tag particle, which we will not consider further. As for the sentence- initial and medial ones, I argue that they are base-generated in C°, which gives them not only the power to have broad scope over modals, aspects, and sentential adverbials but also the power to determine the force of the sentence. *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. What is more, *shi*, the copula, is individual-level and cannot be negated by *mei*.

(237) is the structure for sentence-medial B-not-B, with *shi-bu-shi* base-generated in C°, right above ModalP:

(237) Ni shi-bu-shi yao bangzhu wo.
       you B-not-B   want help   me
       'Is it the case that you want to help me?'

```
        Topic
       /    \
    ni_i     CP
    you     /  \
          C'
         /   \
        C     ModalP
   shi-bu-shi /   \
          pro_i   Modal'
                 /    \
              yao      VP
              want    /\
                   t_pro bangzhu wo
                        help     I
```
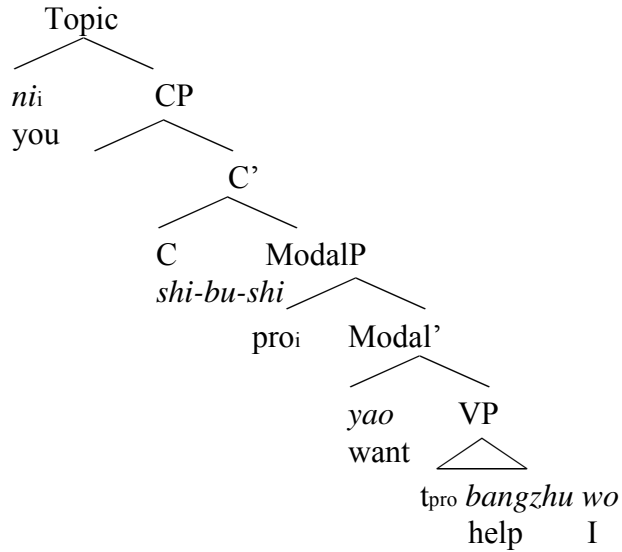
(238) illustrates the derivation of sentence-initial *B-not-B*. I argue that in this case, sentence-initial *shi-bu-shi* is either base-generated in TopicP, taking the whole proposition as its complement, or is moved there from Topic°.

(238) Shi-bu-shi ni yao bangzhu wo.
       B-not-B   you want help   I
       'Is it the case that you want to help me?'

```
                    Topic
                 /        \
        shi-bu-shiⱼ        Topic
                        /        \
                     niᵢ          CP
                     you         /  \
                                   C'
                                /      \
                              C       ModalP
                              tⱼ     /        \
                                  proᵢ       Modal'
                                          /        \
                                        yao         VP
                                        want       /\
                                              tₚᵣₒ bangzhu wo
                                                   help     I
```
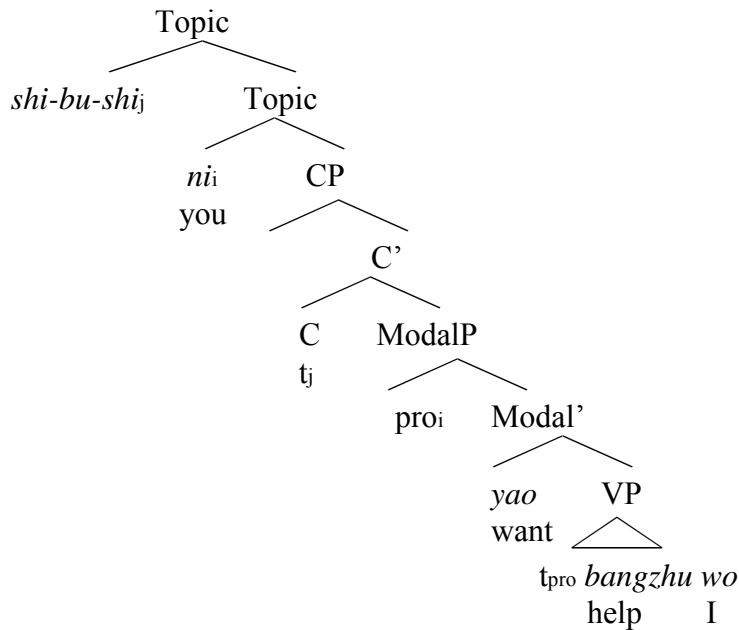
4.3.4   Dai (1990): A Phonology-Based Copying Rule?

Dai (1990) argues that the variable length of the copied sequence in V-not-VO, as
illustrated in (183) and (184), i.e. the grammatical lexical disintegrity, is determined by a
phonological rule such as a 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 examples we have seen like (239):

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

88

This is not true in A-not-A questions. In A-not-A questions, only *mei* is allowed for sentences involving culminative/CRS marking, because only *meilai* 'didn't come' instead of *meiyoulai* 'did not come' forms a disyllabic troche; compare (240) and (241); see also Duanmu (1995) on the Chinese stress patterns:

(240)   Ta lai   mei   lai?
        he come SNeg come
        'Did he come?'

(241)   *Ta lai   mei-you   lai?
        he come SNeg-have come
        'Did he come?'

I will argue in 4.7.2 that the unavailability of *mei-you* in A-not-A questions is also caused by syntactic factors.

4.4   A: Main Predicate or What?

Some linguists such as Ernst (1994), Huang (1991), Li (1990), and Li and Thompson (1981) have argued that the A as in A-not-A questions is the main predicate. It has never been clarified, however, what we mean by 'main predicate' in discussing A-not-A questions. For example, main predicate can refer to the thematic or lexical verbs like *xihuan* 'like' as we have seen in (183) and (184), repeated below as (242) and (243):

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

(243)   Ni xi   bu   xihuan Ditelü?
        you like INeg like   Detroit
        'Do you like Detroit?'

Alternatively, main predicate can refer to the highest verb or auxiliary in a sentence (Ross, 1969).

Recall also that A can be a modal verb such as *neng* 'can' or *yuanyi* ' be willing to', which are obviously not lexical verbs.

(244)   Ta neng bu   neng bangzhu wo?
         he can INeg can   help   I
         'Can he help me?'

(245)   Zhangsan yuan(yi) bu   yuanyi kaiche.
          Zhangsan willing INeg willing drive
         'Is Zhangsan willing to drive?'

Furthermore, the experiential perfect marker *guo*, unlike what we have seen in (226) where it is under the scope of B-not-B, can either follow A-not-A, as shown in (246), or follow each A, as shown in (247):

(246)   Ni   qu mei   qu guo   Meiguo?
         you go SNeg go ExpAsp America
         'Have you ever been to America?'

(247)   Ni   qu guo   mei   qu guo   Meiguo?
         you go ExpAsp SNeg go ExpAsp America
         'Have you ever been to America?

(248) and (249) illustrate the same phenomenon for the suffixal durative aspect-marker *zhe*. Again, A seems to be something more than the lexical verb:

(248) Lisi shou li na   mei   na zhe   yiben shu?
       Lisi hand in hold SNeg hold DurAsp a   book
       'Is/was Lisi holding a book in his hand?'

(249) Lisi shouli   na zhe   mei   na   zhe yiben shu?
       Lisi hand-in hold DurAsp SNeg hold DurAsp a   book
       'Is/was Lisi holding a book in his hand?'

Consequently, Ross (1969)'s characterization of the main verb as 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 or aspectual markers; and the +Q of A-not-A is in C°, like B-not-B; but the former reaches C° through successive cyclic movements 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.

4.5   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). For example, as shown in (250), like the speech-act yes-no question particle *ma* that is base-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:

(250) (a)   Zhangsan lai   ma?
               Zhangsan come Y/N
               'Does Zhangsan come?

(b)   Zhangsan lai   bu?
        Zhangsan come INeg
        'Does Zhangsan come?'

(b)   Zhangsan lai   mei?
        Zhangsan come SNeg
        'Did Zhangsan come?'

TopicP
Zhangsan_i   CP
                    C'
        ma /   NegP
                        Neg'
        Step I
                    bu/mei   IP
                            pro_i   I'
                                        VP
                            t_pro lai
                                    come
        Step II
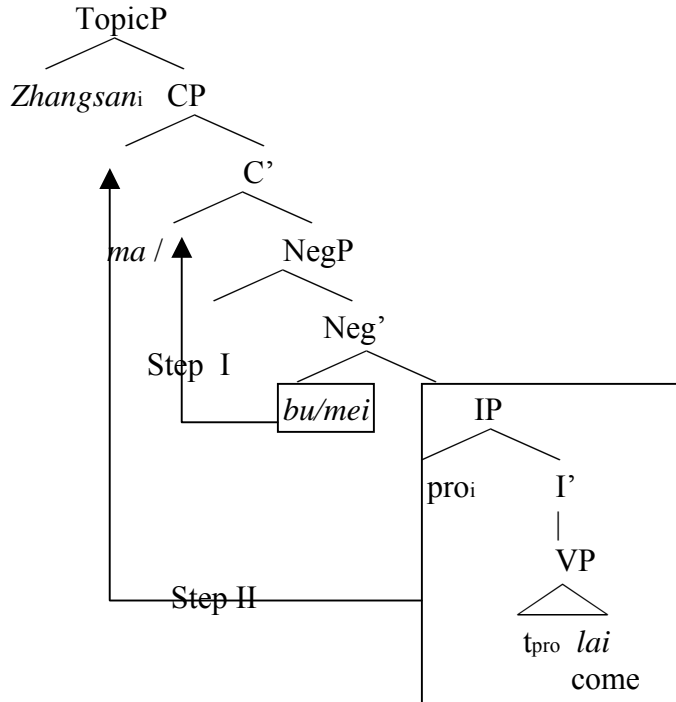
In yes-no questions, only Neg° undergoes head-movement to reach C°. In A-not-A questions, however, I argue that it is [A-not] that moves to C° from Neg°. Before the Neg-to-C movement, I° is adjoined to Neg°, filling in the [A-Neg] template. The partial spell-out of I°, however, is phonologically conditioned. Such a phonological realization of +Q is blind to syntactic or lexical boundary, which results in lexical disintegrity; i.e. any segment of A° is capable of filling the [A-Neg] template. Furthermore, since this is not a rigid head-movement but the 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 formation. Through such an adjoining and non-trace-deletion process, we arrive at the surface structure.

(251) illustrates how A-not-A questions with modal verbs are formed through the above-mentioned successive cyclic movements. *Yuan* or *yuanyi* 'willing to' from I° is first adjoined to *bu* with its trace maintained, forming a [A-Neg] template at Neg°. Then the template is attracted to C° where the force of the whole sentence is determined.

(251)   Zhangsan yuan(yi) bu   yuanyi chi?
        Zhangsan willing INeg willing eat
        'Is Zhangsan willing to eat?'

```
              TopicP
             /      \
      Zhangsanⱼ      CP
                    /  \
                       C'
                      /  \
                   NegP
                  /    \
                      Neg'
            ┌──────────────┐  \
            │ yuanyiᵢ bu / yuanᵢ bu │  ModalP
            └──────────────┘    /    \
                                   Modal'
                                  /    \
                            yuanyiᵢ      VP
                                        /\
                                    tpro  chi
                                          eat
```
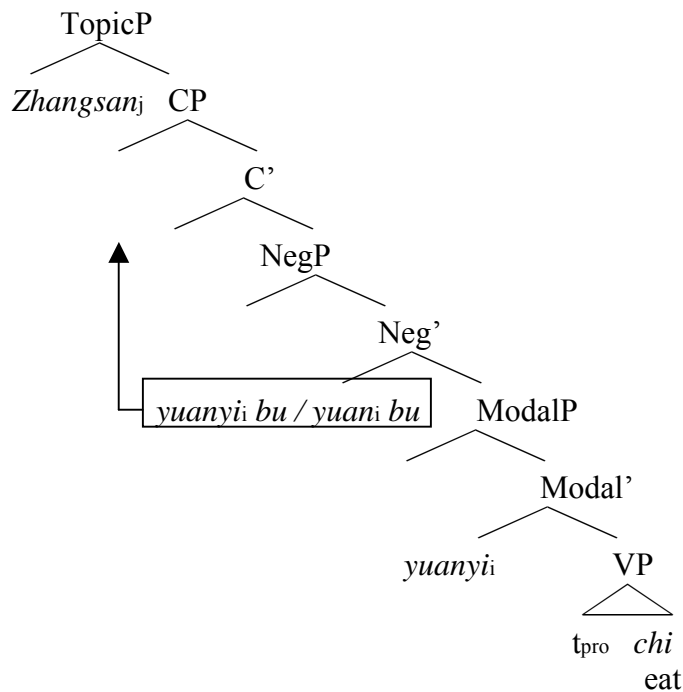
The involvement of Asp° and Modal° explains why we have the alternation of A-*bu*-A and A-*mei*-A, which are sensitive to the type of predication. Compare the minimal

pair, (252) and (253); 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:

(252) Ta lai   bu   lai?
       he come INeg come
       'Does he come?'

(253) Ta lai   mei   lai?
       he come SNeg come
       'Did he come?'

I°, being the starting point of A-not-A formation, explains why (214), repeated below as (254), is impossible; recall that the sentential adverbial *yiding* 'definitely' is higher than IP (Cinque, 1999), and therefore it does not allow questions within its scope.

(254) *Ta yiding   qu-bu-qu?
         he definitely go-INeg-go
         'Is he definitely going?'

In their analysis of German wh-copy construction, Fanselow and Mahajan (2000) account for the undeleted wh-traces by arguing that they are actually not on the chain of head-movement: the intermediate wh-word, *wer* 'who', as shown in (255), 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.

(255)   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
```
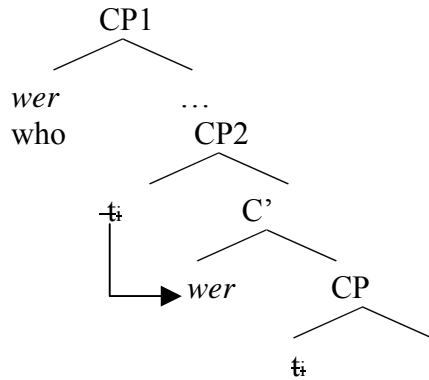
Another example of undeleted trace is the verb-doubling phenomenon in Nupe predicate cleft constructions (Kandybowicz, 2001) as shown in (256). Koopman (1984) argues that the trace of the verb that is raised to C° for clefting is spelled out as a resumptive verb[7]:

(256)   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 assumed to happen at LF. Recent works on overt movements by Kayne (1998), as well as Koopman (2000) on English wh-subject vs. wh-object movements, and Liu (2002) on the co-occurrence between wh-

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[7] Alternatively, Nunes (2001) also argues that the phonetic realization of multiple chain links arises through head-movement that is followed by morphological reanalysis.

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. We have shown in 4.3.3 that B-not-B originates higher than modal adverbs, modals, and aspects. I will propose that B-not-B is base-generated in C° position, a realization of +Q. Spared all the derivations starting from I-to-Neg movement, B-not-B is able to have scope over all the above items.

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

I have argued that A actually refers to I°, as revealed by the fact that the negator in A-not-A is sensitive to the type of the predicate.

I have also argued in Chapter 2 that 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 adverb *changchang* 'often', as shown again in (257).

(257)　Wo AspP[changchang/xiyan$_i$ VP[t$_i$]].
　　　　I　　　often　/　smoke
　　　'I (often) smoke.'
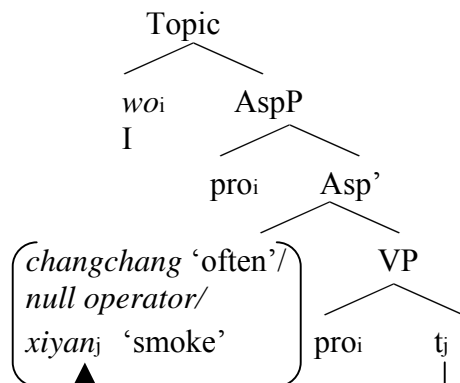
(258) and (259) are examples of A-not-A questions involving a bare verb and adverbial; i.e., A can refer to either the lexical verb or the habitual aspect marking adverb *changchang*:

(258) Zhangsan xi(huan) bu   xihuan zheben shu.
       Zhangsan like   INeg like   this   book
       'Does Zhangsan like this book?'

(259) Zhangsan chang bu   chang lai?
       Zhangsan often INeg often come
       'Does Zhangsan come often?'

(260) illustrates the derivation for (258) and (259); i.e. I° is realized Asp° and is occupied by the habitual aspect marker, the adverb *chang* 'often', as we have seen in 2.2.1.3, 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 4.5, i.e. I-to-Neg and then Neg-to-C; again, the adjoining of I to Neg does not delete its trace:

(260) TopicP

Zhangsan_k   CP

C'

[*xi(huan)_i / chang_i bu*]_j   NegP

Neg'

t_j   AspP

pro_k   Asp'

| *xihuan_i / chang_i* |
| like   often |

VP

t_pro   V'

V   N

t_i / *lai*   *zheben shu*
come   this book
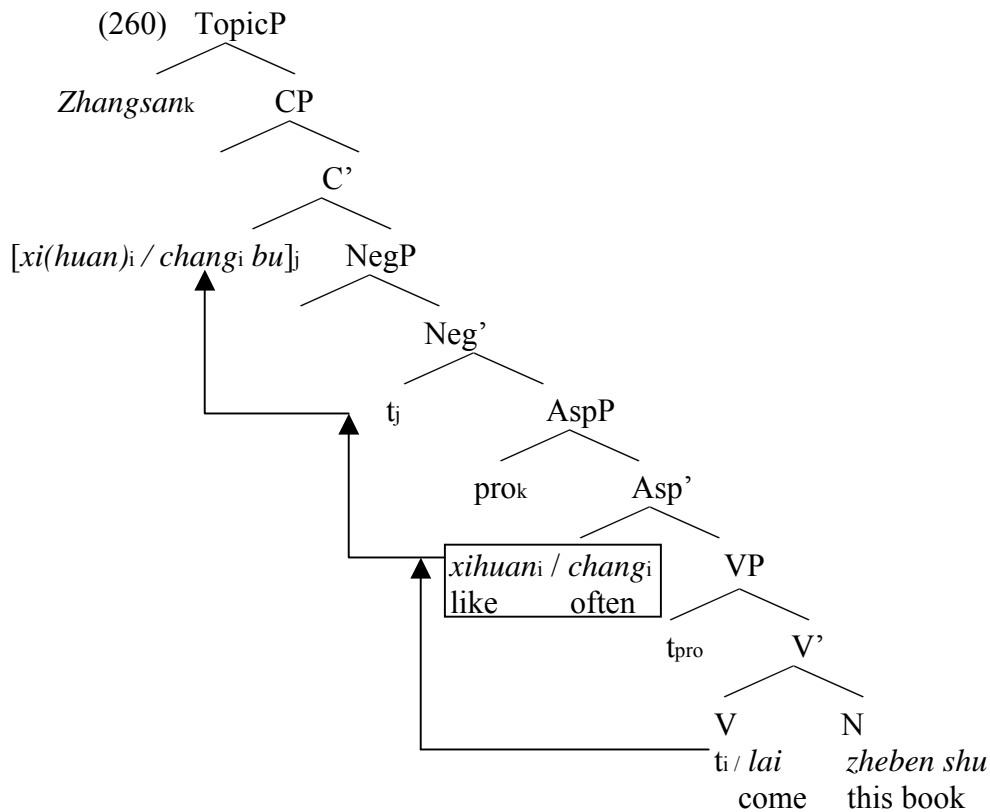
Note that only monosyllabic form of *changchang*, i.e. *chang*, is used in (259); when the disyllabic form is used, the sentence does not sound very natural. This is consistent with Dai (1997)'s claim of the Disyllabification Rhythm Rule that we have discussed in 4.3.4:

(261) ?Zhangsan chang(chang) bu   changchang lai.
       Zhangsan often   INeg often   come
       'Does Zhangsan come often?'

By arguing for V-to-I and then I-to-Neg movements, one can also explain why AB-not-AB is not possible, i.e. (208), repeated below as (262), since, as shown in (260),

98

what moves is only I° or part of it, but not the whole VP involving the internal argument

Ditelü 'Detroit'.

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

I suggest that A-not-A questions with A as a preposition, as shown in (196), repeated below as (263), have similar structure to (260). I suggest that the PP of *gei 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-not-A question formation. For other non-complement 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 Thompon, 1982), a result of verbal grammaticalization; for example *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[8].

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[8] In (263), I will ignore the details of the PP *gei ni* 'to you'.

(263) Lisi gei mei gei ni da   dianhua?
       Lisi to SNeg to you make telephone
       'Did Lisi call you?'

