The Syntax of Answers to Yes/No Questions in Mandarin

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Abstract

This thesis discusses answers to yes/no questions in Mandarin from the perspective of syntax.

It describes yes/no questions and answers especially the fragment answers in Mandarin according to their forms and structures. The fragment answers to yes/no questions can employ either echo answers or particle answers, and the particle answers *en* and *eñ* can follow either the truth-based answer system or the polarity-based answer system. A fragment answer is derived from its full sentential answer in which there is a strong interpretable [Focus] feature on the Focus Phrase(FocP) which is in the highest position in the domain of the CP. The focus of a yes/no question is the variable polarity. The strong interpretable [Focus] feature attracts the PolP with the [*u*Focus] feature to the specifier of the FocP to check the unvalued [Focus] feature. The TP is deleted first with several ellipses followed gradually.

This thesis, not only describes yes/no questions and answers in Mandarin based on their forms respectively, but also researches the syntactic derivation of answers to yes/no questions in Mandarin. Furthermore, it also contributes to the syntactic research on *de* structures in yes/no questions and answers.

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Declaration

This thesis has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree other than Doctor of Philosophy of the University of York. This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by explicit references.

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Chapter 1

Introduction

1.1 The Overview of Yes/No Questions and Answers in Mandarin

The yes/no question is a type of question, which is answered by affirmation or negation from the interlocutors (Quirk et al., 1985, p. 806, Chap. 11). Mandarin also has yes/no questions. Examples 1 and 2 are a comparison between a yes/no question in English and a yes/no question in Mandarin.

(1) Q: Do you want to go with me?
    A: Yes./No.

(2) Q: ni   xiang he   wo yiqi   zou ma?
       you want and I   together go   Q
    'Do you want to go with me?'

    a. A: xiang./ bu xiang.
              want/   not want
        'Yes./ No.'

    b. ? A: shi./ bu shi.
              be/   not be

'Yes./ No.'

In above examples 1 and 2, there are many differences between the answers to the yes/no questions in English and Mandarin. The question is structured in English with the auxiliary *do* appearing before the subject. That is, the yes/no question in English is formed by Subject-Auxiliary Inversion and do-support; whereas, the yes/no question in Mandarin is formed by attaching an interrogative particle *ma* to the end of a statement. Regarding the answers, the yes/no question in English is answered by a particle *yes* or *no* to express affirmation or negation. In Mandarin, the yes/no question in example 2 could be answered by echoing the main verb '*xiang*(want)' in the question with the polarity to express affirmation or negation, such as in example 2a. In addition, the answers to yes/no questions in Mandarin can be expressed by particles as well. For example, '*shi*' and '*bu shi*' are regarded as an affirmative particle and a negative particle in example 2b.

The existing research on the yes/no question in Mandarin mainly focuses on the yes/no questions themselves, as in Cheng (2001), Cheng (2002), Wang (2011), Si (2012) and Wang and Xu (2014), or compares the surface structures of the yes/no questions between Mandarin and other languages, as in Bu (2012). Little research discusses the answers to yes/no questions or investigates the syntactic derivation of the answers to yes/no questions in Mandarin.

In the English example 3 below, the polarity of the particle answer *yes*(Aff) or *no*(Neg) corresponds with the polarity in the following full sentential answer. In the Mandarin example 4 below, the affirmative particle answer in 4a is followed by a negative full sentential answer. The negative particle *eñ* is followed by the affirmative sentential expression in answer 4b, but it can also be followed by a negative full sentential answer, such as 4c. Why are the particle answers in the opposite polarities with the following full sentential answers? Why can both the affirmative and the negative full sentential answers follow the negative particle *eñ* in Mandarin? How can the full sentential answers be shortened to *zhanshi*(present) and *bu zhanshi*(not present) as the answers?

   (3)   Q: Won't you present your research at the conference?

a. A: Yes(, I will present my research at the conference).

b. A: No(, I won't present my research at the conference).

(4) Q: zai huiyi   shang, ni bu zhanshi ni de yanjiuchengguo ma?
       at conference on   you not present you of research   Q
    'Won't you present your research at the conference?'

   a. A: en, (zai huiyi   shang,) (wo) bu zhanshi (wo de yanjiuchengguo).
            Aff (at conference on)   (I)   not present (I   of research)
         'No, I won't (present my research at the conference).'

   b. A: eñ,   (zai huiyi   shang,) (wo) zhanshi (wo de yanjiuchengguo).
            Neg (at conference on)   (I)   present (I   of research)
         'Yes, I will (present my research at the conference).'

   c. A: eñ,   (zai huiyi   shang,) (wo) bu zhanshi (wo de yanjiuchengguo).
            Neg (at conference on)   (I)   not present (I   of research)
         'No, I won't (present my research at the conference).'