```
                    TopicP
                   /      \
             Lisi_k        CP
                          /  \
                            C'
                          /    \
                [gei_i mei]_j    NegP
                                /   \
                                    Neg'
                                   /    \
                                 t_j     AspP
                                        /    \
                                   pro_k      Asp'
                                             /    \
                                         gei_i     XP
                                          to      /  \
                                            t_i  ni   VP
                                                you  /  \
                                                  t_pro  V'
                                                        /  \
                                                       V    N
                                                      da    dianhua
                                                     make   telephone
```
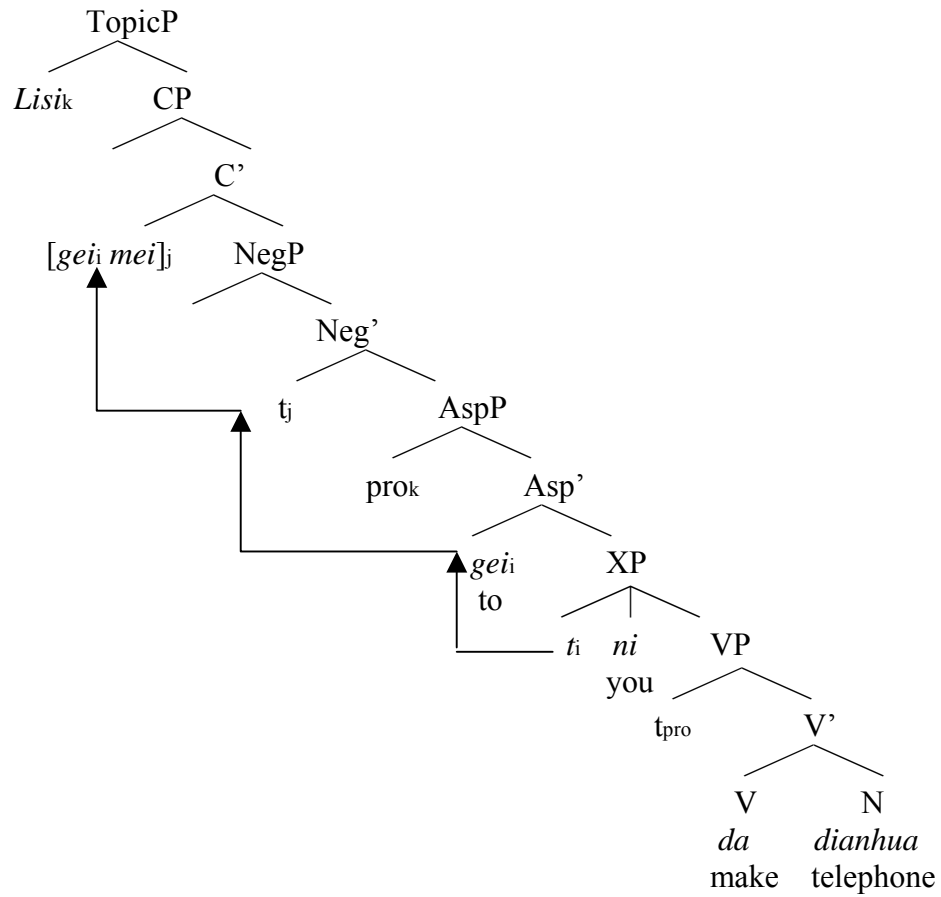
(264) and (263) form a minimal pair. They further support the idea that prepositions have verbal features in Mandarin, since they are sensitive to the type of predication, as seen from their choice of either *bu* or *mei* for negation.

(264) Lisi gei bu   gei ni da   dianhua?
       Lisi to INeg to you make telephone
       'Does Lisi call you?'

4.7 A-not-A Questions for Sentences with Aspect Marking

4.7.1 Progressive *Zai*

(265) illustrates how A-not-A questions with progressive aspect marking are formed; there is not too much difference from my treatment of modals as shown in (251). Now it is *zai* that occupies Asp° and moves to Neg° that is occupied by SNeg *mei*.

(265)   Zhangsan zai   mei   zai   kan zheben shu?
           Zhangsan Prog SNeg Prog read this   book
           'Is Zhangsan reading this book?'
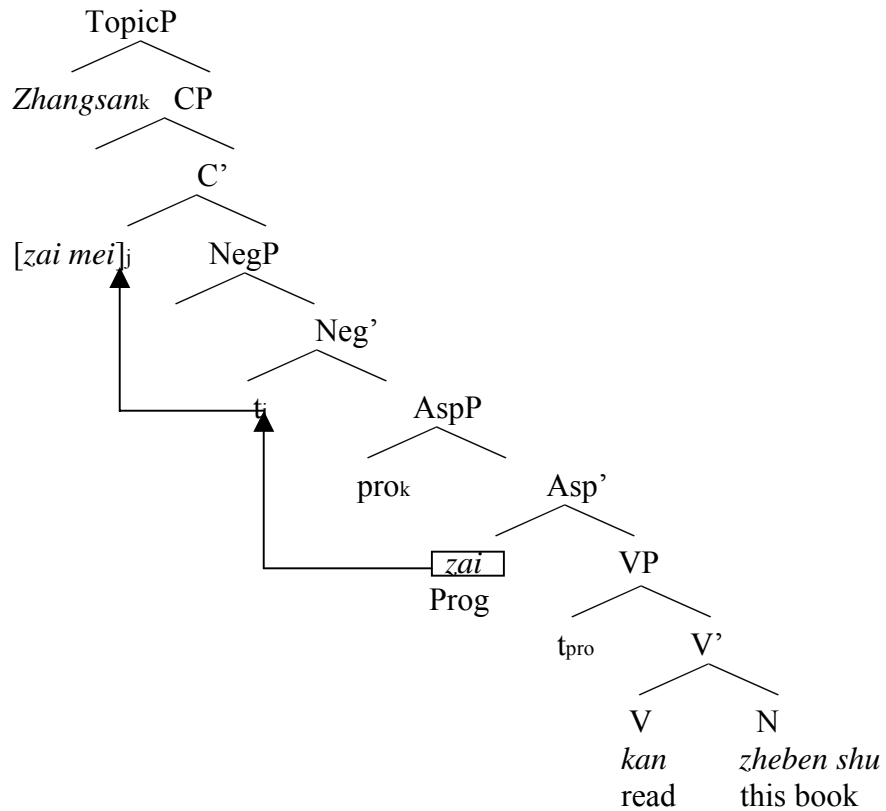
4.7.2   Culminative Perfective Aspect

4.7.2.1 When A is *You*

Let us look at the simpler case first when I° is occupied by the culminative perfective aspect particle *you* as shown in (266)a. (266)b and (266)c are the corresponding affirmative and negative sentences. (267) shows the derivation of (266)a, where A-not-A emerges as *you-mei-you*:

(266)   a.   Zhangsan you   mei   you   kan zheben shu?
                Zhangsan have SNeg 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.
                Zhangsan SNeg read this   book
                'Zhangsan did not read this book.'

(267) TopicP
```
(267)   TopicP
       /      \
  Zhangsan_k   CP
              /   \
                   C'
                  /   \
          [you mei]_j  NegP
                      /    \
                     Neg'
                    /    \
                  t_j    AspP
                        /    \
                    pro_k    Asp'
                            /    \
                         [you]    VP
                                 /   \
                             t_pro    V'
                                     /   \
                                    V     N
                                   kan   zheben shu
                                   read  this book
```
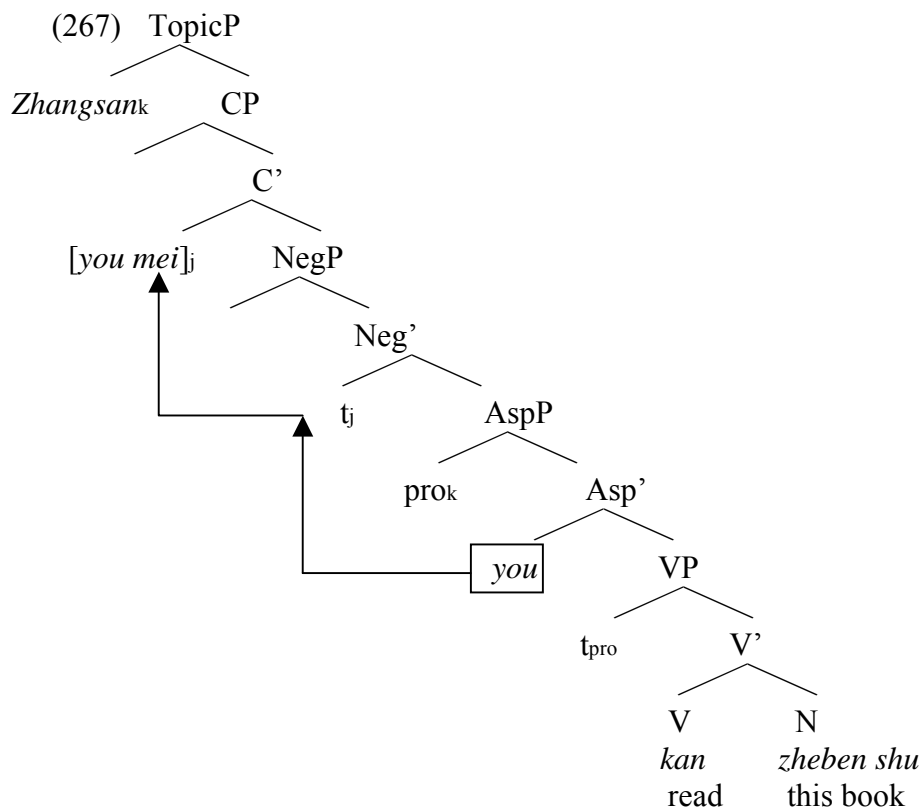
Following what we have been discussing for modals and bare verbs, in (267), *you* is adjoined to Neg° from I°, with *mei* being the head of NegP. We have seen in Chapter 3 that *mei* and *le* are in complementary distribution, *le* therefore cannot surface in (267). The mutual exclusion between *mei* and *le* proves again that the NegP is activated in forming A-not-A questions, providing A with a position to adjoin to form the [A-not] template.

Also, the absence of *le* spares us from distinguishing CRS from Perf projections. I will concentrate only on the post-verbal culminative *le*, assuming that the corresponding A-not-A question for CRS *le* shares the same derivation as the former, with only *you* generated from a higher CrsP position.

4.7.2.2 When A is the Verb

Another way of forming a A-not-A question with perfective aspectual or CRS interpretation is (268), when A is not the aspectual article *you* but the verb *chi* 'to eat', i.e. A-not-A being *chi-mei-chi*.

(268) Zhangsan chi mei   chi fan.
       Zhangsan eat SNeg eat meal
       'Did Zhangsan eat?

Topic
Zhangsan$_k$ CP
                C'
[chi mei]$_j$ NegP
                NegP'
         t$_j$ AspP
              pro$_k$ Asp'
                    chi   VP
                    eat
                         t$_{pro}$ V'
                                   t$_i$ *fan*
                                            meal
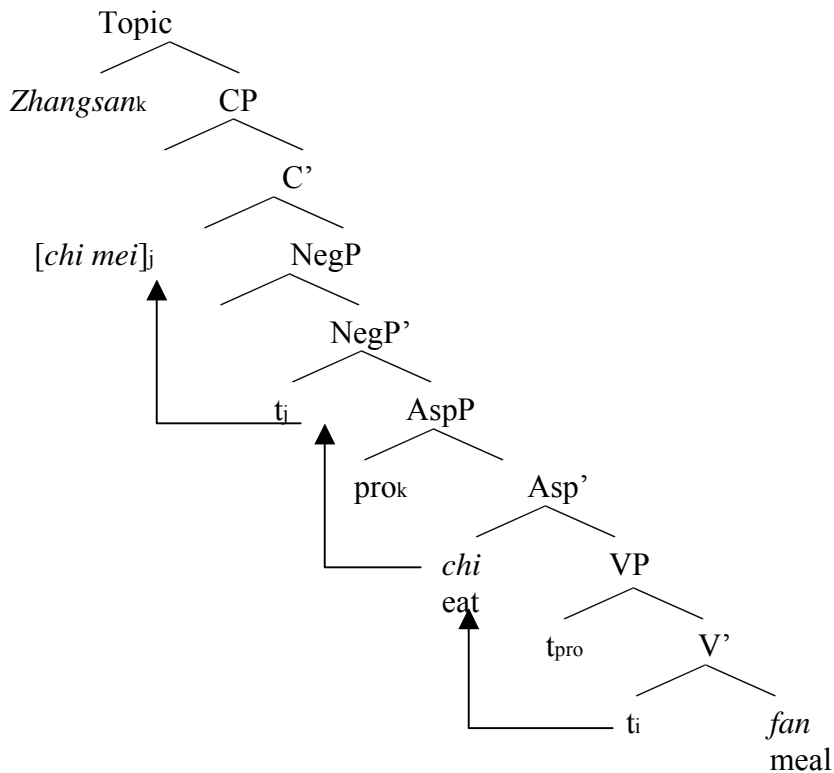
For such a structure, I argue that the lack of aspectual particle *you* in I°, caused by the implementation of a null operator as a result of the use of contracted *mei* as is discussed in Chapter 2, is compensated for by the raising of the verb, i.e. *chi* 'to eat', due to the requirement that INFL must be lexically realized (Koopman, 1984), especially now

104

A-not-A formation needs materials from I°. As a matter of fact, we have seen such zero-marking of culminative negation in (148). 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, (268), similar to the A-not-A formation for bare stative and activity verbs as shown (260), involves verb raising.

Now, the derivation (268) enables us to account for the ungrammaticality of (241), repeated below as (269), 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 (269), 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 attached to:

(269) *Ta chi mei-you   chi fan?
      he eat SNeg-have eat meal
      'Did he eat?'
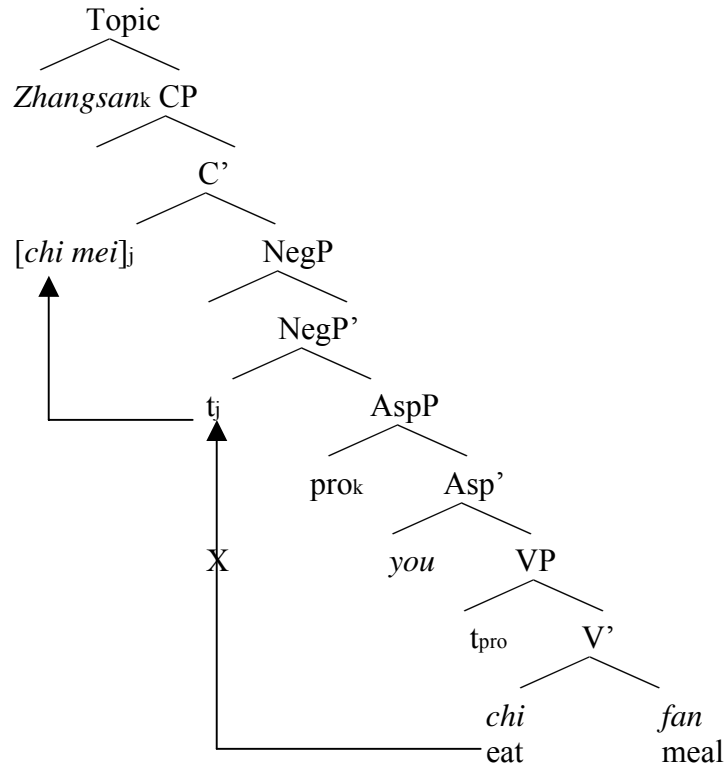
4.7.3   Experiential Aspect *Guo* and Durative Aspect *Zhe*

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

(270) Zhangsan chi(guo)   mei   chi guo   Yuenan fan?
      Zhangsan eat (DurAsp) SNeg 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 (271) and (272):

(271) Topic

*Zhangsan*k   CP

C'

[*chi (guo) mei*]j   NegP

NegP'

tj   AspP

prok   Asp'

chi-guo   VP
eat

tpro   V'

ti   *Yuenan fan*
Vietnamese food

(272)   Topic
       /   \
  *Zhangsan*ₖ CP
            / \
           C'
          /   \
  [*chi mei*]ⱼ   NegP
              /   \
           NegP'
          /   \
        tⱼ   AspP
               /   \
            proₖ   Asp'
                    /   \
              chi guo   VP
                eat   /   \
                       t_pro   V'
                              /   \
                            tᵢ *Yuenan fan*
                              Vietnamese food
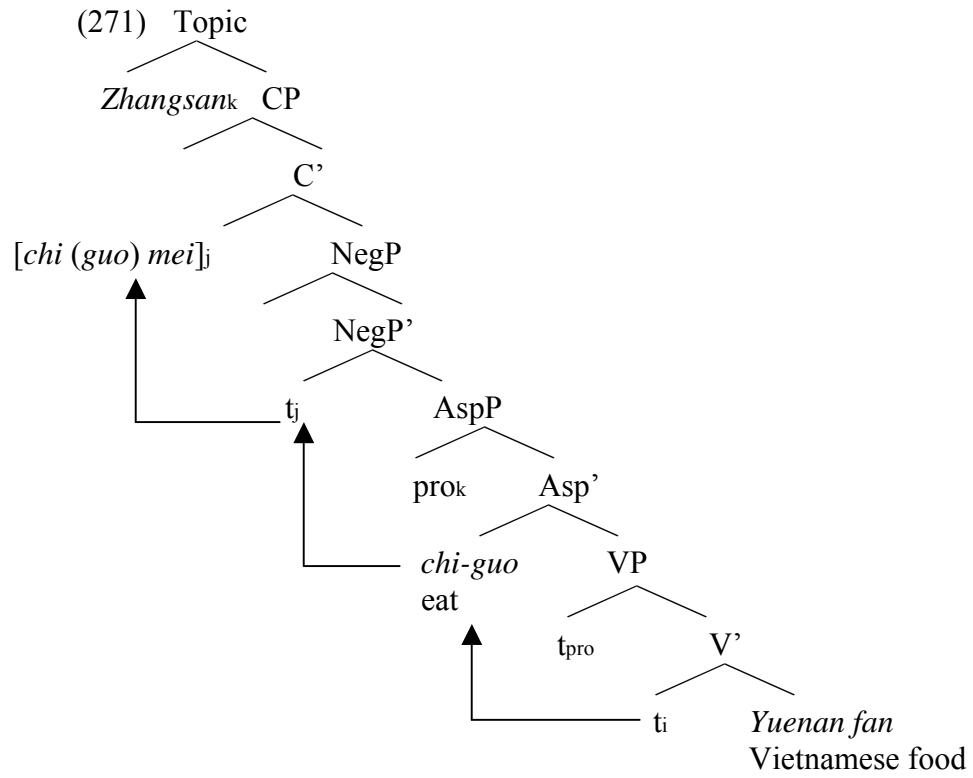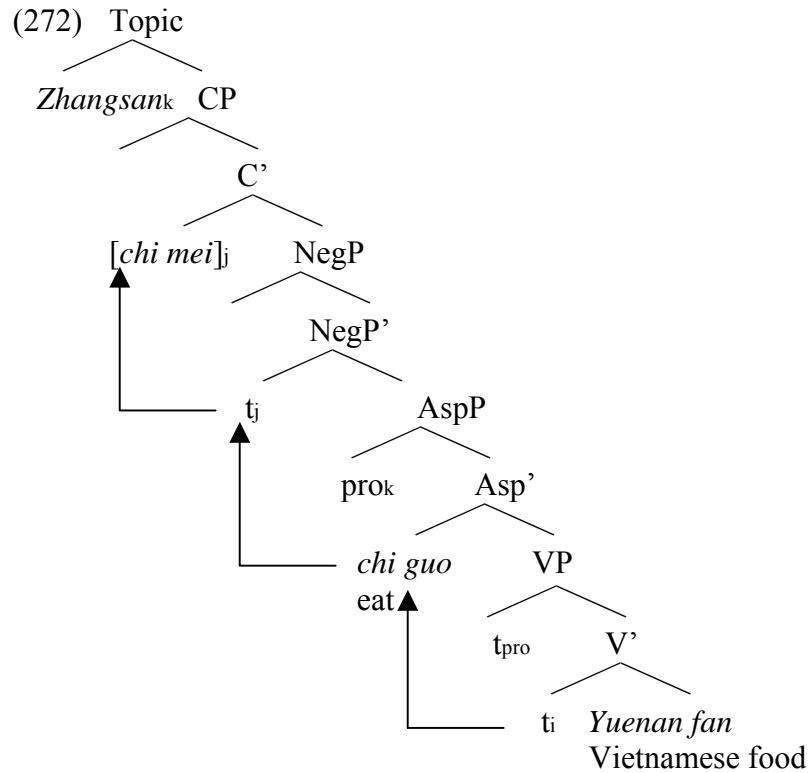
In (271), after the suffixation, the whole Asp°, *chiguo*, is adjoined to Neg° for further derivation; the result is that we have *chiguo* as A. In (272), after the suffixation, only the verb, but not the suffix *guo*, moves to Neg°; again this is due to the fact that I°-to-Neg° movement is not a strict 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.

(273) is an example of an A-not-A question with the durative aspect marker *zhe*. Like the experiential maker *guo*, *zhe* is a suffix, originating in Asp°. A can refer to either the verb *na* 'to hold' or the suffixed verb *na-zhe*; the derivation processes are identical to (271) and (272), i.e. the derivation for the experiential marker *guo*, as shown in (274):

(273) Ta na (zhe)   mei nazhe yiben shu?
 he hold DurAsp SNeg hold   a   book
'Is/was he holding a book?

(274) Topic

```
Topic
 ├── ta_k        CP
 │   he           │
 │                C'
 │         ┌───────┴───────┐
 │      [na mei]_j       NegP
 │                         │
 │                       NegP'
 │                ┌────────┴────────┐
 │               t_j              AspP
 │                         ┌────────┴────────┐
 │                       pro_k             Asp'
 │                                 ┌─────────┴─────────┐
 │                               na zhe              VP
 │                               hold        ┌────────┴────────┐
 │                                          t_pro            V'
 │                                                    ┌───────┴───────┐
 │                                                   t_i          yiben shu
 │                                                                 a book
```
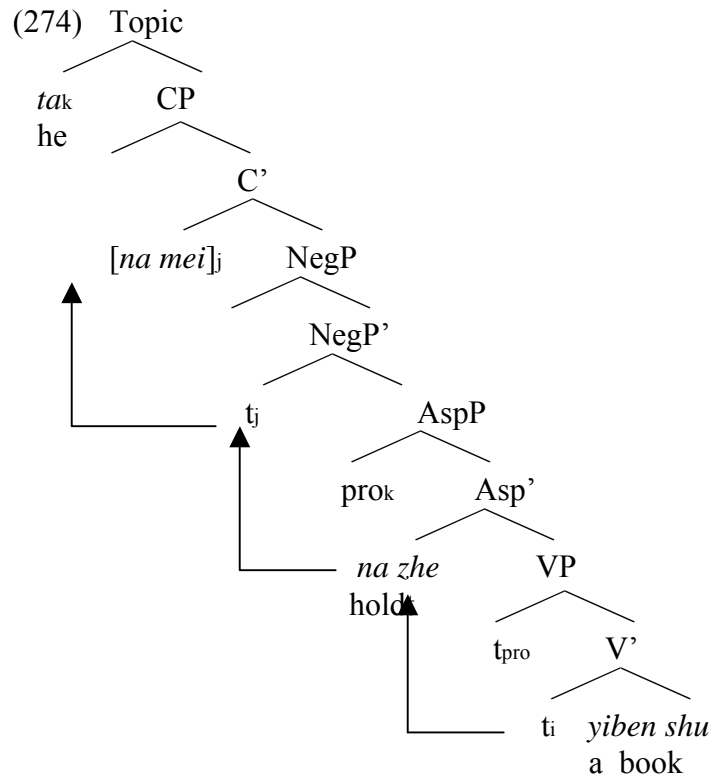
Although in the formation of A-not-A questions of culminative, experiential, and durative aspects, A can refer to either the verb or the verb suffixed with an aspect marker, in A-not-A questions that involve progressive aspect marker *zai*, only *zai-mei-zai* is allowed but not *zai*-V-*mei-zai*-V, as shown in (275) and (276).

(275) Zhangsan zai   mei   zai   xuexi?
      Zhangsan Prog SNeg Prog study
      'Is Zhangsan studying?'

(276) ?*Zhangsan zai xuexi mei   zai   xuexi.
       Zhangsan Prog study SNeg Prog study
       'Is Zhangsan studying?'

Such contrasts once again support the claim that A refers to I. In culminative, experiential, and durative aspect marking, we have argued that the verb needs to merge with the suffixal aspect markers, forming a constituent in I° and then serving as possible A in A-not-A question formation. 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 (276) is ungrammatical.

4.8 Conclusion

In this chapter, 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 of [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 of 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.

Chapter 5   Class I: *Jieguo-Buyu* (Result Complement-Word)

5.1   Introduction

In this chapter, I first introduce the formation of the Class I V-V compounds, a term first used by Li (1991), as well as their accomplishment/achievement Aktionsart and the distinction of resultative and causative structures. For causative structures, I follow Larson's (1988) VP shell analysis to base-generate P1 in Caus(ative)P above VP. VP hosts P2. For resultative structures, a *v*P hosts P1. I suggest that P2 adjoins to P1. This proposal will help explain such facts as scope of negation and the ability of an intransitive verb to license accusative case. I also examine how our previous analysis of the formation of A-not-A questions generates Class I A-not-A questions.

5.2   Formation of Class I

Chao (1968) argues that verbs in Class I are actually verbal compounds, consisting of V1 and V2, my P1 and P2, and that these compounds have very limited productivity in their formation. I will use a hyphen between P1 and P2 in examples with Class I involved.

Class I verbs are formed with P1, usually a transitive verb, followed by intransitive, stative, or unaccusative P2, as shown in (277), (278), (279), and (280). Similar transitivity distribution between P1 and P2 has been reported in Hook and Liang's (2003) Hindi data:

> (277)   Ta xia-ku   le   wode pengyou.
>   he scare-cry Perf my   friend
>   'He scared my friend into tears.'

(278)   Ta chi-bao le.
        he eat-full Perf/CRS.
        'He got full from eating.'

(279)   Wo kan-qingchu zhege zi   le.
        I   look-clear   this   character Perf
        'I saw this character clearly.'

(280)   Diren zha-chen le   zhetiao chuan.
        enemy bomb-sink Perf this   boat
        'The enemy bombed the boat and it sank.'

Although in Class I structures like (277), (279), and (280), P1 and P2 together can take an object, P2 by itself, being usually intransitive, stative, or unaccusative, is not capable of assigning case; for example, the P2 *ku* 'to cry' in (277) is intransitive and cannot take its own object; compare (281) and (282).

(281)   Ta ku le.
        he cry Perf
        'He cried.'

(282)   *Ta ku le   wode pengyou.
         he cry Perf my   friend

In (279), P2 *qingchu* 'clear' is stative, not able to assign case either, as shown by the contrast between (283) and (284):

(283)   *Ta qingchu zhege ren   le.
         he   clear   this person CRS.

(284)   Zhege zi   qingchu le.
        this character clear   CRS.
        'This character has become clear.'

The unaccusative P2 *chen* 'to sink' in (280) also cannot take an object when standing alone; compare (285) and (286):

(285)   Chuan chen le.
          boat   sink Perf
          'The boat sank.'

(286)   *Wo chen chuan le.
            I   sink boat Perf
          'I sank the boat.'

In order to express the idea in (280), one has to resort to the causative *ba*-structure:

(287)   Wo ba chuan chen le.
          I   BA boat   sink Perf
          'I sank the boat.'

The contrasts between (277) and (282), (279) and (283), and (280) and (286) suggest that intransitive P2's are capable of assigning case by being attached to P1.

5.3   The Aktionsart of Class I and Aspect- and Modal- Select

Verbs of Class I must co-occur with perfective aspects, as already shown in (277) and (278), or with modals as shown in (288) and (289).   (290) and (291) are ungrammatical due to the lack of aspect or modal marking.

(288)   Ta neng kan-jian   zhege ren.
          he can   look-perceive this   person
          'He can see this person.'

(289) Ta xiang kan-qingchu zhege ren.
       he want look-clear   this   person
       'He wants to see this person clearly.'

(290) *Ta kan-jian   zhege ren.
        he look-perceive this   person

(291) *Ta kan-qingchu zhege ren.
        he look-clear   this   person

(292) is grammatical, with the help of the habitual aspect marker *changchang*

'often', which I have discussed in Chapter 2:

(292) Wo changchang kan-jian   ta.
       I   often   look-perceive he
       'I often see him.'

Such idiosyncrasy is observed in simplex achievement and accomplishment verbs

as well, as we have seen in (73), (74), and (75), repeated below as (293), (294), and

(295)[9]. These facts suggest that Class I is telic achievement or accomplishment verbs in

terms of Aktionsart type:

(293) *Lisi shuai.
        Lisi fall

(294) Lisi shuai le.
       Lisi fall   Perf
       'Lisi fell.'

---

[9] One thing worth pointing out is that the majority of Mandarin achievement and accomplishment verbs are Class I complex predicates, with P2 indicating the result of P1. The number of simplex achievement and accomplishment verbs is limited (Sun, 1996).

(295)   Lisi yuanyi   shuai.
        Lisi willing.to fall
        'Lisi is willing to fall.'

5.4   Causative and Resultative Class I

I argue that we cannot treat all Class I structures uniformly; instead, they should be divided into two major groups, resultatives and causatives, depending on the finer detail of theta-role assignment and their inner structures.

5.4.1   Causatives

Let us first take a look at causative Class I structures, in which P1 takes the subject of the sentence as its agent. P2 either takes the subject of the sentence as its agent when it is intransitive or takes the object of the sentence as its theme when it is unaccusative.

In (296), for example, P2 is intransitive. The whole sentence can be paraphrased as 'he scared my friend, and, as a result, my friend cried'; i.e. P1 *xia* 'to scare' assigns a agent theta-role to the subject *ta* 'he' and a theme or experiencer theta-role to the object *wode pengyou* 'my friend'; P2 *ku* 'to cry' assigns an agent/experiencer role to *wode pengyou*, altogether three theta-roles are assigned.

(296)   Ta xia-   ku le wode pengyou.
        he scare-cry Perf my   friend
        'He scared my friend into tears.'

115

To explain why in (296), the theta-criterion is not violated, when two arguments, *ta* 'he' and *wode pengyou* 'my friend' receive three theta-roles, Y. Li (1990) proposes a mechanism of 'theta-identification', arguing that in V-V compounds like Class I, a theta-role assigned from one verb can be identified with a theta-role assigned from another verb, and consequently, the one-to-one correspondence between theta-roles and arguments is followed.

In (297), P2 *sui* 'to break' is unaccusative. The whole sentence can be paraphrased as 'he hit my vase and, as a result, my vase broke'; i.e. P1 *da* 'to hit' assigns agent- and theme- roles to the subject and object respectively and P2 *sui* 'to break' assigns a theme role to the object *huaping* 'vase'; thus, altogether, three theta-roles are assigned:

(297)   Ta da-sui   le   wode huaping.
        he hit-break Perf my   vase
        'He broke my vase (by hitting it).'

Also, a causative Class I verb can be transformed into *ba*-structure, the diagnosis for causatives (Chao 1961; Sun 1996; among many others); for example, (296) can be transformed into (298):

(298)   Ta ba   wode pengyou xia-   ku le.
        he BA my   friend   scare- cry Perf
        'He scared my friend into tears.'

Based on such theta-role assignment and the fact that P2 cannot take object unless it is attached to P1, I propose a structure like (299) for causative Class I verb when P2 is intransitive and stative, and (300) when P2 is unaccusative.

In (299), P1 *xia* 'scare' originates in Caus(ative)P° where it attracts P2 so that the latter is able to assign case with P1.

(299) Ta xia-ku   le   wode pengyou.
       he scare-cry Perf my   friend
       'He scared my friend into tears.'
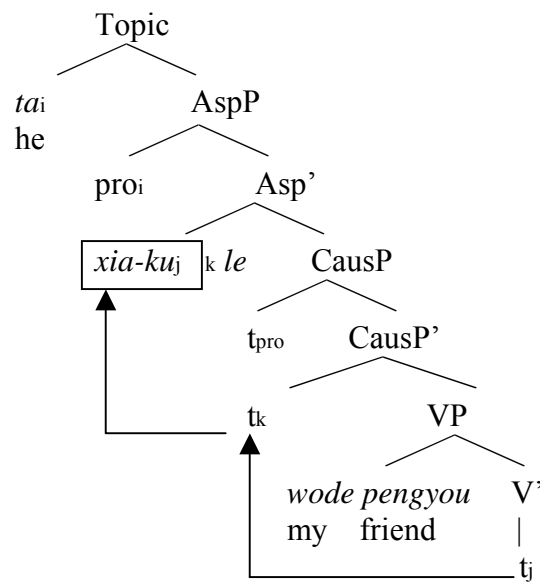
Located in [Spec, CausP] is a covert resumptive pronoun bound by the subject in TopicP, consistent with my analysis throughout this dissertation. P2 *ku* 'to cry' is base-generated in V°, with the object of the sentence in [Spec, VP] as *ku*'s 'to cry' external argument. After P2 *ku* is attached to P1 *xia*, it is able to assign accusative case to *wode pengyou* 'my friend' through the VP boundary; this is similar to the VP shell analysis in

Larson (1988)'s treatment of the double object structure in English. The compound P1-P2, i.e. *xia-ku*, then is raised and attached to *le* for culminative perfective aspect marking[10].

In (300), with unaccusative P2 *sui* 'to break', the internal argument *huaping* 'vase' is base-generated in the complement position of VP (Perlmutter, 1978) and then P2 is attached to P1 and then P1-P2 together is attached to suffixal *le* for perfective aspect marking:

(300) Ta da-sui   le   wode huaping.
      he hit-break Perf my   vase
      'He broke my vase.'

---
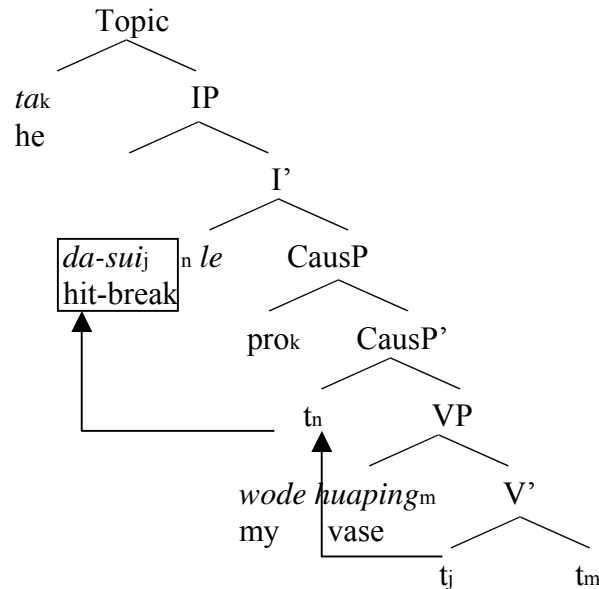
[10] In (299), the first-step P1-P2 adjunction is rightward, while the second-step P1P2-Asp. adjunction is leftward. Attempting to explain the unusual ordering of P1 and P2 in the first step, Zou (1995) argues that the event denoted by P1 implicates the event conveyed by P2; and such implication is canonically structurally realized, cf. Chomsky (1985), Hale and Keyser (1993); and Stewart (1998); i.e. P1 should precede P2. The relation between structural linearity and event linearity, however, can only be a stipulation within my framework. More work will be done to offer a better solution.

The difference between (299) with intransitive P2 and (300) with unaccusative P2 lies in the base position for the object before the incorporation. In (299), it is in [Spec, VP] and in (300), it is in VP complement position. This difference is related to the different theta-role assignments in these two structures. Consequently, now I suggest that the pro for subject *ta* 'he' is base-generated in [Spec, CausP] instead of [Spec, VP], leaving space for the object *wode huaping* 'my vase' to move to [Spec, VP] so that it can be marked with accusative case by the complex predicate *da-sui* 'break'. Thus, an analysis of P1-P2 merging through incorporation solves the puzzle of intransitive or unaccusative P2 being able to assign case[11].

5.4.2   Unifying V-V Compounds Structures

The above-mentioned VP shell analysis for Class I V-V compounds shares the same underlying form with Nishiyama's (1998) treatment of Japanese V-V compounds as in (301).

(301) John-ga   Bill-o   osi-taosi-ta.
       John-Nominative Bill-Accusative push-topple-Past
       'John pushed Bill and Bill fell.'

---

[11] Such obligatory incorporation for case assigning by a compound with an unaccusative P2 may shed light on the contrast between the two following sentences in English. When used alone, the intransitive 'run' cannot assign case, but when it co-occurs with a secondary predicate 'ragged', it can:
    I ran my shoes ragged.
    *I ran my shoes.

(302) is the derivation for (301):

(302) John-ga   Bill-o   osi-taosi-ta.
John-Nominative Bill-Accusative push-topple-Past
'John pushed Bill and Bill fell.'

```
          TrP
         /   \
       NP     Tr'
      John    /  \
           VP1    Tr
          /   \
       Bill    V'
             /   \
          VP2     V
         /   \   topple
     PROi     V    ↑
             push──┘
```
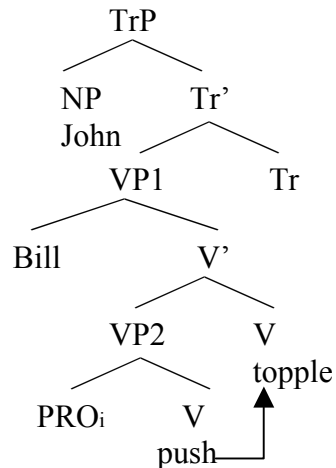
In (302) Tr(ansitivity)P is above VP to provide a position for case assignment for the external argument 'John'. TrP is filled with VP movement. The internal argument 'Bill' is base-generated in [Spec, VP1] controlling a PRO in [Spec, VP2], by means of which object sharing is implemented; and since PRO cannot appear in case position, it is located in [Spec, VP2]. Furthermore, Nishiyama (1998) argues for verb incorporation in the sense of Baker (1988), due to the affixal nature of VP2 for the Japanese data.

Although my analysis on Chinese differs from Nishiyama's on Japanese in the treatment of external subject and the use of control-structure, ours both resort to the underlying VP shell structure and verb incorporation process.

There seems to be two ways to derive V-V compounds: (i) through V-V incorporation to assign accusative case as shown in Chinese and Japanese data, (300) and

(302) respectively; and (ii), alternatively, through projecting a case assigner position above P1 and P2 to attract object as in Chinese *ba* structure discussed in Sybesma (1992), where P1 and P2 are incorporated only for compound formation not for case-assigning, as shown in (303):

(303) Ta ba wode pengyou xia-ku   le.
       he BA my   friend   scare-cry Perf
       'He scared my friend to tears.'

```
              BaP
              /\
             Ba'
            /\
          ba    VP1
               /\
                 VP1'
                /\
          xia-kuᵢ      VP2
          scare-cry   /\
                  ┌──────────┐   VP2'
                  │wode pengyou│   |
                  │my    friend│   tᵢ
                  └──────────┘
```
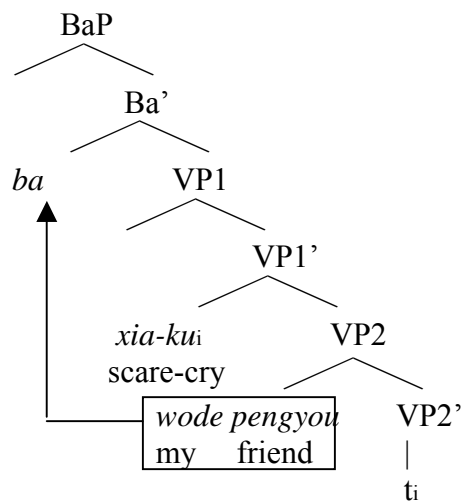
5.4.3   Resultatives

In resultative Class I structures, P1 and P2 share the same agent, i.e. the subject of the sentence.

First, let us take a look at resultative Class I structures that have P2 *jian* 'to perceive' involved, such as *ting-jian* 'listen-perceive, to hear', *kan-jian* 'look-perceive, to see', and *wen-jian* 'smell-perceive, to smell'. These compounds are the only resultative Class I structures that can have an object. In addition to the fact that in these compounds,

P1 and P2 share the same agent, another reason for me to categorize them as resultatives

is because they fail the *ba*-structure test as shown in (304):

(304)   *Wo ba ta ting-jian   le.
        I   BA he listen-perceive CRS
        'I heard him.'

(305), for example, can be paraphrased as 'I looked and saw him', P1 and P2 both

marked with culminative perfective aspect.   And again, P2 *jian* 'to perceive' cannot

surface by itself unless being compounded with P1; compare (305) and (306)[12].

(305)   Wo kan-jian   ta le.
        I   look-perceive he CRS
        'I saw him.'

(306)   *Wo jian   ta le.
        I   perceive he CRS.
        'I saw him.'
But ok, 'I met with him.'

Based on the observation that in (305) and (306), P2 *jian* must be attached to P1

in order to surface, I follow the treatment of P1-P2 incorporation in causative Class I to

demonstrate the derivation of resultative Class I.   Instead of having CausP above VP,

however, I propose for a *v*P for P1 *kan* 'to look'; below *v*P, [Head, VP] is occupied by P2

jian 'to perceive'.   Hsie (2001) makes a similar proposal.   The object *ta* 'him' is

generated as an internal argument of *jian* 'to perceive'.   And then the same process of

amalgamating P2 *jian* to P1 *kan* follows. Also, the object *ta* 'he' is moved to [Spec VP] to be case-marked, similar to what we have seen in (300). *v*P undergoes movement to [Spec, CrsP] to check its CRS feature against *le*.

(307) Wo kan-jian   ta le.
      I   look-perceive he CRS
      'I saw him.'
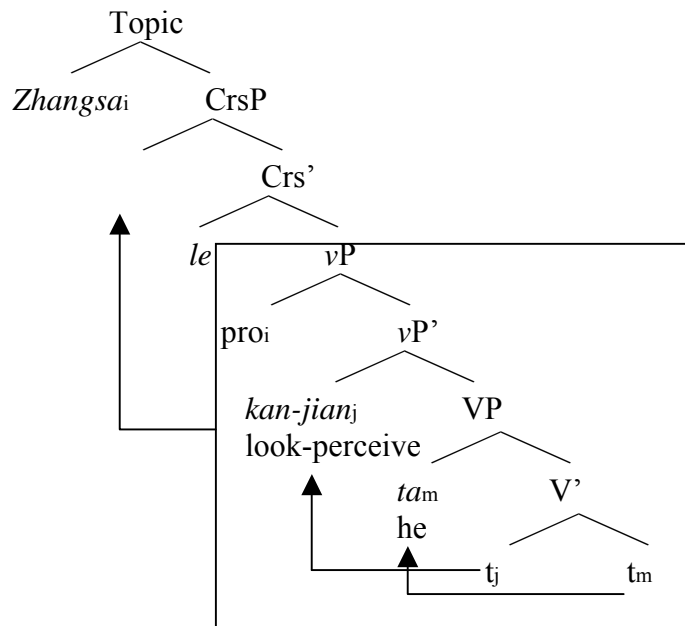
(308) is an example of intransitive Class I. P1 *he* 'to drink' and P2 *zui* 'to get drunk' share the same agent, *Zhangsan*, the subject of the sentence. (309) shows that P1 and P2 head *v*P and VP respectively; both of them can assign a theta-role to *Zhangsan* before Theta Identification unifies these two identical agent roles (Li, 1990, 1998). After P2 is attached to P1, the whole VP is raised to [Spec, CRS].

---

[12] Although *jian* cannot stand alone with the meaning 'to perceive', (306) is grammatical when *jian* means 'to meet with someone', a relic from its transitive use in Early Modern Chinese (Shi, 2002).

(308) Zhangsan he-zui   le.
      Zhangsan drink-drunk Perf
      'Zhangsan got drunk.'

(309) Topic

    *Zhangsa*k   AspP

                Asp'

          le   *v*P

          prok   *v*P'

              he *-zui*i   VP
              drink- drunk |
                           ti
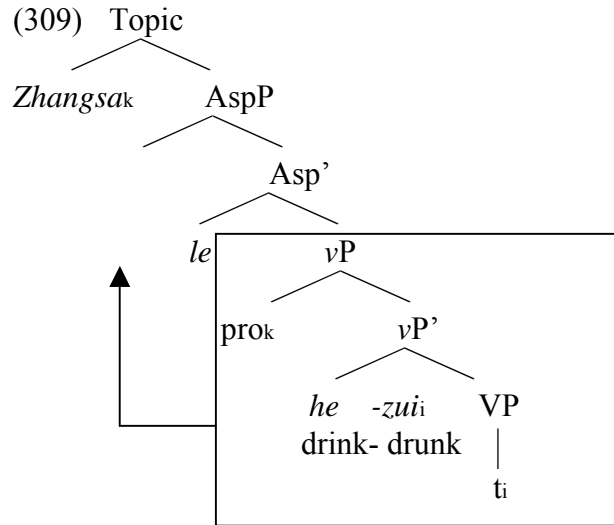
5.5   Negation

5.5.1   Negation of Class I with Aspect/CRS Marking

We have seen in 5.3 that Class I, being accomplishment and achievement predicates in nature, must co-occur with modal verbs or perfective/CRS marking. To negate (310), which has CRS marking, we must use the stage-level negator *mei*(*you*) and then omit clause-final *le*, as in (311). (312) is an example of negating sentences with perfective-*le* marking, identical to CRS-*le* negation in (311). Licensed by *mei, you* occupies Asp°, which prevents the incorporated P1-P2 *da-po* 'hit-break' from raising to Asp° for aspect marking:

(310) Wo kan-jian   zhege ren   le.
      I   look-perceive this   person CRS
      'I saw this person.'

(311) Wo meiyou/mei   kan-jian   zhege ren.
      I   SNeg.have/SNeg look-perceive this   person
      'I did not see this person.'

(312) Wo meiyou/mei   da-po   nide huaping.
      I   SNeg.have/SNeg hit-break your vase
      'I did not break your vase.
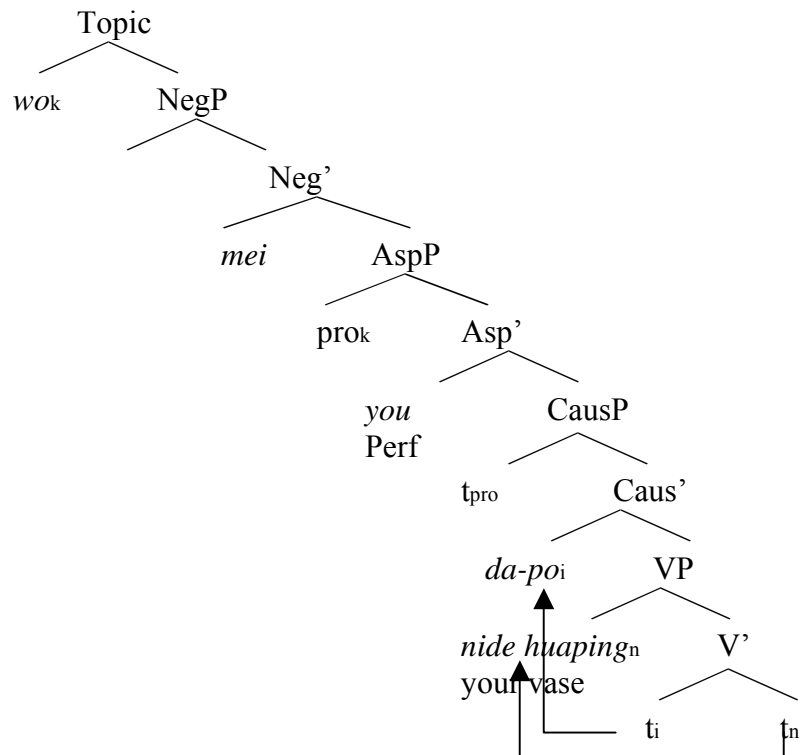
5.5.2 Negation of Class I with Modals

To negate a Class I structure with modal marking (313), the individual-level negator *bu* is used as shown in (314):

(313) Wo yuanyi / xiang kan-jian   zhege ren.
       I   willing / want look-perceive this   person
       'I am willing to / want to see this person.'

(314) Wo bu   yuanyi / xiang kan-jian   zhege ren.
       I   INeg willing / want look perceive this   person
       'I am not willing to / do not want to see this person.'

To negate a Class I structure like (315) that has the modal *neng* 'can', we insert

the individual-level negator *bu* between P1 and P2, as in (316), which actually has the

same form as Class II negation that we will go more deeply into in Chapter 6; such

negation is different from that for other modals; compare (316), (317), and (314):

(315) Wo neng kan-jian   zhege ren.
       I   can look-perceive this   person
       'I can see this person.'

(316) Wo kan bu   jian   zhege ren.
       I   look INeg perceive this person
       'I cannot see this person.'

(317) *Wo bu   neng kan-jian   zhege ren.
        I   INeg can look perceive this   person
        'I cannot see this person.'

5.5.3   Scope in Class I Negation

My analysis of originating P1 and P2 separately in CausP/*v*P and VP before they

form a constituent sheds light onto the puzzle that the default reading of (318) is that it is

P2 *lei* 'tired' that is under the scope of negation but not P1 *pao* 'to run'. If we put stress

on P1 *pao* 'to run', we can get the other somehow forced reading, i.e. Zhangsan did not

126

get tired from running, but maybe, say, from walking or jumping.

(318) Zhangsan mei   pao-lei.
        Zhangsan SNeg run-tired
        'Zhangsan did not get tired from running.'
Or: 'It was by running that Zhangsan got tired.'