Holmberg (2016) states that answers to yes/no questions all have sentential structures, and the fragment answers, such as the particle *yes/no* and echo verbs, are derived by ellipsis from their full sentential structures. In this thesis, I maintain this stance and research the answers to yes/no questions in Mandarin.

According to Holmberg (2016, pp. 191-197, Chap. 4), the particle answers in Mandarin, such as the particles '*en*' and '*eñ*' in 4, are derived by deleting PolP or CP and leaving the particles to the left of the PolP or CP as the particle answers. Regarding the echo answers, Holmberg (2016, pp. 73-79, Chap. 3) argues two analyses about the derivation of the ellipsis: one is pro-drop and VP-ellipsis, and the other is the verb or VP movement out of TP, with ellipsis of the remnant TP. Based on Holmberg (2016, pp. 79-90, Chap.

3), the verb-echo answers in Mandarin are derived by pro-drop and VP-ellipsis. However, Holmberg (2016, pp. 191-197, Chap. 4) only discusses a modal verb-echo answer as the Chinese example in his research. More conditions for verb-echo answers need to be considered. For example 5, the yes/no question contains two verbs, qu(go) and mai(buy), and both of these can be solo echoed as the echo answer to the yes/no question, such as in 5a and 5b, below.

(5) Q: ni   qu Tesco mai niunai ma?
        you go Tesco buy milk   Q
     'Are you going to Tesco to buy milk?'

    a. A: qu./ bu qu.
           go/ not go
        'Yes./ No.'

    b. A: mai./ bu mai.
           buy/ not buy
        'Yes./ No.'

Moreover, the answers to yes/no questions in Mandarin not only can echo the main verb or the modal verb in the question, but also can echo other words in the question to be the echo answers, such as the adjective-echo answers in example 6. The yes/no question in 6 contains a verb xia(fall) and an adjective da(heavy). However, the answer only echoes the adjective da(heavy) with the polarity as the echo answer in 6a. Echoing the verb is not acceptable for the answer in 6b. Furthermore, verbs are not necessary in a sentence in Mandarin. Some sentences do not contain a verb, such as example 7. Thus, there is no way for the answer to echo a verb as the echo answer.

(6) Q: yu   xia de da   ma?
        rain fall DE heavy Q
     'Does it rain heavily?'

a. A: da./   bu da.
        heavy/ not heavy
    'Yes./ No.'

b. * A: xia./ bu xia.
        fall/ not fall
    'Yes./ No.'

(7) Q: ni   lei   ma?
        you tired Q
    'Are you tired?'

A: lei./   bu lei.
    tired/ not tired

    'Yes./ No.'

1.2   The Research Questions

This thesis researches yes/no questions from the perspective of the answer system in Mandarin and builds a theory for the syntactic derivation of the answers to yes/no questions.

This thesis will take the theory in Biezma and Rawlins (2012) on what the syntax of questions is. According to Biezma and Rawlins (2012), a yes/no question puts forward a proposition which can be either positive or negative, combined with an operator which 'raises an issue' regarding the truth of the proposition. What needs to be mentioned is that this theory adopted in this thesis does not take A-not-A questions into account. The A-not-A questions in this thesis, is regarded as not putting forward a proposition but a sentence with a polarity variable. Namely, in an A-not-A question, the sentence denotes a set of two propositions p and not p, inviting the interlocutor to say which value yields a true proposition. This theory is quoted from Holmberg (2016).

Based on Holmberg (2016), this thesis considers more examples to examine whether Holmberg (2016)'s theory can explain the various phenomena of yes/no questions and answers in Mandarin. Furthermore, I propose my analysis and theory regarding the question of how the shortest fragment answers including both echo answers and particle answers are derived in Mandarin for yes/no questions.

1.3   Outline of the Thesis

This thesis proceeds as follows:

Chapter 2 and Chapter 3 describe yes/no questions and answers in Mandarin. Chapters 4 to 7 discuss the syntactic derivation of the answers to yes/no questions in Mandarin.