```
                    Topic
                  /      \
          Zhangsan_k      NegP
                          /  \
                        Neg'
                       /    \
                    mei      AspP
                            /    \
                         pro_k    Asp'
                                 /    \
              you / null operator      vP
              Perf                    /  \
                                  t_pro   v'
                                         /  \
                                  pao-lei_i   VP
                                  run-tired   |
                                      ▲_____t_i
```
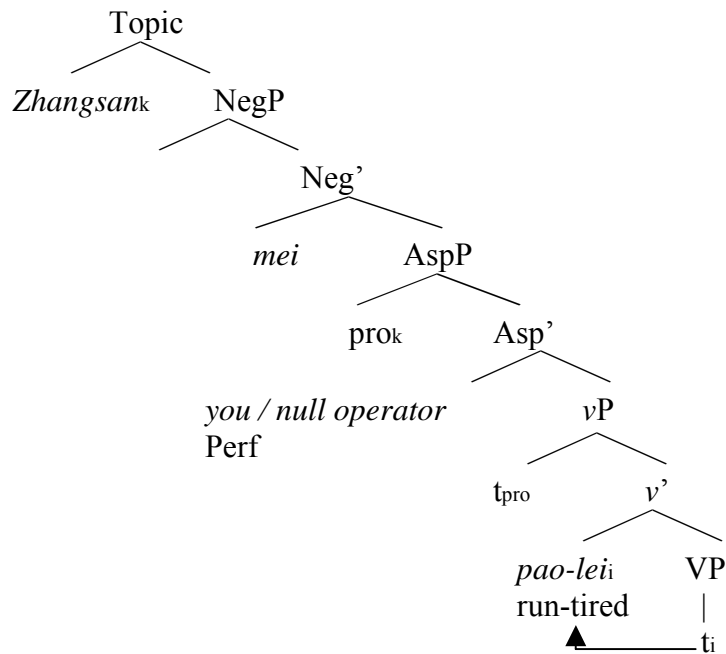
As the English translation suggests, P1 in Class I functions more like manner
adverbial; for example *da-sui* 'hit-break, to break' means 'to break by hitting'; *chi bao*
'eat-full, to get full' means 'to get full from eating'. It has also been reported that very
often in verb compounds or serial verb constructions, the two elements are not of equal
status; one of the them can be a preposition, auxiliary, or a complementizer, cf. Jansen,
Koopman, and Muysken (1978) and Collins (1993). In this sense, the P2 *lei* (318), being
the main predicate, is the default focus of the negator above AspP/CrsP. Thus, although
there is an ambiguity in the interpretation of (318), the unmarked reading is 'I ran but did

not get tired'; and if we resort to the help of stress on P1, we then can have the marked reading 'I got tired but not through running', with P1 negated.

If, on the other hand, P1 and P2 originated, rather than merged, as a constituent, they should be negated by *mei* simultaneously. For example, in conjunctive V-V compounds like *zhe-mo* 'bend-grind, to torture', V1 and V2 originate as an unbreakable compound and therefore there is no ambiguity in their negation. (319), for instance, does not mean 'I bent but did not grind him' or 'I did not bend but grinded him' but rather 'I did not torture him':

(319) Wo mei   zhe-mo   ta.
     I   SNeg bend-grind he
     'I did not torture him', literally 'I did not bend or grind him.'

I relate the ambiguity between adverbial P1 and P2 as found in (318) to that found in English *because*-clause negation, the scopal ambiguity between the matrix verb and adverbial causal clause, cf. Zanuttini (2001). What is under the scope of negation can either be 'go to the party' or 'because my car broke down'.

(320) I didn't go to the party because my car broke down.

We will see in 6.3, however, that the negator *bu* can be found between P1 and P2 in Class III potential structure and it seems that only P2 is under the scope of potentiality marker.

An interesting question to ask is why such scopal ambiguity between *v*P and VP cannot be seen between *v*P/VP and AspP that is also under the scope of NegP. Why cannot (318), for example, with a null-operator in AspP marking culminative perfective, mean 'Zhangsan didn't get tired from running', but 'Zhangsan is getting tired from running' or 'Zhangsan gets tired from running'. In another word, why when both *v*P/VP and AspP are under the scope of negator *mei*, only the former is negated. I relate this to Huang (1988)'s principle on *bu* negation:

The negative morpheme *bu* forms an immediate construction with
the first V° element following it.

I will extend Huang's principle from applying just to *bu* and V° to also applying to *mei* and Asp°, so that it can include *mei* in the negation of stage-level predication. In other words, negators form an immediate construction with Asp°, Modal°, or Crs° in Mandarin. Such a principle also applies to our proposal for null operators in *bu* and *mei* negations. In addition, this explains why aspect and modal markings do not show scopal ambiguity under negation. Ambiguity arises only between *v*P and VP under negation.

So far we have seen from several cases that what is postulated as V° in the literature is actually AspP° in Mandarin. These cases include the location of the existential perfective in 2.2.2.2.4.1, the scope problem in Class I negation in 5.5.3, and the identity of A in A-not-A formation in 4.4. This might suggest that Mandarin aspects have very strong verbal features, following from the fact that, as we have seen, many aspectual markers are actually grammaticalized verbs.

5.6 A-not-A Formation

(321), (323), and (324) are examples of how Class I verbs form A-not-A questions. (321) has a potential interpretation, (323) a modal marking, and (324) and (325) aspectual/CRS marking.

(321) Ni kan de   jian   kan bu   jian   zhege ren?
      you look Potential.Marker perceive look INeg perceive this   person
      'Can you or can you not see this person?'

(322) ?*Ni neng bu   neng kan-jian   zhege ren?
      you can INeg can   look-perceive this   person
      'Can you see this person?'

(323) Ni yuanyi bu   yuanyi kan-jian   zhege ren?
      you willing INeg willing look-perceive this   person
      'Are you willing to see this person or not?'

(324) Ni kan mei   kan-jian   zhege ren?
      you look SNeg look-perceive this   person
      'Did you see this person or not?

(325) Ni kan-jian   mei   kan-jian   zhege ren?
      you look-perceive SNeg look-perceive this   person
      'Did you see this person or not?

(321), an example with potential interpretation, a question corresponding to (315) and (316), shares the same form as Class II A-not-A questions that we will go more deeply into in Chapter 6. (322) is ungrammatical, because of taking the modal *neng* 'can' as A, reminiscent of the incompatibility between *neng* and *bu* in Class I negation that we saw in (317).

Nevertheless, using the modal *yuanyi* 'willing to' as well as all other modals as A is grammatical, as shown in (323).

5.7   A-not-A for Class I

I will take advantage of the previous analysis on the existence of CausP/*v*P that hosts P1 to account for the formation of resultative and causative Class I A-not-A questions.

5.7.1   Resultative Class I

(326) is an example for the derivation of the A-not-A question of a resultative Class I verb.

(326)   Zhangsan pao-(lei)   mei   pao-lei?
           Zhangsan run (-tired) SNeg run-tired
           'Did Zhangsan get tired from running?'

Following what we have argued in 5.4, P2 is first attached to P1 and then P1-P2 together is raised to Asp°, due to the lack of the overt marker *le* in AspP, which we have discussed in 4.7.2.2.   Because, as we have noted, Class I constructions are all achievement/accomplishment verbs and therefore are more compatible with perfective aspect (Li, 1990), Neg° is occupied by *mei*, the stage-level negator.   The [A-*mei*] template then attracts elements from AspP to realize the +Q particle, which can be either P1 *pao* as shown in (327) or P1-P2 *pao-lei* as shown in (328).   As we have seen in 4.5, the trace of *pao* 'to run' is not deleted as part of the realization of +Q.

(327) Zhangsan pao mei   pao-lei?
      Zhangsan run SNeg run-tired
      'Did Zhangsan get tired from running?'
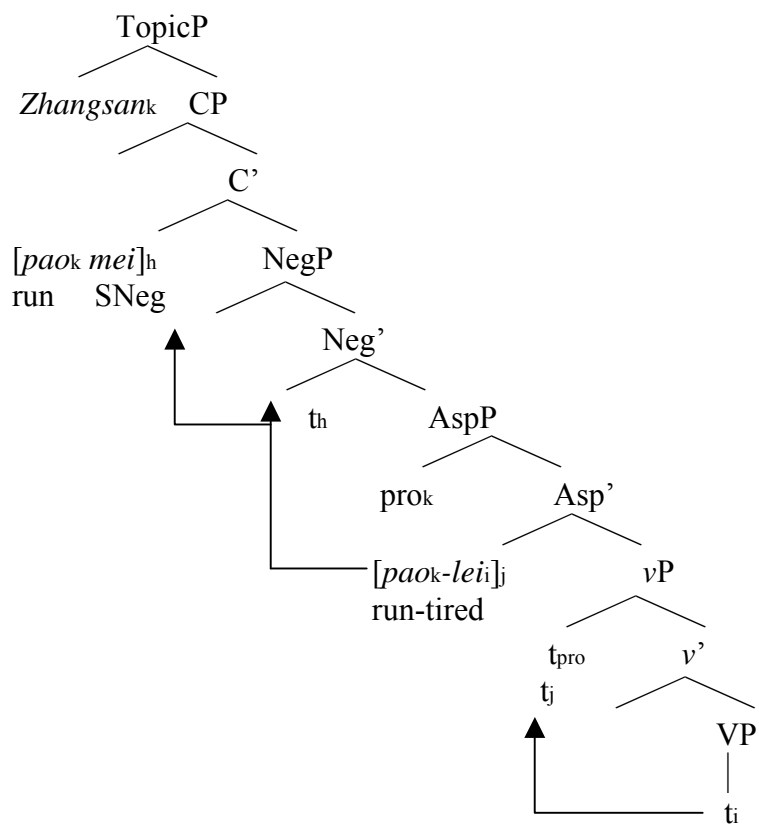
TopicP
- *Zhangsan*k CP
  - C'
    - [*pao*k *mei*]h / run SNeg
    - NegP
      - Neg'
        - th
        - AspP
          - prok
          - Asp'
            - [*pao*k-*lei*i]j / run-tired
            - *v*P
              - tpro / tj
              - *v*'
                - VP
                  - ti

(328) Zhangsan pao-lei   mei   pao-lei?
       Zhangsan run-tired SNeg run-tired
       'Did Zhangsan get tired from running?'

```
                    TopicP
                   /      \
            Zhangsan_k    CP
                         /  \
                        C'
                       /  \
        [pao-lei_i mei]_h   NegP
        run-tired SNeg      /  \
                          Neg'
                         /    \
                       t_h    AspP
                             /    \
                          pro_k    Asp'
                                  /    \
                       [pao-lei_i]_j    vP
                       run-tired       /  \
                                   t_pro   v'
                                    t_j   /  \
                                         VP
                                         |
                                         t_i
```
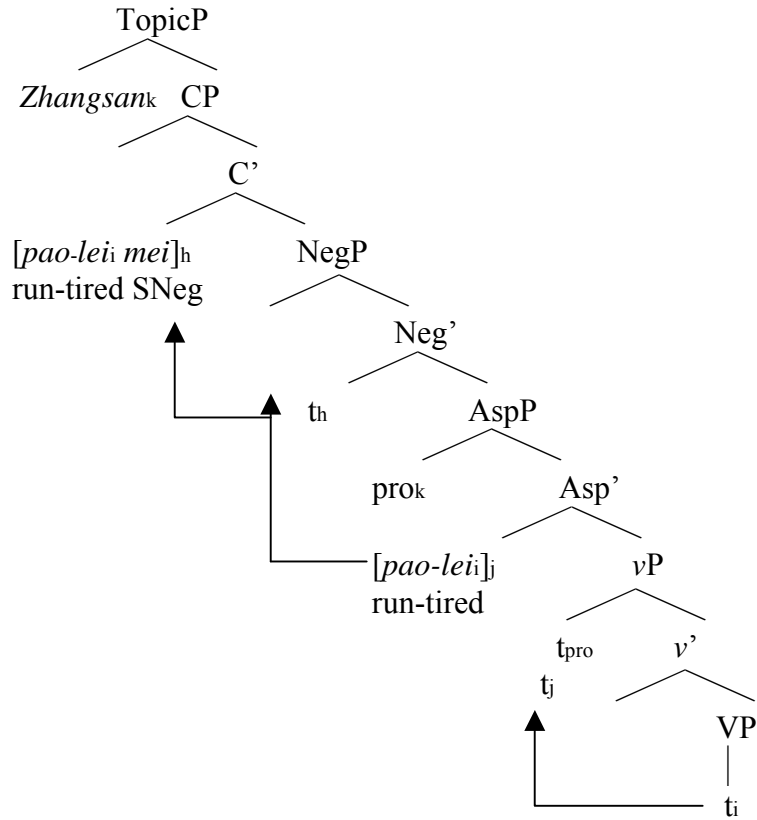
5.7.2   Causative Class I

(329) is an example of causative Class I forming A-not-A question. Again, A can either be P1 or P1-P2, as we have seen in the *xi-huan* 'like' example in (184)[13]. (331) illustrates how the A-not-A question is derived when we have P1 as A; i.e. what moves from Asp° to NegP is only P1 *qi* 'to ride', after P1-P2 merging in CausP. (331) shows

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[13] At the same time of relating the possible separation of Class I P1-P2 compounds to that of syllabic separation of a single verb in A-not-A formation, I leave space for the possibility for an excorporation analysis, where a moved item is allegedly moving further from the adjunction site.

133

the structure of A-not-A questions with P1-P2 as A; now what moves from Asp° to NegP

is the whole V-V compound:

(329) Zhangsan qi- (huai) mei qi- huai zixingche?
 Zhangsan ride break SNeg ride-break bike
 'Did Zhangsan break the bike while riding it?'

(330) TopicP