Chapter 2 describes yes/no questions in Mandarin. The chapter mainly describes five types of yes/no questions in Mandarin based on their forms: yes/no particle questions, A-not-A questions, tag questions, intonation yes/no questions and yes/no questions ending with the negation.

Chapter 3 describes the answers to yes/no questions in Mandarin. Mandarin applies both the particle answer system and the echo answer system, which are distinguished by the form of the answers. In the particle answer system, the answers to yes/no questions employ the particles *en* and *eñ* as the affirmative particle answer and the negative particle answer, respectively. For the echo answer system, I describe seven types of echo answers in Mandarin according to the part of speech of the word in the echo answer. Also, I present the phenomenon that the answers, especially the negative answers to the yes/no questions, can be answered in either the polarity-based answer system or the truth-based answer system.

Chapter 4 introduces the Focus Phrase(FocP). I propose that there is a strong interpretable Focus feature on the Focus head in the echo answer to a yes/no question. The strong interpretable Focus feature attracts the unfocused variable PolP to the specifier of the FocP.

Chapter 5 analyses echo answers to yes/no questions in Mandarin. I mainly present the Holmberg (2016) analysis and I argue that there are many phenomena in Mandarin that cannot be explained by his analysis. Several types of echo answers are derived based on the positions of the focused variable polarity in echo answers.

Chapter 6 analyses echo answers to yes/no questions that contain the de(得) structure in Mandarin to affirm my core theory regarding the Focus Phrase(FocP) and the [Focus] feature and further build my theory in this thesis. I describe the two types of de(得): the degree de and the ability de. The two types of de(得) have different structures and usages in yes/no questions, which lead to different types of echo answers in Mandarin. I propose the syntactic derivation of the de(得) structures in the full sentential answers. Based on my core theory of this thesis, I further propose the derivation of echo answers to yes/no questions containing the de(得) structure in Mandarin.

Chapter 7 analyses the particle answers to yes/no questions in Mandarin. I review the analyses of the particle answers in English and Mandarin by Holmberg (2012, 2016). For the particle answers that could employ both the polarity-based answer system and the truth-based answer system in Mandarin, I present my proposition for the derivation.

Chapter 8 concludes this thesis. I state the core theory of this thesis and summarise the application of my theory for the derivation of the answers for yes/no questions in Mandarin. In addition, I suggest some directions for research in the future.

1.4   About the Data in this Thesis

This thesis discusses the answers to yes/no questions in Mandarin, mainly focusing on daily expressions in both the oral language and the written language to avoid environmental influence, such as the occupation or the personal language custom of the speakers.

All the examples used in this thesis are from daily conversations by Mandarin native speakers, and the examples have been confirmed by at least 10 native speakers to avoid person-

alised expression in language.

Chapter 2

Description of Yes/No Questions in Mandarin

2.1   The Types of Yes/No Questions in Mandarin

In yes/no questions, the interrogative feature marks the sentence as a yes/no question. Example 8 is a yes/no question in English. The interrogative [Q] feature on C marks this sentence as a question, and the C with the strong [Q] feature without the unvalued [wh] feature indicates the sentence is a yes/no question. The sentence undergoes Subject-Auxiliary Inversion and do-support to satisfy the strong [Q] feature on C to form the yes/no question in English.

(8)   Q: Do you mind attending a party with me?
     A: Yes./No.

(9)   ta de lilun   shi cuode.
    he of theory is wrong
     'His theory is wrong.'

(10) ta de lilun   shi cuode ma?
     he of theory is wrong Q

'Is his theory wrong?'

(11) ta de lilun   shi bu shi cuode?
      he of theory is not is   wrong
       'Is his theory wrong or not?'

(12) ta de lilun   shi cuode, dui   ma?
      he of theory is   wrong right Q
       'Is it true that his theory is wrong?'

(13) ta de lilun   cuo   le   mei?
      he of theory wrong ASP   not
       'Is his theory wrong?'

In Mandarin, examples 10 to 13 are all yes/no questions, and they are questioning the same thing – all are asking 'whether his theory is wrong', but they have different surface structures. The corresponding declarative sentence is example 9. Compared with the declarative sentence, the yes/no question in example 10 has a *ma* at the end of the declarative sentence. In example 11, the verb *shi*(be) is followed by its negative form '*bu shi*(not be)'. The declarative sentence in example 9 can be followed by a tag to form a yes/no question, as in example 12, and, in example 13, it is a negation *mei*(not) that follows the declarative sentence to form a yes/no question. Thus, there are various ways to form yes/no questions in Mandarin.