```
                    TopicP
                   /      \
            Zhangsanₖ      CP
                          /  \
                             C'
                            /  \
                  [qiⱼ mei]ₕ    NegP
                  ride-SNeg     /  \
                             Neg'
                            /    \
                          tₕ      AspP
                                 /    \
                             proₖ      Asp'
                                      /    \
                            tⱼ-huaiᵢ        CausP
                            ride-break      /    \
                                        t_pro      CausP
                                                  /    \
                                               tⱼ       VP
                                                       /   \
                                              zixingcheₙ    V'
                                              bike         /  \
                                                         tᵢ    tₙ
```

134

(331) TopicP

Zhangsan$_k$ CP

C'

[qi-huai$_i$ mei]$_h$ NegP
ride-break

Neg'

t$_h$ AspP

pro$_k$ Asp'

[qi-huai$_i$]$_j$ CausP
ride-break

t$_{pro}$ CausP

t$_j$ VP

zixingche$_n$ V'
bike

t$_i$ t$_n$
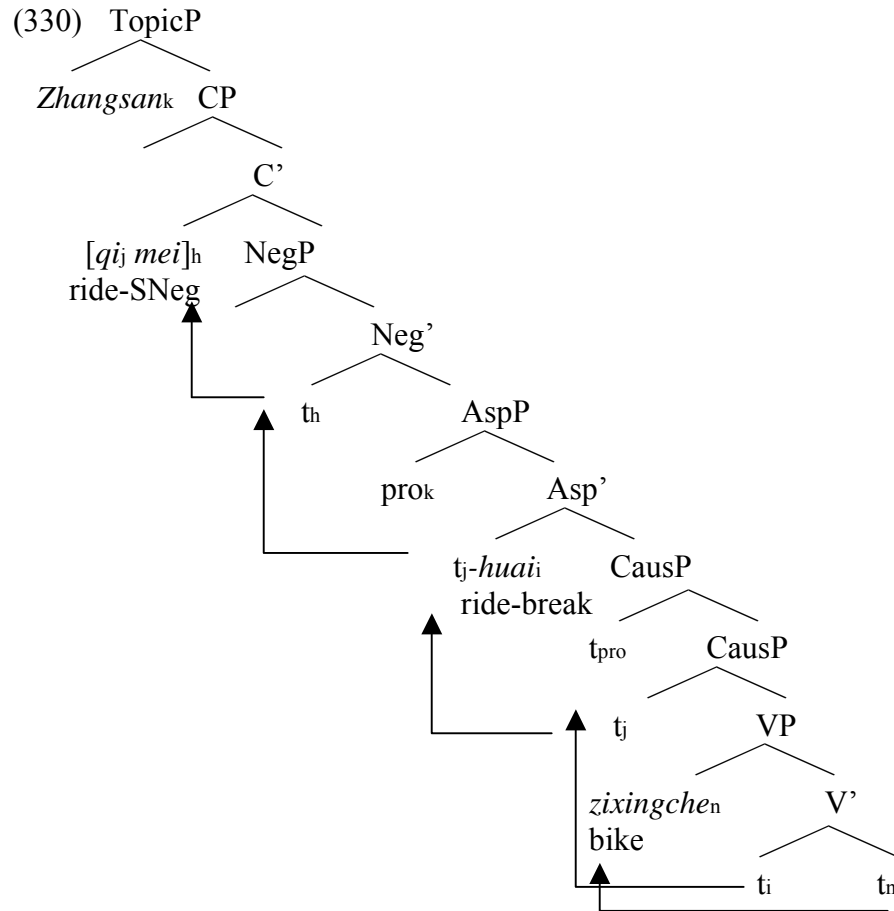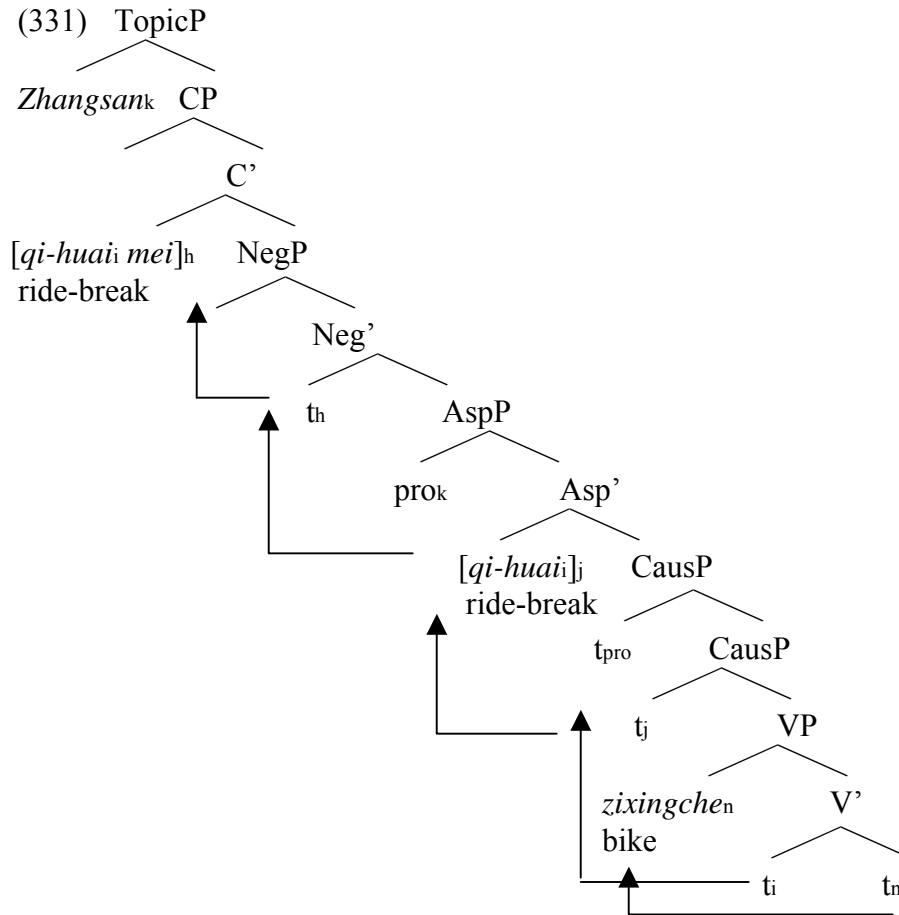
5.8 Conclusion

In this chapter, I have studied the formations of resultative and causative Class I V-V compounds. In causative structures, the CausP that hosts P1 attracts P2 to form compound and to give the latter transitivity. In resultative structures, the CausP is replaced with *v*P. The accomplishment Aktionsart of Class I structures determines that they can only be negated with *mei*, the stage-level predicate negator. The scope ambiguity in Class I negation is due to focus caused by the unequal status of P1 and P2.

My Neg-to-I and I-to-C analysis of A-not-A questions fares well in the formation Class I

A-not-A questions.

Chapter 6   Class II: *Keneng-Buyu* **(Potential Degree Complement-Word)**

6.1   Introduction

In this chapter, I first argue that Class II potential structures are derived from Class I V-V compounds. Consequently, I divide Class II also into resultatives and causatives. I suggest that Class II is serial-verb-constructions (SVC), *de* being derived from a full verb *dao* 'to reach', connecting P1 and P2. *De* is argued to head PotentialP, a lower modal projection. *De* and its negative counterpart *bu* are both responsible for the causative projection. I then offer a two-track account for Class II A-not-A questions.

6.2   Formation

6.2.1   Class II Derived from Class I

Class II is formed with P1 being a verb and P2 being an intransitive verb; P1 and P2 are separated by the particle *DE*; the reason why I write it as *DE* is to distinguish it from the *de* that we will see in Class III. (332) and (333) are examples of Class II, the former with resultative interpretation and the latter with causative interpretation.

(332)   Wo chi-de-bao.
          I   eat-DE-full
          'I can get full (by eating).'

(333)   Wo da-de-sui   zhege huaping.
          I   hit-DE-break this   vase
          'I can break this vase (by hitting it).'

All Class II potential structures have their Class I correspondences; for example, (334) for (332) and (335) for (333) respectively:

(334) Wo neng chi-bao.
      I   can   eat-full
      'I can get full.'

(335) Wo neng da-sui   zhege huaping.
      I   can hit-break this   vase
      'I can break this vase.'

In these Class I correspondences, instead of the particle *DE* between P1 and P2, we have the potential modal *neng* 'can' before the V-V compound. Also note that Class I (334) and (335) are ambiguous between permission and potential readings; whereas Class II (332) and (333) have only the potential reading.

Class II structures are negated by replacing *DE* with the individual-level predicate negator *bu*; Class II cannot be negated with stage-level predicate negator *mei* at all; compare (336), (337), and (338). Such contracts suggest that a modal projection rather than an aspectual projection is at play in Class II formation:

(336) Wo chi-bu-   bao.
      I   eat-INeg- full
      'I cannot get full.'

(337) Wo da-bu-   sui   zhege huaping.
      I   hit-INeg-break this   vase
      'I cannot break this vase.'

(338) *Wo da mei   sui   zhege huaping.
       I   hit SNeg break this   vase

In 5.5.2, we have also seen that, Class I with potential-modal *neng* 'can'-marking like (339), can only be negated as a Class II structure like (340), but not (341) unless a permission reading is intended.

    (339) Ni neng kan-jian   zhege ren.
             you can look-perceive this   person
             'You can see this person.'

    (340) Ni kan bu   jian   zhege ren.
             you look INeg perceive this person
             'You cannot see this person.'

    (341) *Ni bu   neng kan-jian   zhege ren.
              you INeg can look perceive this   person
             'You cannot see this person.'
OK if means   'You are not allowed to see this person.'

The two possible positions for the negator *bu*, above P1 and between P1-P2, suggest that Chinese has two separate projections for permission and ability/potentiality modals. I argue that *neng* 'can or be able to', the modal indicating both permission and ability', is above VP as shown in (339); on the other hand, the pure ability/potential modal *DE* is lower, very likely embedded between P1 and P2, as shown in (340). This is indeed consistent with Cinque's (1999) observation that the evidence of ordering permission and ability is very slim.

6.2.2   No Aspect or Non-potential Modal Marking

Furthermore, the ungrammaticality of (342) and (343) further indicates that potential *DE* is incompatible with other modals. Semantically, it is odd to express potentiality combined with other modality.

(342) ?*Wo neng chi- de- bao.
     I   can   eat- DE-full
    'I am allowed to be able to get full from eating.'

(343) *Wo yuanyi chi-de-bao.
     I   willing eat-DE-full
    'I am willing to be able to get full from eating.'

(344) *Wo bixu chi-de-bao.
     I   must eat-DE-full
    'I must be able to get full from eating.'

Furthermore, as shown by (345), (346), (347), and (348), Class II cannot be marked with any aspect, which I assume is also due to the semantic anomaly of indicating potential with temporal reference[14]:

(345) ?*Wo chi-de-bao le.
     I   eat-DE-full CRS
    'I have been able to get full from eating.'

(346) *Wo zai chi-de-bao.
     I Perf eat-DE-full
    'I am being able to get full from eating.'

(347) *Wo chi-de-bao guo
     I   eat-DE-bull ExpAsp
    'I was once able to get full from eating.'

---

[14] In order to indicate 'now I am able to get full from eating', i.e. an inchoative expression, the modal verb *neng* 'can' followed by Class I V-V compound is preferably used with CRS *le*:
    Wo neng chi-bao le.
    I   can eat-full CRS
    'I am able to get full from eating, now.'

(348) *Wo chi-de-bao zhe.
     I   eat-DE-full DurAsp
     'I am able to get full from eating.'

6.2.3 Potential *De*

Unlike the modal verb *neng* 'can', *DE*, however, is not an independent modal verb but a verbal clitic. *DE* can only be found between P1 and P2 in Class II. Single verbs cannot be attached to *DE* for potential reading, but have to resort to the modal verb *neng* 'can'; compare (349) and (350):

(349) *Wo chang de.
     I   sing   DE
     'I can sing.'

(350) Wo neng chang.
     I   can   sing
     'I can sing.'

Furthermore, compare the questions and answers in (351) that involves a Class II structure and in (352) that involves a modal verb; a modal verb allows ellipsis but *DE* does not; *DE* must be attached to both P1 and P2:

(351) Ni xie de wan ma?
     you write DE finish Y/N
     'Can you finish writing (it)?'

Answer:
     *De.
     'Yes, I can.'

But: Xie de wan.
     write DE finish
     'Yes, I can.'

(352) Ni neng xie   wan ma?
        you can write finish Y/N
        'Can you finish writing (it)?'

Answer:

        Neng.
        'Yes, I can.'

6.2.4 Causative and Resultative Class II

6.2.4.1 Causative Class II

We have seen in 5.2 that in perfective aspect marking of Class I V-V compounds,

both P1 and P2 fall under the scope of perfective *le*; for example in (353), *chi-bao le* 'eat-

full Perf' means 'ate and got full'. The head movement of incorporated P1 and P2 to

Asp° is able to make both of them marked with perfective aspect.

(353) Zhangsan chi-bao le.
        Zhangsan eat-full Perf
        'Zhangsan got full.'
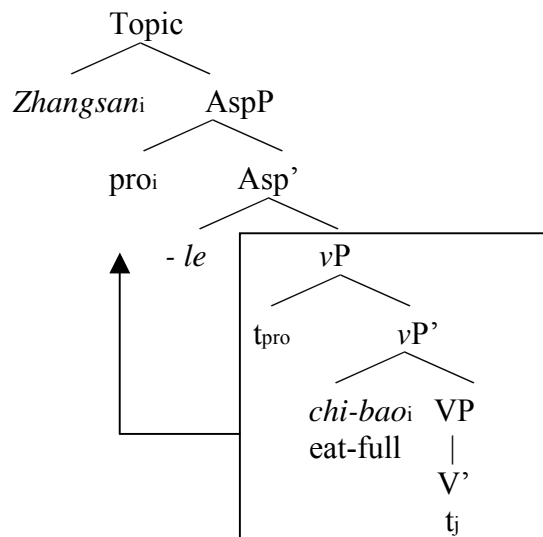
In Class II, however, only P2 lies under the scope of potentiality; for example, *chi-de-bao* 'eat-DE-full' can be interpreted as 'eat and able to get full' but not 'be able to eat and be able to get full'.

Considering the modal interpretation of Class II structures and the fact that only P2 is in the scope of potentiality caused by *DE*, I argue that Class II has a serial verb construction formed with P1, DE, and P2 in turn. Such analysis is consistent with our argument that Class II is derived from Class I V-V compound. Nishiyama (1997) also discusses the similarity between V-V compounds and SVC's. We will see in Chapter 7 that Class I and Class II are both monoclausal, while Class III is biclausal.

Chao (1961) has argued that *DE* is synchronically derived from a full verb *dao* 'to arrive, to reach' and therefore *chi-de-bao* 'eat-*DE*-full' literally means 'eat and reach fullness', which further proves that Class II is more like a serial verb construction. The serial verb construction analysis can also explain why (349) is ungrammatical and why (351) requires a P1-DE-P2 answer rather than an answer with only *DE*, since P1, *DE*, and P2 form an indispensable serial verb construction.

Besides potentiality, *DE* can also provide the otherwise intransitive P2 with transitivity, as seen from the contrast between (354) and (355) and (356). I take (356) as the deep structure for the causative use of *qingchu* 'clear'; as shown in (357), the agent *zhege zi* 'this character' is base-generated in [Spec VP] as an external subject; intransitive verbs like *qingchu* 'clear' can be incorporated with a higher CausP° to be able to assign case. Such analysis resembles that of English causative particle *en-*, as in *enable*, *ensure*,

and *endanger*; *en-* heads a CausP higher than VP and attracts the latter to raise for transitivity:

(354) Wo kan de qingchu zhege zi.
      I look DE clear this character
      'I can see clearly this character.'

(355) *Wo qingchu zhege zi.
       I clear this character
      'I clear this character.'

(356) Zhege zi   hen qingchu.
      this character very clear
      'This character is clear.'

(357) CausP
```
         CausP
         /  \
             VP
            /  \
      zhege zi    V'
    this character  |
                  qingchu
                   clear
```
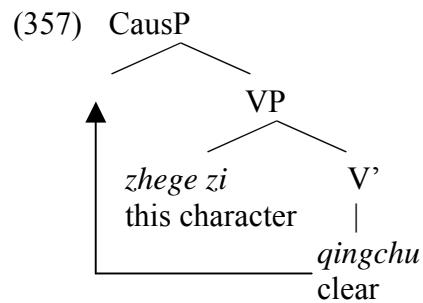
In this sense, *DE* is analytical, responsible for both the potentiality and transitivity of P2. I argue that *DE* is generated in PotentialP, the lower ModalP between P1 and P2 with the higher ModalP reserved for other independent modals like permission *neng* 'can', desirative *xiang* 'want', and obligatory *yinggai* 'should' etc. Tsai (2001) relates the potential reading of Class II to a modal projection as well, but does not single out the unique potential *DE* from other modals. I further argue that *DE* triggers a CausP beneath it with a null head; such a covert causative operator then attracts unaccusative P2 for case assigning. We have seen a similar analysis in 5.4.1, in which P1 in Class I occupies

144

CausP° and attracts P2 for transitivity. The difference between Class I and Class II lies in the fact that the former is a verb compound through incorporation, while the latter a serial verb construction.

(358) is the derivation of causative Class II. P1 is beneath ModalP and takes PotentialP as its immediate complement. PotentialP is headed by the analytical *DE* that selects the CausP with a null Caus head. P2 is then incorporated with null Caus head for case-assigning:

(358)   Wo kan-de- qingchu zhege zi.
         I   look-DE-clear   this   character
         'I am able to see this character clearly.'

TopicP
├─ *wo*k
└─ ModalP
   ├─ pro k
   └─ P1
      ├─ t pro
      └─ P1'
         ├─ *kan*
         │   look
         └─ PotentialP'
            ├─ *DE*
            └─ CausP
               ├─ Caus°
               │   Ø
               │   *zhege zi*
               │   this character
               └─ P2
                  └─ P2'
                     │
                     qingchu
                     clear

145
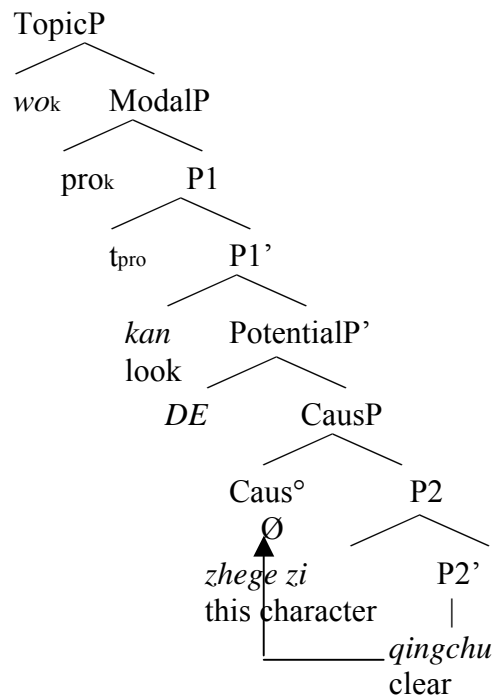
6.2.4.2 Resultative Class II

(359) is an example showing the derivation of resultative Class II. P1 *chi* 'to eat', *DE*, and P2 *bao* 'full' are base-generated as a serial verb construction, as we have seen for causative structure in 6.2.4.1. There is no CausP triggered by *DE*, and P2 stays in its base position, because of the lack of motivation for causativity.

(359)　Wo chi de bao.
　　　　I　eat DE full
　　　　'I am able to get full from eating.'

TopicP
├── *wo*k
└── ModalP
　　　└── P1
　　　　　├── prok
　　　　　└── P1'
　　　　　　　├── *chi*
　　　　　　　│　　eat
　　　　　　　└── PotentialP'
　　　　　　　　　├── *DE*
　　　　　　　　　└── P2
　　　　　　　　　　　├── tpro
　　　　　　　　　　　└── *bao*
　　　　　　　　　　　　　full
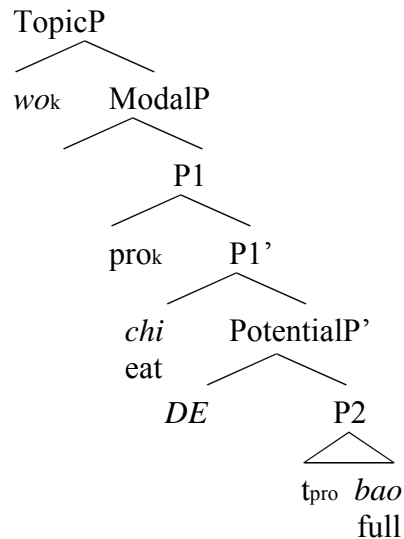
6.3　Negation of Class II

We have seen in 6.2.1 that in Class II negation, *bu* takes the place of *DE* as shown again in (360). Also, even though the potential head *DE* is absent in (360), the potential reading suggests that the potentiality negator *bu* is analytical too, responsible for both negation and potentiality. We have seen in (340) and (341) that Chinese permission modal is higher than the potential modal, and consequently there are two distinctive

negation projections as well. We have seen two NegP projections for CRS *le* and perfective *le* in 3.2.1:

(360)   Zhangsan chi bu   bao.
        Zhangsan eat INeg full
        'Zhangsan cannot get full from eating.'

(361) and (362) show that in negation, the modal verb *neng* 'can' cannot co-occur with *bu*, due to the semantic anomaly of the combination of permission and ability as we have seen in last section.

(361)   *Lisi bu   neng chi de bao.
         Lisi INeg can   eat DE full
        'Lisi cannot get full from eating.'

(362)   *Lisi neng chi bu bao.
         Lisi can   eat INeg
        'Lisi cannot get full from eating.'

In affirmative sentences, *neng* is ambiguous between a potential reading and a permission reading. Nevertheless, *bu neng*, a ModalP negation, can only be used to negate permission. *Neng* 'can', in terms of marking potential, is a positive polarity item, not capable of appearing with negation. As a result, potential Class I V-V compounds have to resort to Class II P1-*bu*-P2 pattern for negation, a process of lower PotentialP negation. This is why we see that potential Class II negation and Class I negation involving potential modal *neng* 'can' share the same form. To negate *neng* followed by a

simple potential-indicating activity verb, we use *bu hui* 'not know how to', as shown in

(363):

     (363)   Zhangsan neng/hui   zhegentou.
            Zhangsan can /know.how.to somersault
            'Zhangsan knows how to somersault.'

negation:
            *Zhangsan bu   neng zhegentou.
             Zhangsan INeg can somersault

     but:
            Zhangsan bu   hui   zhegentou.
            Zhangsan INeg know.how.to somersault
            'Zhangsan does not know how to somersault.'

The possible answers to the question in (364) again show that *bu* is part of a serial

verb construction, like its affirmative counterpart *DE*. (365) indicates that in single verb

negation, *bu* needs to be attached to verb following it.

     (364)   Ni la-   de-   dong yiliang che ma?
           you pull DE move a   car Y/N
           'Can you move a car?'

     To answer:
            'La- bu-   dong.'
             pull INeg move
            '(I) cannot move (it).'

     But not:
            *Bu   dong.
             INeg move
            '(I) cannot move (it).'

(365) Zheliang che dong ma?
       this   car move Y/N
       'Does this car move?'
To answer:
       'Bu dong.'
        not move
       '(It) does not move.'

The difference between negative Class II and its affirmative counterpart is that the former has Potential° switched from *DE* to *bu*. As shown in (366), *bu* and *DE* cannot coexist:

(366) *Ni la de bu   dong zheliang che.
        you pull DE INeg move   this   car
        'You cannot move this car.'

We can conclude that *bu* is analytical, contributing both to negation and potentiality marking. Such use of potential negator *bu* resembles that of *mei*, the reduced form of *meiyou* in perfective aspect negation and the desirative *bu* before activity verb, which marks both negation and desirative. (367) shows how negation of causative Class II is formed, in which the PotentialP is headed by *bu*, instead of *DE*:

(367) Wo kan- bu- qingchu zhege zi.
       I   look-INeg- clear   this   character
       'I am not able to see this character clearly.'

TopicP
*wo*k   ModalP

…   P1

         pro k   P1'

         kan   PotentialP'
         look

              bu   CausP

                        P2

         zhege zi   P2'
         this character |
                          qingchu
                          clear
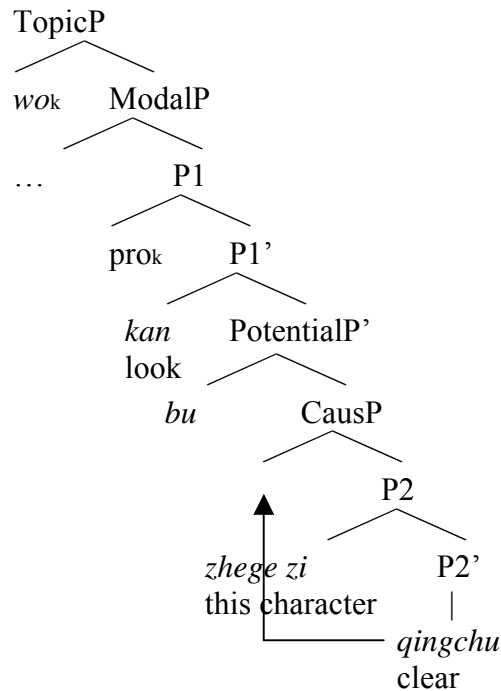
6.4 A-not-A for Class II

(368) and (369) are Class II A-not-A questions: (368) with object in situ and (369)
with object topicalization. The rule for A-not-A formation for Class II is different from
that of Class I and descriptive Class III that we will see in Chapter 7; what we really have
is P1-*DE*-P2 P1-*bu*-P2.

(368) Ni   kan de qingchu kan bu   qingchu zhege zi?
       you look DE clear   look INeg clear   this   character
       'Can you see this character clearly?'

(369) Zhege zi   ni   kan de qingchu kan bu   qingchu?
       this   character you look DE clear   look INeg clear
       'This character, can you see it clearly?

Furthermore, (368) and (369) do not allow lexical disintegrity of any sort, while other A-not-A questions do; see (370) and (371):

(370) *Ni kan de kan bu   qingchu zhege zi?
       you look DE look INeg clear   this   character
       'Can you see this character clearly?'

(371) *Zhege zi   ni kan de kan bu   qingchu.'
       this   character you look DE look INeg clear
       'Can you see this character clearly?'

At face value, (368) and (369) are not quite like A-not-A questions, but more like disjunctive questions, with the affirmative and negation forms juxtaposed; nevertheless, (368) and (369) do show island effects in sentential subject position, a test we have used in 4.3.1.1 to distinguish A-not-A questions from disjunctive questions. Compare (372) and (373), the former with A-not-A sentential subject and the latter with disjunctive-question sentential subject:

(372) *Ni kan-de-qingchu kan-bu-   qingchu bijiao   hao?
        you look-DE-clear   look-INeg clear   comparatively good
        'Which is better: you can see clearly or you cannot see clearly?'

(373) Ni kan-de-qingchu haishi kan-bu-   qingchu bijiao   hao?
       you look-DE-clear or   look-INeg-clear   comparatively good
       'Which is better: you can see clearly or you cannot see clearly?'

I argue that (368) and (369) are still A-not-A questions. I relate the reason as to why they are not quite the same as other A-not-A questions in formation to the unique

151

formation of Class II. For example, unlike in any other class, PotentialP° plays a role in Class II formation and Class II is serial verb construction.

Following what we have been discussing regarding A-not-A question, there is a [A-not] template in Neg°, the realization of +Q. What is unique in Class II, however, is that 'A' is realized as the affirmative form of Class II, i.e. P1-*DE*-P2; and 'not' is realized as the negative form of Class II, i.e. P1-*bu*-P2. I suggest the reason why A cannot refer to only part of the affirmative form, i.e. violate lexical integrity, is due to the serial verb construction property of Class II, which is different from our previous analyses in which what lies in IP is either part of a compound or part of a single lexical item.

The reason why 'not' does not refer to *bu* but to the whole negation form is because *bu* cannot be an independent negator for Class II; it can only be a part of a serial verb construction, as we have seen in 6.3. Such idiosyncratic negation is different from what we have seen from Class I and will see for Class III.

Taking these factors into consideration, I take (374) to be the derivation for Class II A-not-A questions.

(374)　Zhangsan kan de　qingchu kan bu　　qingchu zhege zi?
　　　　Zhangsan look DE clear　　look INeg clear　　this　character
　　　　'Can Zhangsan see this character clearly or not?'

TopicP

*Zhangsan*k　CP

C'

NegP

Neg'

[A -- not]　ModalP

pro*k*　Modal'

P1

P1'

kan　PotentialP
look

bu　CausP

*qingch*j　t*i*
clear

P1

P1'

kan　PotentialP
look

DE　CausP

*qingchu*j　P2
clear

*zhege zi*i　P2'
this character

t*j*
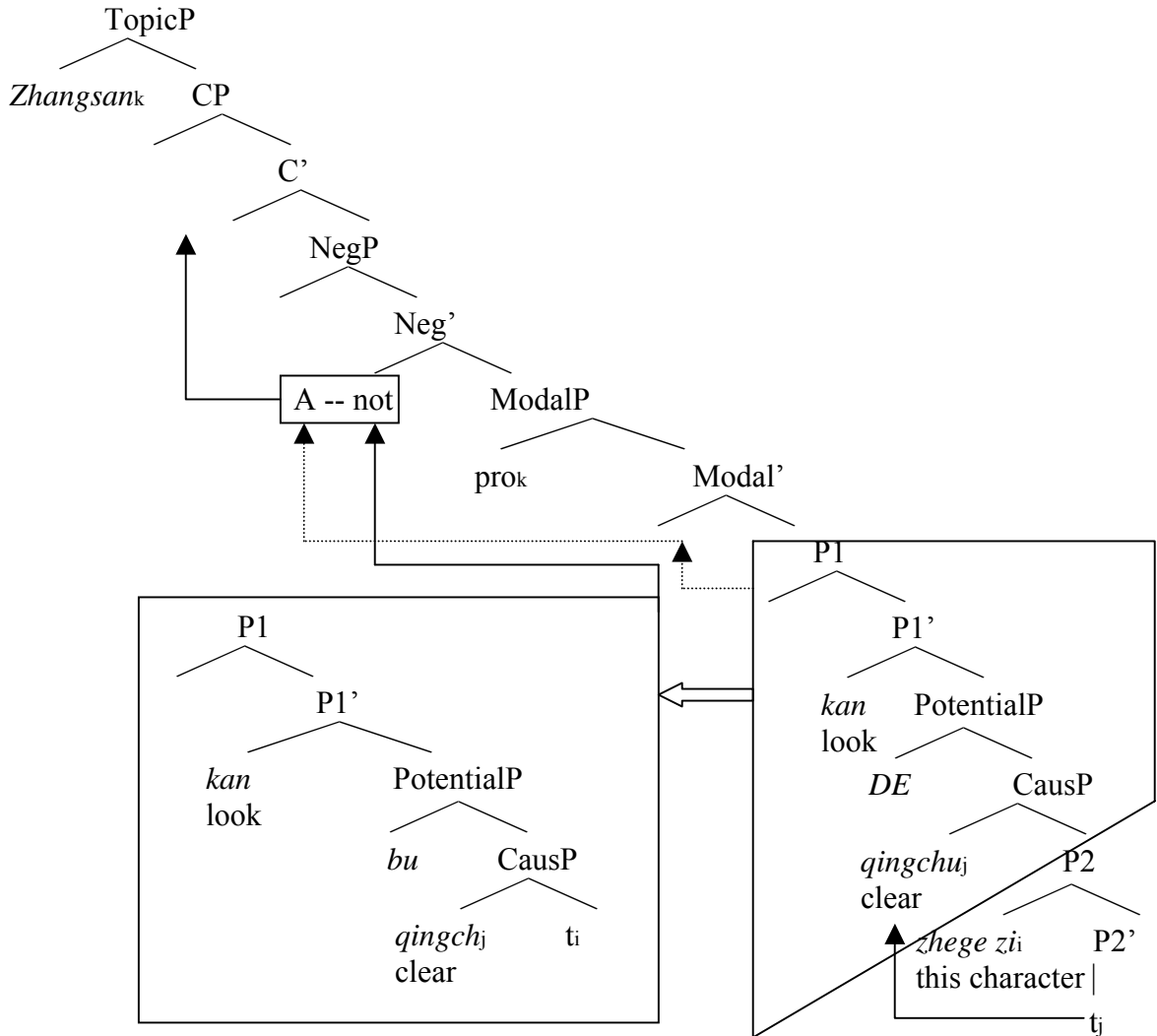
As shown in (374), there are separate courses to realize A and 'not' in the [A-not]

template. On the track of affirmative formation, as shown by the irregular-shaped box,

after P2 *qingchu* 'clear' merges to Caus°, the whole serial verb construction, *kan-de-*

qingchu 'able to see clearly', is then moved to [Spec, ModalP]. Then *kan-de-qingchu*

153

'able to see clearly' is raised to form A in Neg°, a process more like adjoining than movement as we have discussed. The adjoining process is able to leave the object *zhege zi* 'this character' behind as well as its trace undeleted.

The undeleted trace of the affirmative form of P1-*DE*-P2 then serves to form the negative part of the [A-not] as shown in the box pointed to with a hollow arrow. And then the negative part, *kan-bu-qingchu* 'not able to see clearly', is raised to Neg° to form the 'not' part. After these two separate formations, P1-*DE*-P2 P1-*bu*-P2 is raised to C to get question force and complete the whole A-not-A formation process.

6.5 Conclusion

In this chapter, I argue that Class II potential structures are derived from Class I V-V compounds. Nevertheless, Class II has serial-verb construction, with *de*, the reduced full verb, providing both potential interpretation and causativity. I have shown that *de* is accommodated in a lower ModalP, more specifically, PotentialP. Class II negation is formed by replacing *de* with *bu*. I offer a two-track account for the unique A-not-A questions of Class II, which takes the form of P1-*de*-P2-P1-*bu*-P2. I suggest that the +Q is still realized as [A-not] as we have seen before, but the 'A' and 'not' parts are derived separately. I have also offered a summary regarding the obligatory vs. optional topicalization in all three classes, which is related to the transitivity status of P2. I conclude that resultative and causatives refer to that Class I V-V compounds, Class III bi-clausal constructions, and Class II serial-verb constructions.

Chapter 7   Class III: *Chengdu-Buyu* (Degree Complement-Word)

7.1   Introduction

In this chapter, I divide the traditional Class III P1-*de*-P2 structures into three sub-groups. When P2 is an individual-level predicate, we have descriptives; when P2 is a stage-level predicate, we have either resultatives or causatives. In addition to biclausal subject-control structure (Huang, 1988), the other resultatives will be argued to have complex-clausal structure when P2 has focus marking, which is parallel to the English 'so...that' structure. Causatives have ECM structure (Gu and Pan, 2001). I conclude that the *de* in descriptive structures is a nominalizer, turning P1 into the nominal subject. Such analysis is supported by the formation of negation and A-not-A questions of descriptives. The *de* in resultative and causative structures, however, is argued to be a complementizer, introducing the resultative clause.

7.2   Formation of Class III

In Class III, P1 is a verb; P2 can be a verb or a clause. *De* is placed between P1 and P2.

Chinese linguists such as Huang (1988) and Li (1990) have identified resultative and degree/extent structures within Class III. Based on the properties of P2, I categorize Class III into three subgroups, i.e. descriptive structures, resultative structures, and causative structures. I will also show that descriptives and the latter two groups are not syntactically related and should be singled out as an independent group.

(375) is a summary of the categorization of Class III structures:

(375) P1-*de*-P2 predication

individual-level P2   stage-level P2
descriptive
                resultative   causative
                P1 and P2 share same agent   P1 and P2 have different agents

biclausal   complex clausal
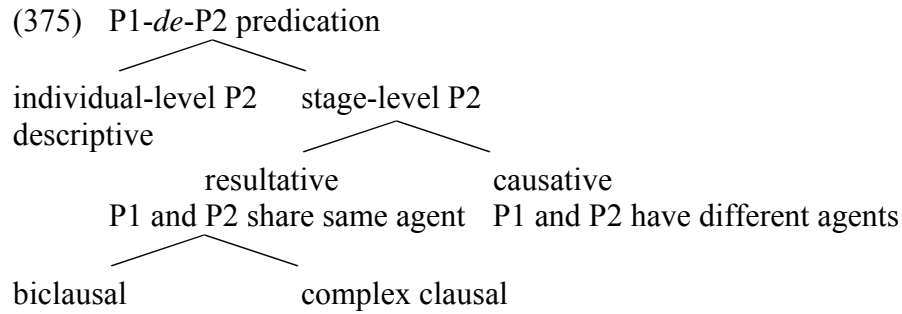
7.2.1 Descriptive Structures

(376) and (377) are descriptive structures, for the fact that they have individual-level stative P2's.

(376) Ta xie   de   hen hao.
      he write Nomi very good
      'He writes/wrote very well.'
Or: 'His writing is/was very good.'

(377) Ta tiao de   hen gao.
      he jump Nomi very high
      'He jumps/jumped very high.'
Or: 'His jumping is/was very high.'

From now on, I will gloss *de*, previously considered a Descriptive Marker, as Nomi for nominalizer, for which I will offer explanations in 7.7.2.

P1 *xie* 'to write' in (376) is potentially transitive; we are going to see examples with objects in 7.2.3, which triggers P1-copying. P1 *tiao* 'to jump' in (377) is intransitive.

156

In these descriptive structures, P2 offers a description or makes a comment on the activity specified by P1. P1 corresponds roughly to English gerunds or nominals. P2 can always be translated into English as adverbs. Note that in (376) and (377), it is the events of 'his writing' and 'his jumping' that are 'good' or 'high' but not the subject 'he' that is 'good' or 'high'.

In Chapter 5, we have seen that, in Class I, an intransitive verb like *qingchu* 'clear' can be attracted to CausP° by P1, so as to be able to assign case, as shown in (378):

(378) Ta kan-qingchu zhege zi   le.
      he look-clear   this   character CRS
      'He has seen this character clearly.'