Therefore, based on the ways to form a yes/no question, there are several types of yes/no question in Mandarin discussed in this chapter:

1. yes/no particle questions, including the yes/no question particles *ma* and *ba*

2. A-not-A questions

3. tag questions

4. intonation questions

In addition, there is one special yes/no question phenomenon that deserves to be discussed: the yes/no question ending with negation.

2.2 Yes/No Particle Questions

The most common type of yes/no question in Mandarin is the yes/no particle question, which is formed by a yes/no question particle.

2.2.1 The yes/no question particle *ma*

Superficially, the yes/no question particle is simply attached to the end of a declarative sentence. Example 14 is a yes/no question formed by the Mandarin yes/no question particle *ma*, which is mentioned by Huang et al. (2009, p. 238, Chap. 7). As a yes/no question particle, *ma* can only be used in yes/no questions (Lu, 1984; Liu, 1988; Bu, 2012; Liu, 2014). More examples of *ma* are found in examples 15 to 17. In these *ma* yes/no questions, the clause-final intonation can be either a rising pitch or a falling pitch (Bu, 2012, pp. 11-12, Chap. 2).

(14) Q: ni   xihuan yuyanxue ma?
          you like   linguistics Q
        'Do you like linguistics?'

(15) Q: ni   e   le   ma?
          you hungry APS Q
        'Are you hungry?'

(16) Q: ni xie   wan lunwen le   ma?
          you write finish paper ASP Q
        'Did you finish your paper?'

(17) Q: ni   you jintian yuyixue kecheng de jiangyi ma?
          you have today semantic class   of slides Q
       'Do you have the slides for the semantic class today?'

2.2.2   The yes/no question particle *ba*

There is another yes/no question particle *ba*, which can also form yes/no questions in Mandarin by being attached to the end of a declarative sentence, such as in examples 18 and 19. The yes/no questions with the yes/no question particle *ba* are slightly different from the *ma* yes/no questions. The yes/no question with the yes/no question particle *ma* has no preference regarding either an affirmative answer or a negative answer. However, the speakers usually have an expectation of certain answers when the yes/no question is formed by the *ba* interrogative particle. For example, in example 18, the speaker would like to receive an affirmative answer to confirm his or her belief that 'the interlocutor likes linguistics'. Example 19 is a negative yes/no question formed by the interrogative particle *ba*. The speaker expects the negative answer – '*mei you*(not have)' – from the interlocutor to confirm that the interlocutor has not married.

(18) Q: ni   xihuan yuyanxue ba?
          you like   linguistics Q
       'You like linguistics, don't you?'

(19) Q: ni   hai mei you jiehun ba?
          you still not have marry Q
       'You still haven't married, right?'

However, the particle *ba* can be used in not only yes/no questions, but also declarative sentences and imperative sentences (Lu, 1984; Liu, 1988; Bu, 2012; Liu, 2014). Therefore, it is important to distinguish the *ba* yes/no question from the *ba* declarative sentence and the *ba* imperative sentences.

(20) zheme wan le,   na   jia shangdian yijing   guan men le   ba.
     so   late ASP that CL store   already close door ASP BA
       'It is so late. That store has already been closed.'

(21) genju   tade kouyin, wo cai,   ta shi beifangren ba.
     according-to his   accent I   guess he is   northerner BA
       'According to his accent, I guess, he is a northerner.'

In both examples 20 and 21, the particle *ba* is attached to a statement, still being a declarative sentence. Superficially, the structures of the sentences in 20 and 21 are the same as the *ba* yes/no questions in 22 and 23 below. In addition, this type of declarative *ba* sentences, such as examples 20 and 21 in this thesis, are ended with full stops. As declarative sentences, they do not require any answers. However, this type of *ba* sentences can be written with a question mark. Examples 20 and 21 can be like examples 22 and 23 with the question marks. The *ba* sentences with the question marks in 20 and 21 are *ba* yes/no questions, and they are asked for answers from interlocutors.

(22) Q: zheme wan le,   na   jia shangdian yijing   guan men le   ba?
        so   late ASP that CL store   already close door ASP BA
       'It is so late. That store has already been closed?'

    A: guan le./   mei guan.
       close ASP/ not close

    'Yes./ No.'