```
              Topic
             /     \
        ta_i        CrsP
        he         /    \
                       Crs'
                      /    \
                  le    CausP
                       /     \
                   pro_i     CausP'
                            /      \
                   kan-qingchu_j    VP
                                   /   \
                             zhege zi   V'
                             this character  |
                                            t_j
```
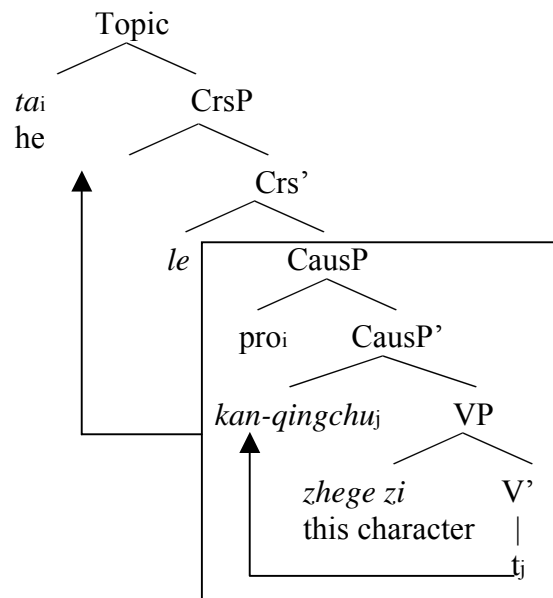
Now, as shown by the contrast between (379) and (380), the adjectival P2 *qingchu* 'clear' in Class III cannot assign case, very likely due to the lack of the

157

attachment to a CausP head. (380) is out because of the post-adjectival object that has no

legitimate case-assigner; (379) is grammatical because *zhege zi* 'this character' is a topic

showing aboutness, not an object that needs to have a case assigned.

(379) Zhege zi,   wo kan de   hen qingchu.
      this   character I look Nomi very clear
      'This character, I see/saw very clearly.'

(380) *Wo kan de   hen qingchu zhege zi.
       I   look Nomi very clear   this   character
      'I see/saw this character very clearly.'

7.2.2   Resultative Structures

(381), (382), (383), and (384) are examples of resultative Class III.

(381) Ta xie   de   hen lei.
      he write Comp very tired
      'He got tired from writing.'
Or: 'He wrote so much that he got tired.'
But not: *'His writing is/was tired.'

(382) Ta gaoxing de   xiang changge.
      he happy Comp want   sing
      'He is/was so happy that he wants/wanted to sing.'

(383) Ta gaoxing de   chang le   yige ge.
      he happy   Comp sing   Perf a   song
      'He was so happy that he sang a song.'

(384) Ta gaoxing de   dou wang le   ziji de mingzi.
      he happy   Comp even forget Perf self 's name
      'He was so happy that he even forgot his own name.'

(381), (382), (383), and (384) all have stage-level P2's that are the results of the action indicated by P1. *Lei* 'tired' in (381) is stage-level stative, the predicate of a small clause (Stowell, 1981), as we will see in 7.4. (382), (383), and (384) have stage-level clausal P2's that include modal, aspect, and focus-marker *dou* 'all' respectively. From now on, I will gloss the *de* in resultative and causative structures as Comp for complementizer, introducing the P2 clause. I will offer an explanation for this in 7.7.1.

The English translations for the above resultative structures always involve the resultative 'so…that' structure, which we will go more deeply into in 7.6.2. (381) includes potentially transitive P1 *xie* 'to write'. We are going to see examples with objects involved in 7.2.3. P1 *gaoxing* 'happy' in (382) and (383) is stative/intransitive. Unlike descriptive Class III (376) and (377), resultative (381) cannot be translated with gerunds or nominals involved. To be more specific, (381) does not mean 'his writing is/was tired', but 'he write/wrote so much that he is/was tired', signaling a control structure[15].

7.2.3   P1-Copying

(385) and (386) show that in descriptive and resultative structures respectively, P1 must be repeated when it has an object, in their case, *zi* 'character', for example. (387) and (388) are ungrammatical due to the lack of P1-coying.

---

[15] Also note that only (383) is not ambiguous in terms of time reference because of the use of the culminative perfective marker *le*; (382) may have either present or past interpretations, which contradicts Lin (2002)'s observation that in a resultative structure, if the matrix VP, or our P1, is stative, the temporal reference should be past.

(385) Ta xie zi   xie de   hen hao.
       he write character write Nomi very good
       'He writes/wrote characters very well.'

(386) Ta xie zi   xie de   hen lei.   cf. (390)
       he write character write Comp very tired
       'He got tired from character-writing.'

(387) *Ta xie zi   de   hen hao.
        he write character Nomi very good
       'He writes/wrote characters very well.'

(388) *Ta xie zi   de   hen lei.
        he write character Comp very tired
       'He got tired from character-writing.'

For descriptive structures, P1-copying can be avoided if the object or the whole
VP is topicalized, as in (389) and (390); (391) is out because of the unnecessary P1-
copying.

(389) Zi   ta xie de   hen hao.
       character he write Nomi very good
       'Characters, he writes/wrote very well.'

(390) Xie zi   ta xie de   hen hao.   cf. (386)
       write character he write Nomi very good
       'Writing characters, he is/was good.'

(391) *Xie ta xie zi   xie de   hen hao.
        write he write character write Nomi very good
       'Writing characters, he is/was good.'

Topicalization, however, cannot happen with a resultative structure like (386), as
shown in (392). Also note that, unlike descriptive structures, which are ambiguous for
time reference, resultative structures can only have past reference.

160

(392) *(Xie) zi   ta xie   de   hen lei.
       write character he write Nomi very tired
       'He got tired from writing characters.'

7.2.4   Causative Structures

(393) and (394) are examples of causative Class III structures, because they can

pass the *ba*-structure test that we have introduced in 5.4.1 and 5.4.2; cf. (395) and (396)

respectively. The P1, *da* 'to hit' in (393), is transitive; whereas the P1 *ku* 'to cry' in

(394) is intransitive:

(393) Zhangsan da de   Lisi   hao-tao-da-ku.
       Zhangsan hit Comp Lisi loud-loud-big-cry
       'Zhangsan hit Lisi so hard that Lisi cried loudly.'

(394) Zhangsan ku de Lisi hen shangxin.
       Zhangsan cry Comp Lisi very sad
       'Zhangsan cried so much that Lisi got sad.'

(395) Zhangsan ba Lisi   da de   hao-tao-da-ku.
       Zhangsan BA Lisi hit Comp loud-loud-big-cry
       'Zhangsan hit Lisi so hard that Lisi cried loudly,'

(396) Zhangsan ba Lisi ku de   hen shangxin.
       Zhangsan BA Lisi cry Comp very sad
       'Zhangsan cried so much that Lisi got sad.'

7.3   Negation

To negate descriptive and resultative Class III structures, *bu* is placed before P2,

if P2 is adjectival, as in descriptive (397) and resultative (398). (399) is ungrammatical

because *bu* is placed before P1:

(397) Ta xie zi   xie de   bu   hao.
       he write character write Nomi INeg good
       'He does/did not write characters very well.'

(398) Lisi zuotian   pao de   bu ?(hen) lei   / yidian-dou-bu lei.
       Lisi yesterday run Comp INeg very   tired / not-at-all   tired
       'Yesterday, Lisi did not get too tired from running.'

(399) *Ta bu   xie zi   xie de   hen hao.
        he INeg write character write Nomi very good
       'He does not write characters very well.'

It needs to be pointed out, however, that (398), with a stage-level P2 does not sound very natural as a spontaneous speech; it sounds more like a negative response to some previous proposition in discourse, i.e. a metalinguistic negation, with Neg positioned very high. Pragmatically, it is hard to express that the result of P1 is actually 'not tired'. The use of the adjective intensifier *hen* 'very' that usually occurs before affirmative stative and the use of NPI *yidiandoubu* 'not at all' in (398) only seems to adjust the degree of the previously mentioned facts.

On the other hand, the perfective/CRS negator *mei* is in complementary distribution with *de*, if P2 is adjectival, as shown in (400) for a descriptive structure. (401) is grammatical because *de* is dropped, ending up being the same as the negation of Class I, as we have seen in 5.5. (402) and (403) are examples with resultative structures, which follow the same negation pattern as descriptives, i.e. *de* and *mei* cannot co-occur:

(400) ?*Ta mei   xie zi   xie de   hen hao.
         he SNeg write character write Nomi very good
       'He did not write characters very well.'

162

(401)   Ta (xie zi)   mei   xie hao.
        he (write character) SNeg write good
        'He did not write (characters) very well.'

(402)   ?*Ta mei   pao de   hen lei.
          he SNeg run Comp very tired.
          'He didn't get tired from running'

(403)   Ta mei   pao lei.
        he SNeg run tired
        'He didn't get tired from running.'

I assume that such incompatibility between descriptive-*de*, which will be argued to be a nominalizer later, and *mei* is caused by P2 being an individual-level predicate, which restricts it only to *bu*-negation, as we have discussed in 3.3.1.

De in resultative and causative structures, which I will argue to be a complementizer, prevents a negator outside the resultative P2 clause from negating the adjective inside P2 as shown in (402), a point we will go more deeply into in 7.4. (403) is good because resultative Class I does not involve two clauses but a V-V compound.

(404) and (405) are examples showing how clausal P2 is negated, i.e. with *bu* for modal negation as in (404) and *mei* for perfective aspect/CRS negation as in (405). Their negation patterns follow what we have discussed in Chapter 3:

(404)   Zhangsan qi   de   Lisi bu   xiang chifan.
        Zhangsan anger Comp Lisi INeg want eat
        'Zhangsan angered Lisi so much that Lisi does not want to eat.

(405)   Ta mang de   mei   shuijiao.
        he busy Comp SNeg sleep
        'He was so busy that he did not sleep.'

7.4 Control Structure in Class III

7.4.1 Controls in Class III (Huang, 1992)

Huang (1992) argues that the resultative and causative structures in Class III are control structures. For example, resultative (381), repeated below as (406), has subject-control; and causative (393), repeated below as (407), has object-control. For control structures, Huang (1989) argues for the existence of Pro, a combination of PRO and pro, based on the claim that Mandarin does not distinguish finiteness vs. non-finiteness:

(406) Ta$_i$ xie   de   hen Pro$_i$ lei.
      he$_i$ write Comp very Pro$_i$ tired
      'He wrote and got very tired.'

(407) Zhangsan da de   Lisi$_i$ Pro$_i$ hao-tao-da-ku.
      Zhangsan hit Comp Lisi$_i$ Pro$_i$ loud-loud-big-cry
      'Zhangsan hit Lisi so hard that Lisi cried loudly.'

In particular, Huang argues that sentences like (394), repeated below as (408), with intransitive P1 such as *ku* 'cry', have also an object-control structure, despite the fact that intransitive *ku* does not seem to be able to assign case to *Lisi*. We have seen from (396), repeated below as (409), that (408) is causative because it passes the *ba*-test.

(408) Zhangsan ku de   Lisi$_i$ Pro$_i$ hen shangxin.
      Zhangsan cry Comp Lisi$_i$ Pro$_i$ very sad
      'Zhangsan cried so much that Lisi got sad.'

(409) Zhangsan ba Lisi$_i$ ku de   hen Pro$_i$ shangxin.
      Zhangsan BA Lisi$_i$ cry Comp very Pro$_i$ sad
      'Zhangsan cried so much that Lisi got sad.'

In order to identify which DP in (407), (408) and (409) controls the Pro, Huang invokes the Minimal Distance Principle (MDP) (Rosenbaum, 1970):

An infinitive complement of a predication P selects as its controller the minimal c-commanding NP in the functional complex of P

7.4.2   Object-Control Structure

For object control structures like (407) and (408), Huang argues that the subject of P2, the resultative clause, is represented as the object not of the matrix verb P1 alone, but of a complex predicate that contains both the matrix verb and the predicate of the result clause. The complex predicate in (408), for example, is *ku-de Pro hen shangxin* 'cry-*de* Pro very sad'. Such an analysis accounts for the fact that *ku* 'cry', an intransitive verb, can assign case to its patient *Lisi.* Huang treats *de* as a suffix attached to the verb; but he does not specify what kind of verbal suffix *de* is. (410) is the structure Huang gives for the object-control structure.

(410)   Zhangsan ku-de Lisi hen shangxin.
        Zhangsan cry-de Lisi very sad
        'Zhangsan cried so much that Lisi got sad.'

```
                    IP
                   /\
           Zhangsan  VP
                    /\
                 Lisiᵢ  V'
                      /\
                     V   Resultative Clause
                   ku-de      /\
                 cry-de  Proᵢ  hen shangxin
                              very  sad
```
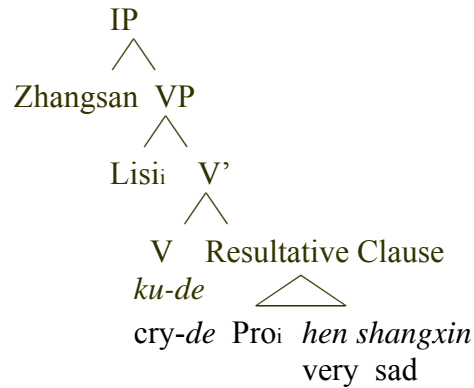
According to Huang (1992), in (410), V selects and theta-marks the resultative clause, and V' compositionally selects and theta-marks the NP *Lisi* as a patient or a theme. And VP, in turn, compositionally theta-marks the NP *Zhangsan* as the agent. The caseless *Lisi* appears not directly as the subject of the result clause but the external object of the V' and controls the Pro subject of the RC, in accordance with the MDP. One way to satisfy the Case Filter is to move the verb *ku-de* to a position higher than *Lisi*, for example, into a higher VP-shell, since in Chinese case is assigned from left to right (A. Li, 1990). An alternative way to assign case to *Lisi*, argued by Huang, is to insert case-marker *ba* to the left of *Lisi*, as shown in (409).

Now the question is, however, why the intransitive verb *ku* 'to cry' can assign case after being raised, which should not be able to contribute to its transitivity.

I agree with Huang that *Lisi* in (410) is not the direct object of the verb *ku* 'to cry' alone. I offer another piece of evidence, taking P1-copying as a test for objecthood.

In (393) or (407), repeated below as (411), although *Lisi* follows the transitive verb *da* 'to hit', we do not see P1-copying for descriptive and resultative Class III as we discussed in 7.2.3. If we insist on having P1-copying, i.e. treating *Lisi* as the object of *da*, as (412) does, we end up with a sentence with a totally different interpretation; i.e. the crier in (412) is *Zhangsan*, the hitter, while the crier in (411) is *Lisi*, the hittee:

(411) Zhangsan da de   Lisi hao-tao-da-ku.
        Zhangsan hit Comp Lisi loud-loud-big-cry
        'Zhangsan hit Lisi so hard that Lisi cried loudly.'

(412) Zhangsan da Lisi da de   hao-tao-da-ku.
        Zhangsan hit Lisi hit Comp loud-loud-bit-cry
        'Zhangsan hit Lisi so hard that Zhangsan cried out.'
        *'Zhangsan hit Lisi so hard that Lisi cried out.'

By the same token, P1-copying in (394), repeated below as (413), will only lead to (414), in which the person being sad is *Zhangsan*, not *Lisi*. (414) is grammatical only when *ku* is interpreted as a transitive verb 'weep over' that is capable of taking an object:

(413) Zhangsan ku de Lisi hen shangxin.
        Zhangsan cry Comp Lisi very sad
        'Zhangsan cried so much that Lisi got sad.'

(414) Zhangsan ku Lisi ku de   hen shangxin.
        Zhangsan cry Lisi cry Comp very sad
        'Zhangsan wept over Lisi sadly.'
        *'Zhangsan cried so much that Lisi got sad.'

I will give detailed derivation structures for (413) and (414) in 7.7.

(412) and (414) indicate that in causative structures, the noun, i.e. *Lisi*, after P1 might not be the object of the verb; otherwise, we should have P1-copying as we have found in descriptives and resultatives like (415).

(415) Ta xie zi   xie de   hen lei.
      he write character write Comp very tired.
      'He got tired from character-writing.'

We can also conclude that P1-copying happens only in subject-control structures.

7.4.3 Subject-Control Structure

Huang (1992) assumes (416) to be the structure of subject-control, in which the subject *Zhangsan* directly controls the Pro in the subordinate clause:

(416) Zhangsan ku-de   hen shangxin.
      Zhangsan cry-De very sad
      'Zhangsan cried and became sad.'

                    IP
                   /\
          *Zhangsan*ᵢ VP
                      /\
                    V   Resultative Clause
                  ku-de   /\
                   cry-*De*   Proᵢ *hen shangxin*
                                    very sad
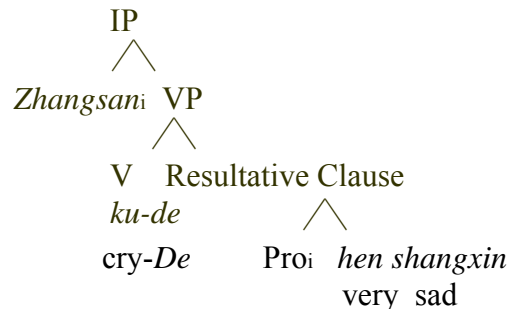
7.5 ECM or Control?

Gu and Pan (2001) argue against treating all resultative structures uniformly as control structures, because sometimes the Pro is unrecoverable, considering that Huang

treats Pro as PRO and pro blended. For object-control structure, for example, the Pro position cannot be occupied by a pronoun *ta* 'he' that is co-indexed with *Zhangsan*, the object:

(417) Xiaoming qi   de   Zhangsan$_i$ *(ta$_i$) shuo-bu-chu-hua-lai.
       Xiaoming irritate Comp Zhangsan   he say-not-out-word-come
       'Xiaoming irritated Zhangsan$_i$ so much that he$_i$ could not talk.'

The same phenomenon happens to subject-control; the agent position of P2 can only be a Pro and not a co-indexed pronoun:

(418) Xiaoming$_i$ qi   de   (*ta)$_i$ shuo-bu-chu-hua-lai.
       Xiaoming irritate-Comp he say-not-out-word-come
       'Xiaoming was so irritated/angry that he could not talk.'

One could, however, potentially argue that (417) and (418) are not counter-examples to Huang's analyses. What they show is that the subject position of P2 is an obligatory caseless position, which prevents a pronoun from surfacing. For example, F. Liu (1985) argues that embedded clauses in control structures are actually all non-finite, and the occasional observed aspect marker in an embedded clause is actually an extension of the aspect-marking on the matrix verb, considering that Chinese aspect-marking is very flexible in terms of positioning, with the freedom of being INFL head or suffixed to the verb.

Furthermore, Montalbetti (1984) and Soriano (1989) have reported that pronouns and pros are not always interchangeable due to the Avoid Pronoun Principle. For

example in Spanish, pronouns cannot be bound by a quantificational phrase, as shown in (419); only pro can:

(419) Muchos chicos$_i$ dijeron que pro$_i$/*ellos$_i$ no lo habian hecho.
       many   boys$_i$ said   that pro$_i$/* they$_i$ not it have   done
       'Many boys said that they did not do it.'

We therefore can conclude that the pro recovery test for control-structure as suggested by Gu and Pan (2001) might not be reliable.

Gu and Pan (2001) also argue that what is considered the object of the complex predicate by Huang (1992) may not be an object at all; for instance, they utilize the focus marker *lian...dou* 'even' to illustrate their point.   Compare (407), repeated below as (420), and (421), the former without a focus marker while the latter with one; also note *lian* is generally optional in the focus *lian...dou* structure:

(420) Zhangsan da de   Lisi hao-tao-da-ku.
       Zhangsan hit Comp Lisi loud-loud-big-cry
       'Zhangsan hit Lisi so hard that Lisi cried out loudly.'

(421) Zhangsan da de   (lian) Lisi dou hao-tao-da-ku
       Zhangsan hit Comp (even) Lisi even loud-loud-big-cry
       'Zhangsan hit so hard that even Lisi cried out loudly.

Their reasoning is that the focus marker *lian…dou* 'even' can only modify an object contained in its own clause and must be at a preverbal position, as we have introduced in 1.6.4, also cf. the contrast between (422) and (423):

(422) Zhangsan lian dianshi dou you.
Zhansan   even TV   eve have
'Zhangsan even has a TV.'

(423) *Zhangsan you lian   dianshi dou.
Zhangsan   have even TV   even
'Zhangsan even has a TV.'

Consequently, according to Gu and Pan, the focused *Lisi* in (421) cannot be the object of the complex predicate, considering that it does not precede the complex predicate.   As a result, Gu and Pan argue that (421) does not have object-control structure; instead, it has an ECM structure, with *ku-de* assigning case to the subject of clausal P2, i.e. *Lisi.*

But, under closer investigation, we see that actually (420) and (421) are not synonymous; they differ not only in focus but also in interpretation. According to the English translation, (421) is a resultative structure, indicating the extent that Zhangsan's hitting has reached; namely even Lisi, for example, the least emotional person among a group of people, cried out; what is crucial is that Lisi is by no means the patient of Zhangsan's hitting; the patient of 'hit', however, can be a drum, another person, or a ball. On the other hand, (420) is a causative structure, with only one interpretation, in which Lisi is the patient of Zhangsan's hitting, which caused Lisi to cry.

A similar contrast can be found in English: in 0, the patient of 'scare' is not 'the living lights', though it is found at the same post-verbal object position as 'me' in (425). 'The living daylights out of me' shows the extent of 'his scaring me':

171

(424) He scared the living daylights out of m

(425) He scared me.

Another difference between (420) and (421) is that (421), with focus, cannot be transformed into causative *ba*-structure without further modification, though (420) can. Although, for example, both the optional *lian* and the obligatory *dou* are used in (421), *lian* is prohibited in (426), the closest *ba*-version of (421):

(426) Zhangsan ba (*lian)   Lisi dou da de   hao-tao-da-ku.
       Zhangsan BA (*even) Lisi even hit Comp loud-loud-big-cry
       'Zhangsan hit Lisi so hard that Lisi cried out.'

With a focus marker in P2, (421) is a resultative structure; without a focus marker, (420) is a causative structure[16]. I cannot give an account of the effects of focus, but the minimal pair of (420) and (421) does serve to argue that they differ structurally from one another as well.

What is more, the adjacency effects as found in English ECM structures (Stowell, 1981), like (427), apply also to Chinese. (428) is out, for example, because of the interference of the adverb *mingtian* 'tomorrow' between the verb *tuijian* 'recommend' and the case assignee *ta* 'he'.

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16 Similar effects caused by focus marking can also be found in English. From the contrast between (i) and (ii), we can see that normally, 'assure' is not an ECM verb; but once it is used within a focus-like relative clause as in (iii), 'assure' can assign exceptional case:
       (i) I believe John to be honest
       (ii) *I assure you John to be honest
       (iii) John, who I assure you to be honest, is really honest.

(427) *I believe sincerely him to be crazy.
cf.   I sincerely believe him to be crazy.

(428) a.   *Wo tuijian   mingtian ta zou.
                I   recommend tomorrow he go
                'I recommend that he go tomorrow.'

       b.   Wo tujian   ta mingtian zou.
                I   recommend he tomorrow go
                'I recommend that he go tomorrow.'

Similarly, if we treated (421), repeated below as (429), as ECM structure, the interfering focus marker *lian...dou* between the case assigner and assignee would have violated such adjacency requirement. The grammaticality of (429) indicates that it does not have ECM structure:

(429) Zhangsan da de   (lian) Lisi dou hao-tao-da-ku
       Zhangsan hit Comp (even) Lisi even loud-loud-big-cry
       'Zhangsan hit so hard that even Lisi cried out loudly.

7.6   Complex-Clausal Resultatives

7.6.1   Resultatives with Finite and Non-finite P2

I agree with Gu and Pan (2001) on the fact that (420) and (421), repeated below as (430) and (431), do not have object-control. They have proved that (430) has ECM structure and, what is more, I have shown that (430) is not synonymous with (431), due to the existence of the focus marker in the latter that makes its P2 more like an independent clause.

(430)   Zhangsan da de   Lisi hao-tao-da-ku.
        Zhangsan hit Comp Lisi loud-loud-big-cry
        'Zhangsan hit Lisi so hard that Lisi cried out loudly.'

(431)   Zhangsan da de   (lian) Lisi dou   hao-tao-da-ku.
        Zhangsan hit Comp (even) Lisi even loud-loud-big-cry
        'Zhangsan hit (something) so hard that even Lisi cried out loudly.'

In this section, I will argue that (431) does not involve ECM or control but is a resultative structure with finite P2, i.e. a complex clause structure. I relate it to English resultative *so...that* structure that does not involve control or ECM.

Another difference between (430) and (431) not discussed by Gu and Pan (2001) is that the former has non-finite P2 that requires ECM while the latter has finite P2. We have discussed in 1.6.4 that focus structure cannot be used in non-finite clauses, as shown again below by (432) and (433). This incompatibility explains why Gu and Pan's (2001) focus test can only show that (430) has ECM but cannot show the relation between P1 and P2 in (431).

(432)   *Wo quan   lian Zhangsan dou   zou.
          I   persuade even Zhangsan even go
        'I persuade even Zhangsan to go.'

(433)   *Lian doufu wo dou   quan   ta chi.
          even tofu   I   even persuade he eat
        'I even persuade him to eat tofu.'

174

In short, I argue that in Class III, when clausal P2 is finite, we have complex-clausal structure, on par with English 'so…that' structure, but when clausal P2 is non-finite, we have ECM structure.

7.6.2   *So…That* and *Zhemo…Dou* Structures

As we have seen, resultatives and causatives can always be translated into English 'so…that' structure, which suggests treating *de* as a counterpart of English *that*, i.e. a complementizer. I will have a review of all the *de*'s we have encountered in 7.6.2.

Linguists such as Guéron and May (1984) and Meier (2002) have analyzed the *that*-clause in the 'so…that' structure as a result clause.

Guéron and May (1984) noticed the obligatory co-occurrence of *so* or *such* and the result clause headed by *that*, as shown by the contrast between (434) and (435):

(434)   So many books have been published recently that I haven't been able to read them all.

(435)   *Many books have been published recently that I haven't been able to read them all.

They argue that the result clause is the complement of *so*. Such a head-complement relation is realized through QR of *so* at LF. And the relative clause is extraposed and adjoined to CP3 as shown in (436):

(436)

```
                    S'
          ┌─────────┴─────────┐
         QP²                   S'
          │           ┌────────┴────────┐
          │          S'                 S'²
          │     ┌─────┴─────┐            
          │    Comp         S            
          │            ┌────┴────┐       
          │           NP        VP       
          │        ┌───┴───┐  ╱────╲     
          │       NP       S          
          │        │       │          
         so    e² many    e²   have been published..    that I haven't been able to
               books                                     read them all
```
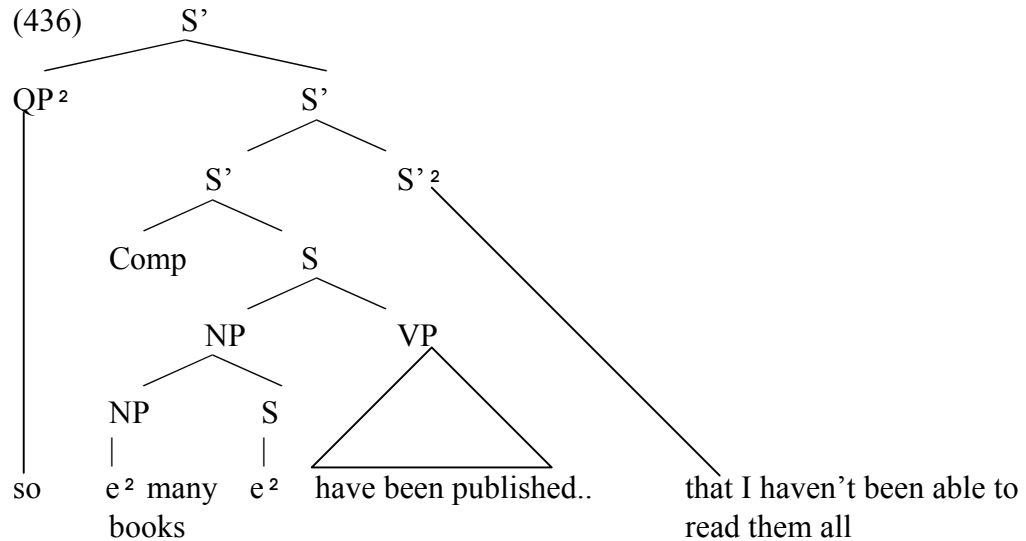
How about the cases in which *so* introduces a predicate rather than an argument? Meier (2003) proposes that semantically, in such a resultative construction, *so* introduces a comparison of two extents, where the first extent is the extent that makes the extent predicate expressed by the main clause true and the second extent is the minimal extent of a set of extents determined by the relevant hidden conditional. For example:

(437)   a. The jet flies so fast that it can beat the speed record.
        b. The e(xtent), such that the jet flies e-fast, $\geq$ the minimal e*, such that if
           the jet flies e*-fast, it can beat the speed record, given what we know.

Meier argues for a two-step derivation for *so...that* structure: in a first step, the resultative CP is base generated as a complement of the [Head, DegreeP] *so*, since it is *so* that requires such an obligatory sentential complement, similar to that between comparative morphology and *than*-clause. Then the CP is extraposed to the right periphery of the sentence to derive the surface position. At LF, the sentential

176

complement is reconstructed to its base position within AdjP, forming a constituent with

so; such a degree constituent then undergoes QR. (438) is the LF representation of

so…that construction:

(438)   CP
        /   \
    DegPᵢ   CP
    /   \   / \
  so sentential tᵢ Adj
      complement
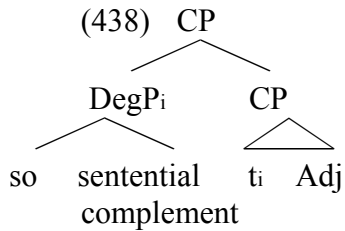
Meier (2001) and Guéron and May (1984) have similar analyses on both the

nominal and adjectival 'so…that' structure; namely, the degree head and the sentential

complement starts as a constituent and then the latter undergoes extraposition.

We have observed that when translating Mandarin resultatives and causatives into

English 'so…that' structure, we have to specify the adjective after the degree head 'so',

for instance 'much' in (381) and 'hard' in (393), which actually do not exist in the

Chinese examples; (381) and (393) are repeated below as (439) and (440):

(439)   Ta xie   de   hen lei.
        he write Comp very tired
        'He wrote so much that he got tired.'

(440)   Zhangsan da de   Lisi hao-tao-da-ku.
        Zhangsan hit Comp Lisi loud-loud-big-cry
        'Zhangsan hit Lisi so hard that Lisi cried loudly.'

The Chinese counterpart for *so…that* is *zhemo* + adj. + *lian* + *dou*. *Zhemo* is

analytical and consists of two morphemes, the pronoun *zhe* 'this' and *mo* 'look, way'.

Lian…dou is the focus marker that we are familiar with already. Now, what we have

identified as resultatives with finite P2 can actually have *zhemo* …adj. optionally inserted

before the focus marker *lian…dou*. (441) and (442)[17] form a minimal pair, the latter with

zhenmo recovered and the former without. (443) is an example with *zhenmo* as well as a

reflexive in it recovered. (444) is out because of lacking the obligatory co-occurrence of

zhenmo and *lian…dou.*

(441) Zhangsan da de   (lian) Lisi dou   hao-tao-da-ku
       Zhangsan hit Comp (even) Lisi even loud-loud-big-cry
       'Zhangsan hit (something) so hard that even Lisi cried out loudly.'

(442) Zhangsan da de   zhemo zhong lian Lisi dou   hao-tao-da-ku   qilai.
       Zhangsan hit Comp so   hard   even Lisi even loud-loud-big-cry start
       'Zhangsan hit so hard that even Lisi started crying loudly.'

(443) Zhangsan da Lisi da de   zhenmo zhong lian ziji dou hao-tao-da-ku qilai.
       Zhangsan hit Lisi hit Comp so   hard   even self even cry-loud   start
       'Zhangsan hit Lisi so hard that Zhangsan himself started crying loudly.'

(444) *Zhangsan da de   zhemo zhong Lisi hao-tao-da-ku   qilai.
       Zhangsan hit Comp so   hard   Lisi loud-loud-big-cry start
       'Zhangsan hit Lisi so hard that Lisi cried loudly.'

As I have already suggested, *de* in (442) functions as a complementizer,

introducing a resultative clause. As shown in (445), I argue that in P2, *zhemo* heads its

own projection, on par with an English Deg(ree)P headed by *so*. DegP requires a

sentential complement that has focus marking, parallel to the English obligatory co-

---

[17] More research is needed on why *qilai* 'start' makes (442) sound more natural. Otherwise, (442) and (421) or (431) would form a perfect minimal pair. I assume this is related to the accomplishment rather than activity Aktionsart as required by *zhemo*.

occurrence between *so* and a resultative clause as Meier (2003) has argued for English

'so…that' structure:

(445)　Zhangsan da de　　zhemo zhong Lisi dou haotaodaku qilai.
　　　　Zhangsan hit Comp so　　hard　Lisi even cry.loud　　up
　　　　'Zhangsan hit (so much) that even Lisi started crying out.'

```
                TopicP
               /     \
        Zhangsan_k    CP1
                      |
                     IP1
                    /    \
                 pro_k    VP
                         /   \
                      t_pro   V'
                             /   \
                           da     CP2
                           hit   /   \
                               de     DegP
                                      /   \
                                          Deg'
                                         /    \
                                 zhemo Adj     Lisi dou haotaodaku qilai
                                 zhong Lisi even cry.loud    start
                                 hard
```
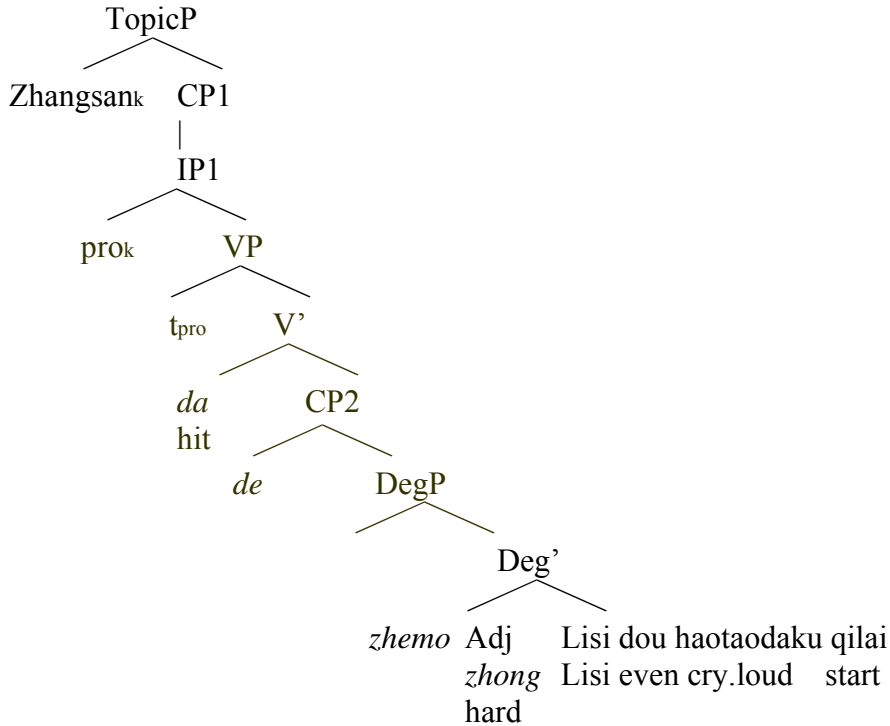
One difference between Mandarin *zhemo…dou* and English *so…that* structures is

that Mandarin is a language that does not allow extraposition (Li, 1990), which results in

de, the complementizer of the result clause, being adjacent to the verb, looking like a

suffix[18].

_____

[18] The optionality of *zhemo* can be related to the optionality of the English complementizer *that* in *so…that* structure:
　　　　I was so happy (that) I left very late.

7.7 *De*'s Revisited

7.7.1 Complementizer *De* in Resultative and Causative Structures

De is argued to be a verb suffix in resultatives by Huang (1992). He also argues

that *de* is derived from a full verb *de* 'to obtain'[19].

Huang does not specify what kind of verbal suffix *de* is. (446) and (447), on the

other hand, illustrate that V-*de* must be followed by a clause but not an DP argument:

> (446)   Wo da ta.
>   I   hit him
>   'I hit him.'

But:

> (447)   *Wo da de   ta.
>   I   hit Comp him

Instead:

> (448)   Wo da de   ta ku le   qilai.
>   I   hit Comp he cry Perf start
>   'I hit him so much that he started crying.'

I have concluded that in resultative and causative structures, *de* is a

complementizer. For resultatives, it would not be hard to modify Huang's subject-control

structure, making *de* the complementizer of the resultative clause:

---

[19] According to Li and Thompson (1981), it is actually the potential *de* but not the resultative *de* that is
derived from a full verb. Data from other dialects of Chinese such as Cantonese and Min, for example,
indicate that, phonetically, full-verb *de* and the suffixal *de* in potential form can be cognates; but no other
dialectal evidence has been given regarding the relation between resultative *de* and the full verb *de*.

(449)   Huang's structure:

Zhangsan ku   de hen shangxin.
Zhangsan cry DE very sad
'Zhangsan cried very sadly.'

IP
Zhangsan$_i$ VP

V   Resultative Clause
ku-de
cry-de   Pro$_i$ hen shangxin
very   sad
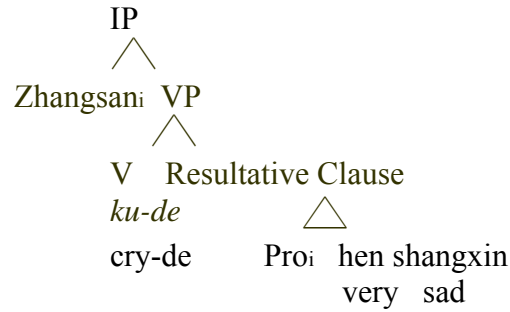
My revision with *de* as the complementizer of resultative clause:

TopicP
Zhangsan$_i$ IP

VP

pro$_i$ V'

V   Resultative Clause
ku-
cry   *de*   Pro$_i$ *hen shangxin*
very sad
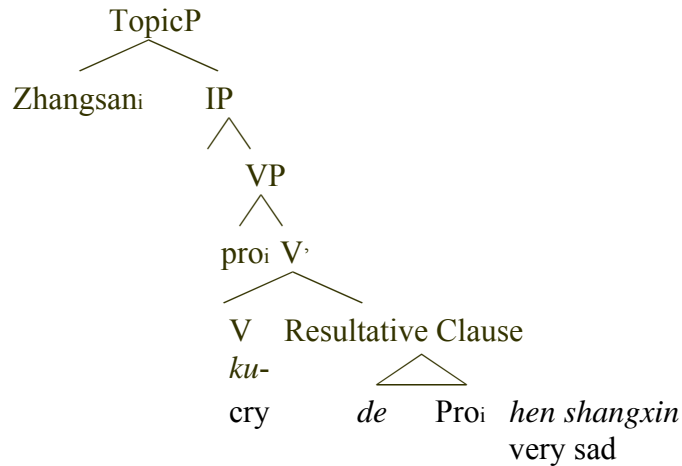
For causative structures, since the embedded resultative clause is non-finite, as Liu (1985) has argued, it will be treated as a small clause, as in Stowell (1981). Consequently, I follow Gu and Pan (2000) in arguing for an ECM structure for causatives; for example, in (450), *Lisi* is marked with an exceptional accusative case by *da*, or by the prepositional complementizer *de* in the sense of Kayne (1981) as shown below in (451).

181

(450) Zhangsan da de   Lisi hen shangxin.
        Zhangsan hit Comp Lisi very sad
        'Zhangsan hit Lisi so much that Lisi became sad.'

```
                TopicP
               /     \
        Zhangsan_k    VP
                     /   \
                  pro_k    V'
                          /   \
                         V    Resultative Clause
                         da        /      \
                         hit      de        VP
                                           /  \
                                        Lisi   hen shangxin
                                               very  sad
```
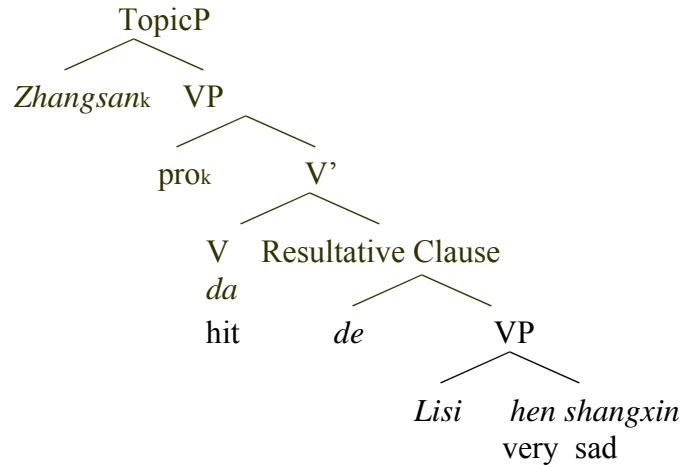
To be more accurate, *de* in ECM structure is more like English infinitival complementizer 'for' as in Kayne (1981), which is different from the *de* as found in resultative (416) and (442) that is more like English 'that'. *De* being a prepositional complementizer also sheds light on examples like (410), repeated below as (451), in which P1 *ku* 'to cry' is intransitive and cannot assign case of any sort. Like English 'for' that governs the infinitival subject, *de* can achieve the task of assigning case to the subject of clausal P1 *Lisi* cross-clausal boundary. Actually *de* is a cognate to the preposition *dao* 'to' as shown in (452), cf. Chao (1961):

(451)   Zhangsan ku de [Lisi hen shangxin.]
        Zhangsan cry de Lisi very sad
        'Zhangsan cried so much that Lisi got sad.'

(452)   cong Luoshanji   dao Beijing
        from Los Angeles to   Beijing

What needs to be pointed out, however, is that the ECM structure like (450) are not (451) quite the same as what we are familiar with in that the prepositional complementizer *de* or P1 assigns cases to the subject of an adjunct clause rather than that of a sentential complement. It would not be a wildcard, though, for us to encounter an ECM structure not strictly in the sense of Chomsky (1980); for example, Kayne (1981) argues for two kinds of infinitival complimentizers, prepositional English 'for' and non-prepositional French *de* to explain the difference between the ECM verb 'believe' and its non-ECM counterpart in French 'croire'.

Now that we have argued that P2 in both resultative and causative structures to be a clausal complement, we are at a better position to explain the P1-copying in resultative and causative structures that have an object following P1, as shown by (453) and (455) respectively. Huang (1988) appeals to a descriptive principle in Mandarin, which prevents a verb from having complements of different kinds. In (453) and (455), for example, each of the two *xie*'s 'to write' takes its own complement, the direct object *zi* 'character' and the resultative clause '*pro de hen lei*'. (454), without P1 copying, is ungrammatical, because the verb *xie* 'to wrtie' takes both nominal and clausal complements. (456) is fine when interpreted as an ECM structure, with *da* 'to hit' taking only a small clause complement; but it cannot be interpreted as a subject-control structure, which make *da* 'to hit' take both a nominal and a clausal complement.

(453)   Ta xie   zi   xie de   hen lei.
        he write character write Comp very tired.
        'He got tired from character-writing.'

(454)   *Ta xie zi   de   hen lei.
           he write character Comp Very tired
         'He got tired from character-writing.'

(455)   Zhangsan da Lisi da de   hao-tao-da-ku.
         Zhangsan hit Lisi hit Comp loud-loud-bit-cry
         'Zhangsan hit Lisi so hard that Zhangsan cried out.'

(456)   Zhangsan da de   Lisi hao-tao-da-ku.
         Zhangsan hit Comp Lisi loud-loud-big-cry
         'Zhangan hit Lisi so much that Lisi cried out.'
         *'Zhangsan hit Lisi so hard that Zhangsan cried out.'

7.7.2   Nominalizer *De* in Descriptives

I have treated *de* in resultative and causative structures as a complementizer. I further argue that the *de* in descriptive structures is a nominalizer.

Descriptives like (376) and (377), repeated below as (457) and (458), do not seem to have either subject- or object- control structure:

(457)   Ta xie   de   hen hao/kuai/zhengqi.
         he write Nomi very good/fast/neat
         'He writes/wrote very well/fast/neatly.'
         or:
         'His writing is/was very good/fast/neat.'

(458)   Ta tiao de   hen gao/kuai/congming.
         he jump Nomi very high/fast/smart
         'He jumps/jumped very high/fast/smartly, e.g. in an energy-efficient way.'
         or:
         'His jumping is/was very high/fast/smart.'

(457) and (458) cannot be subject-control, since it is not 'he' that is good or smart but his writing or jumping. Neither do they have object-control, because of the lack of an

184

overt object. One might argue that in (457) there is a covert generic object, i.e. anything he writes, a book, calligraphy, or a play; if so, (457) might fall into the category of object-control. The problem, however, is we might have trouble explaining (458): first, it is not easy in Mandarin to find a reasonable object for a verb like *tiao* 'to jump'; second, although we have a verb phrase *tiao sheng* 'jump rope', it is clear that it is not the rope that is high, fast, or smart; and third, when talking about control, we usually mean cases where an understood argument of a complement or adjunct that is related to an explicit element instead of something covert.

Alternatively, we can argue that in descriptive sentences, *de* is like a nominalizer, turning P1 into a nominal subject and P2 is the main adjectival predicates, offering a description of P1, as shown in (459)[20]. Now *ta* 'he', not being the subject anymore, originates in an aboutness Topic position, higher than the subject topic *xie-de* 'writing'. (459) can be paraphrased as 'speaking of him, his writing is good.' Actually, as shown in (460), P1-*de* can be a subject without the pronominal topic:

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[20] Li (1990) also gives the following examples to show that P1 might be the main predicate, because modals and adverbs show up between the subject and P1, a position reserved for primary predicates.
(i)   Wo neng tiao de   hen gao.
                I   can   jump Nomi very high
                'I can/could jump very high.'
(ii)   Wo chang tiao de   hen gao.
                I   often   jump Nomi very high
                'I often jump very high.'
Most of the native speakers I consulted with found (i) and (ii) not very acceptable; instead, they like to put modals and adverbs before P2 as in (iii) and (iv):
(iii)   Yaoshi meiyou feng, wo tiao de   hui   hen gao.
                if   no   wind I   jump Nomi would very high
                'If there is no wind, I would jump very high.'
(iv)   Wo tiao de   changchang guo gao.
                I   jump Nomi often   too high
                'I often jump too high.'

(459)   Ta xie   de   hen hao/kuai/zhengqi.
        he write Nomi very good/fast/neat
        'He writes/wrote very well/fast/neatly.'
or: 'His writing is/was very good/fast/neat/'

```
              TopicP
             /      \
          ta        TopicP
          he        /     \
               xie-deᵢ      VP
               write       /  \
                      proᵢ      V'
                              /    \
                            hen     hao
                            very    good
```
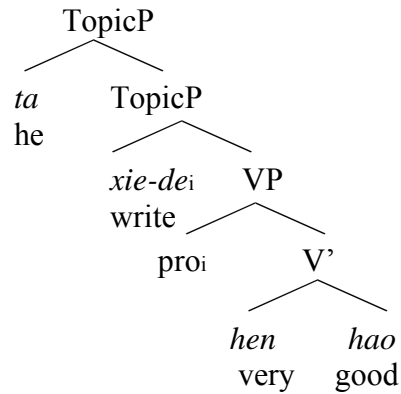
(460)   Xie   de   hen hao.
        write Nomi very good
        'The writing is good' or 'It is well-written.'

In (459), we have two TopicP's, one for aboutness *ta* 'he' and one for subject *xie-de* 'writing'. I also suggest that the ordering of these aboutness topics and subject topics is fixed; i.e. the former precedes the latter; as shown by the contrast between (461) and (462):

(461)   Luoshanji   jiaotong shi yige wenti.
        Los Angeles traffic   be a   problem
        'Speaking of Los Angeles, traffic is a problem.'

(462)   *Jiaotong Luoshanji   shi yige wenti.
        traffic   Los Angeles be a   problem
        'Speaking of Los Angeles, traffic is a problem.'

By the same token, descriptive (463) is ungrammatical because of placing aboutness topic *ta* 'he' after subject topic *xie de* 'write'.

(463) *Xie   de   ta hen hao.
         write Nomi he very good
        'His writing is/was very good.'

Analyzing *de* as a nominalizer and P2 as the main predicate is consistent with many of the properties of descriptives that we have observed; for example, in a descriptive A-not-A question, it is P2 that acts as A, i.e. the stative verb that is raised to habitual AspP° for A-not-A formation as shown in (464):

(464) Ta xie de   hao bu   hao?
       he write Nomi good INeg good
       'Does/did he write well?'

TopicP
├─ *ta* / he
└─ TopicP
   ├─ *xie-de*
   └─ CP
      ├─ [*hao*ᵢ *bu*]ⱼ
      └─ NegP
         └─ Neg'
            ├─ tⱼ
            └─ AspP
               └─ Asp'
                  ├─ [*hao*ᵢ / good]
                  └─ VP
                     └─ V'
                        └─ V
                           └─ tᵢ
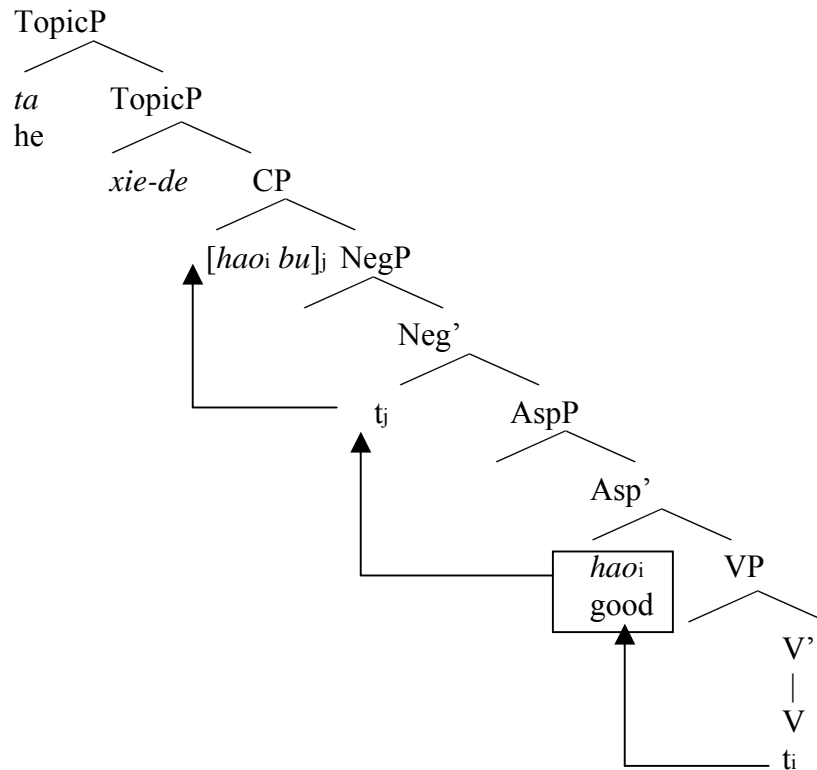
Second, as we have discussed in 2.2.2.2.4.2, adjectives are actually stative verbs in Mandarin, which can function as main predicates preceded by the obligatory intensifier *hen* 'very', and negated with the individual-level negator *bu* (Li and Thompson, 1981), as shown in (465) and (466):

(465) Ta hen hao/kuai.
       he very good/fast
       'He is good/fast.'

(466) Ta bu hao/kuai.
       he not good/fast
       'He is not good/fast.'

In descriptive structures, it is the adjectival P2, instead of P1 *xie* 'to write', which is negated with *bu* as shown in (467), which shows the main predicate status of P2:

(467) Ta xie de   bu   hao.
      he write Nomi INeg good
      'He does/did not write well.'

(468)a and (468)b are both ungrammatical for the wrong location of the negator:

(468) a.   *Ta bu   xie   de   hao.
             he INeg write Nomi good
             'He does not write well.'

       b.   *Ta mei xie   de   hao.
              he INeg write Nomi good
             'He did not write well.'

The intensifier *hen* is used before P2 in descriptives, as shown in (469), which proves the main predicatehood of P2:
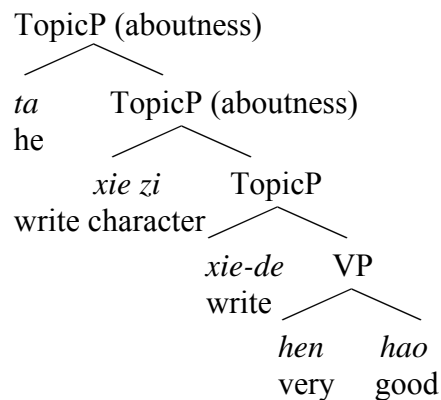

(469) Ta xie de   hen hao.
      he write Nomi very good
      'He does/did not write well.'

Third, P1 nominals are deverbalized already, and therefore no aspectual marking is possible within P1, cf. as shown in (470) through (472):

(470) *Ta xie   le   de   hen hao.
       he write Perf Nomi very good
       'He wrote very well.'

(471) *Wo zai xie   de   hen hao. cf.   Xianzai, wo xie   de   hen hao.
       I   Prog write Nomi very good   now   I write Nomi very good
       'Now, I am writing well.'

(472) *Wo xie guo   de hen hao.   cf.Yiqian, wo xie de   hen hao.
        I   write ExpAsp Nomi very good   before I   write Nomi very good
       'I used to write very well.'

Fourth, when an object needs to be identified, for example, what he is good at writing are characters, as in (473), P1-copying happens. This is a result of the nominalized P1 *xie* 'write' being unable to assign case and therefore another aboutness Topic, a VP *xie zi* 'write character', to make case-assigning to the object available. The VP aboutness topic can either precede or follow the aboutness topic *ta* 'he'; compare (473) and (474)

(473) Ta xie   zi   xie de   hen hao.
       he write character write Nomi very good.
       'He writes/wrote characters very well.'


```
       TopicP (aboutness)
         /        \
      ta      TopicP (aboutness)
      he          /      \
            xie zi       TopicP
      write character    /    \
                    xie-de     VP
                    write     /   \
                          hen      hao
                          very     good
```

190

(474) Xie zi,   ta xie de   hen hao.
       write character he write Nomi very good
       'Writing characters, he is good.'

```
        TopicP (aboutness)
         ╱╲
   xie zi   TopicP (aboutness)
write character ╱╲
           ta        Topic
           he         ╱╲
              xie-de      VP
              write      ╱╲
                    hen      hao
                    very     good
```
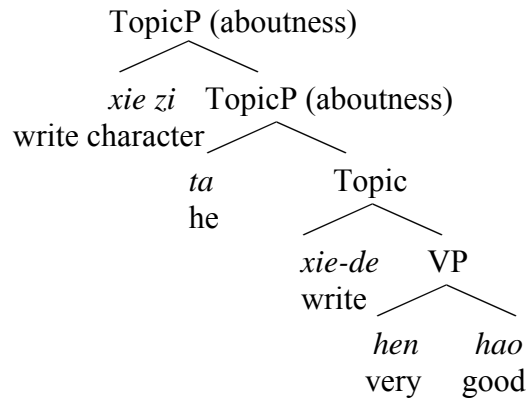
Another advantage of arguing P2 to be the stative main predicate in Class III is that now we can explain why (475) is not grammatical, but (476) is; i.e. the usually optional object topicalization process seems to be obligatory in a descriptive Class III structure; as shown by (477) and (478). In (476), *qingchu* 'clear' is stative and therefore intransitive and, as a result, cannot take an object like *zhege zi* 'this character'. In (475), however, *zhege zi* 'this character' shows up in the left-periphery indicating aboutness topic, free from being assigned theta-roles by the verb *xie* 'to write':

(475) *Wo kan de   hen qingchu zhege zi.
        I   look Nomi clear   this   character
       'I see / saw this character very clearly.'

(476) Zhege zi,   wo kan de   hen qingchu.
       this   character I   look Nomi very clear
       'I see / saw this character very clearly.'

(477) Wo kan zheben shu.
       I   read this   book
       'I read this book.'

(478)   Zheben shu, wo kan.
        this   book I   read
        'This book, I read.'

What follows is that now we can explain why in descriptive Class III sentences like (476), pro-drop is not possible, as shown in (479), especially considering that Mandarin has the null-subject parameter as shown in (480).   The reason is that *this character* 'this character' is an aboutness-type but not argument-type topic, because P2 *qingchu* 'clear' is not able to assign case.   Consequently, (479) needs a subject to avoid pragmatic confusion by indicating that *zhege zi* 'this character' is not an object or subject, but aboutness topic.

(479)   Zhege zi   *(wo) kan de   hen qingchu.
        this character   I   look Nomi very clear
        'This character, I see/saw it very clearly.'
Pro-drop possible if means:
        'This character sees/saw very clearly.'

(480)   Chi fan le   ma?
        eat meal Perfective Y/N
        'Did you eat?

I suggest that in Mandarin, aboutness topic must be combined with an argument topic as shown in (481), in which, *Xialuoteweier* 'Charlottesville' is the aboutness topic and must be combined with a subject topic, *lishi* 'history':

(481)   a.   Xialuoteweier lishi   hen chang.
                Charlottesville history very long
                'Charlottesville, its history is very long.'

192

b.   *Xialuoteweier hen chang.
          Charlottesville very long
        'Charlottesville is very long'
        *'Charlottesville, its history is very long.'

Actually, Audrey Li (1990) also draws an analogy between *de* in Class III and the nominal *de* that marks genitive case and functions as the complementizer in relative clause as we have seen in 7.4.3 and 7.6.1. (482) and (483) are examples of Mandarin relative clause and genitive case marking, both with *de* involved.

(482)   Wo mai de   yifu   hen xiao.
        I   buy Relative.Complementizer clothes very small
        'The clothes that I bought are very small.'

(483)   Wo de   yifu   / tamen de   yifu
        I   Genitive.Case clothes / they   Genitive.Case clothes
        my clothes   their clothes

Based on their connections with nouns, the nominalizer *de*, relative clause complementizer *de*, and genitive case marker *de* can be somehow related. It is actually a common phenomenon cross linguistically to have the same particle for nominalizer and relative complementizer.

In fact, before the New-Culture Movement in the early 20th century, there is no distinction between the two *de*'s, i.e. *de* in Class III and the relative clause complementizer *de*, in orthography.

After seeing the connection between nominalizer *de* and the relative clause complementizer *de*, we can also link the latter to the resultative clause complementizer *de*

that is found in resultative and causative Class III, since they both function to introduce clauses. Thus, we can claim that the *de*'s in Class III descriptive structures, resultative structures, and causative structures are can be traced back to the same particle.

The *DE* in potential Class II, however, does not seem to be related to the nominal and complementizer *de*.

7.8   A-not-A for Class III

We have divided Class III into descriptives, resultatives, and causatives. We have demonstrated how descriptives form A-not-A questions, exactly as we have seen for A-not-A questions with statives, as shown in 4.6, P2 being the main predicate and P1 the subject nominalized by *de*. The disappearance of the intensifier *hen* before stative VP, cf. (484) and (486), supports our analysis that *kuai* 'fast' is no longer in VP, but in IP, taking part in A-not-A formation, as shown in (485).

(484)   Zhangsan pao de   kuai bu   kuai?
        Zhangsan run Nomi fast INeg fast
        'Does/did Zhangsan run fast?'

(485)   Zhangan pao de   hen kuai.
        Zhangsan run Nomi very fast
        'Zhangsan runs/ran very fast.'

(486)   *Zhangsan pao de   hen kuai bu hen kuai?
        Zhangsan run   Nomi very fast not very fast
        'Does/did Zhangsan run fast?'

Since resultative and causative Class III structures are bi-clausal structures, not capable of forming A-not-A questions, we will not discuss them in this section.

7.9   Topicalization and Pro-Drop in Different Classes

As is seen from (487) and (488), in Class I and Class II, the P2 merging into CausP, which is realized as either P1 or a null head, enables an intransitive P2 like *qingchu* 'clear' to assign case. Such P2 raising can also be seen from the lack of intensifier *hen* 'very', the diagnosis for whether a stative is still at VP level or not, as we have discussed in 2.2.2.2.4.2.   Compare the grammatical (a)-sentences and the ungrammatical (b)-sentences. As seen from the (c)-sentences, pro-drop is possible in Class I and Class II that have object topicalization.

In descriptive Class III (489), the stative P2 *qingchu* 'clear' does not undergo merging, but remaining at VP as signaled by the use of *hen*; the cost therefore is that it cannot have its object as shown in (a); unless the object appears as an aboutness topic that does not have theta-role assigned from *qingchu* 'clear', as shown in (b). Pro-drop is not possible in sentences with object topicalization, as shown in (c), the reason being, as we have discussed in 7.7.2, that aboutness topic must be followed by a subject topic, which prevents the subject from being dropped:

(487)   Class I: (a)   Wo kan-qingchu zhege zi   le.
                                        I   look clear   this   character CRS
                                        "I have seen this character clearly.'

                             (b)   *Wo kan-hen-qingchu zhege zi le.

                             (c)   Zhege zi,   (wo) kan-qingchu le.
                                       this   character I   look-clear   CRS
                                       'This character, I have seen clearly.'

(488)   Class II: (a)   Wo kan-de-qingchu zhege zi.
                                      I   look-DE-clear   this character
                                      'I can see this character clearly.'

                                (b)   Wo kan-de-hen-qingchu zhege zi.

                                (c)   Zhegezi, (wo) kan-de-qingchu.
                                      this   I   look-DE-clear
                                      'This character, I can see clearly.'

(489)   Class III: (a)   *Wo kan de   hen qingchu zhege zi.
                                      I   look Nomi very clear   this character
                                      'I see/saw this character very clearly.'

                                (b)   Zhege zi,   wo kan de   hen qingchu.
                                      this   character I   look Nomi very clear
                                      'This character, I see/saw it very clearly.'

                                (c)   *Zhege zi,   kan de   hen qingchu.
                                      this   character look Nomi very clear
                                      *'This character, I see/saw it very clearly.'
                 Ok if it means: 'This character can see very clearly.'

7.10 A Summary of Mandarin Resultatives and Causatives

Now, we have encountered various uses of the terms resultative and causatives. In Class I and Class II, we have resultatives that usually do not have objects, except for the case of *kanjian* 'see' and causatives that have objects. Class I resultatives and causatives, being accomplishments or achievements, must co-occur with modal, aspectual or CRS marking. Class II resultatives and causatives are accomplishments and achievements too but are peculiar in being those with potential reading and have serial verb constructions.

196

In Class III, resultatives mainly involve bi-clausal structure that has subject-control or complex-clausal structure with focus marking in P2; causatives are ECM structures.

7.11 Conclusion

In this chapter, I single out descriptive structures from the rest of the P1-*de*-P2 structures. I argue that descriptives, with their individual-level P2, are not complex-predicate structures. They have nominalized P1 subject and P2 is the main predicate, which can be testified from their negation, A-not-A question formation, P1-copying, and obligatory aboutness topicalization.

The other two groups in P1-*de*-P2 structures are resultatives and causatives, with clausal stage-level P2. Resultatives have subject-control, as Huang (1988) has argued. Causatives are complex clausal structures, when they have focus-marking in P2; otherwise they have ECM structures (Gu and Pan, 2001). I further argue that *de* in resultatives and causatives is a complementizer, introducing a resultative clause. The *de* complex-predicate structure is similar to English 'that' in 'so…that' structure. *De* in ECM structure is responsible for exceptional case assigning, on par with English prepositional complementizer 'for' that introduces infinitival complement.

Resultatives and causatives in Class I refer to V-V compounds. Resulatives and causatives in Class III refer to those bi-clausal structures.

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