(23) Q: genju   tade kouyin, wo cai,   ta shi beifangren ba?
        according-to his   accent I   guess he is   northerner BA
       'According to his accent, I guess, he is a northerner?'

    A: shi./ bu shi.
       be/ not be

'Yes(, he is)./ No(, he isn't).'

Thus, the superficial structures of the sentence in examples 20 and 21 are the same as the superficial structure of the *ba* yes/no questions in examples 22 and 23. This thesis refers to this type of *ba* non-yes/no questions as *ba* declarative sentences. In written form, if a *ba* sentence ends with a question mark, it clearly displays that the *ba* is a yes/no question particle and the sentence is a *ba* yes/no question. However, since *ba* is always in the falling tone, the *ba* yes/no question and the *ba* declarative sentence cannot be distinguished in oral conversation from the perspective of phonology. The type of the sentence can only be identified by the pragmatic function of the particle *ba*.

In the following examples 24 and 25, there are two imperative sentences ended with *ba* individually. If the *ba* is deleted, the sentence would still be an imperative sentence. The particle *ba* in the end of an imperative sentence will not change the sentence type. The imperative sentence ended with *ba* cannot be marked with a question mark to form an interrogative sentence either.

(24) yinyuehui mashang yao kaishi le,   kuaidian zou ba.
      concert   soon   will begin ASP quickly   go BA
        'The concert will begin soon. Let's go quickly.'

(25) ni   kanshangqu hen bu shufu,   qu yiyuan   kan yisheng ba.
      you look   very not comfortable go hospital see doctor   BA
        'You look very uncomfortable. You should go to the hospital to see the doctor.'

In *ba* yes/no questions, the yes/no question particle *ba* not only adds the interrogative feature to form the yes/no question, but also asks for confirmation from the interlocutor. The speaker has already made a truth-value judgement regarding the proposition, but is not certain about his or her truth-value judgement. Thus, the speaker uses the *ba* yes/no question to ask for confirmation regarding his or her proposition from the interlocutor. In example 18 which is relisted as 26 below, the speaker thinks that the interlocutor likes linguistics,

but the speaker is not absolutely sure. The *ba* yes/no question poses a yes/no question to the interlocutor and expects the interlocutor to confirm the speaker's proposition that the interlocutor likes linguistics.

(26) Q: ni   xihuan yuyanxue ba?
       you like   linguistics Q
    'You like linguistics, don't you?'

In *ba* declarative sentences, the particle *ba* attaches to statements or assertions, which weakens certainty of the speaker towards the statements or assertions. The *ba* declarative sentences only show the uncertain thinking of speakers, but the speakers do not ask for answers.

For example 20 relisted as 27 below, the context reveals that the time is very late. The speaker only argues that the store should have been closed already, who does not pose a question to check his uncertainty. There is no absolute requirement for answering the correctness. However, in the *ba* yes/no question example 22 relisted as 28 below, it is a yes/no question. The speaker is uncertain about whether that store is closed or not. However, since it is very late, the speaker guesses the store is already closed. In this way, the speaker asks in the *ba* yes/no question and hopes that the interlocutor could affirm his guess.

(27) zheme wan le,   na   jia shangdian yijing   guan men le   ba.
     so   late ASP that CL store   already close door ASP BA
    'It is so late. That store has already been closed.'

(28) Q: zheme wan le,   na   jia shangdian yijing   guan men le   ba?
       so   late ASP that CL store   already close door ASP BA
    'It is so late. That store has already been closed?'

    A: guan le./   mei guan.
      close ASP/ not close

'Yes./ No.'

Similarly, in example 21 which is relisted as 29 below, the speaker simply makes a speculation towards 'his' identity based on 'his accent', which is not a question, and the speaker does not expect any answer from the interlocutor.

(29) genju   tade kouyin, wo cai,   ta shi beifangren ba.
     according-to his   accent I   guess he is   northerner BA
         'According to his accent, I guess, he is a northerner.'

In *ba* imperative sentences, the particle *ba* attaches to imperative sentences themselves, which only weakens the command mood in imperative sentences.

For example 24 relisted as 30 below, the context reveals that there is a concert that will begin soon, and the speaker and the interlocutor will attend the concert. The speaker only poses the suggestion – 'let's go to the concert quickly in case we will be late'. If there is no particle *ba*, the sentence '*kuaidian zou*(hurry up)' will become a command instead of a suggestion.

Similarly, in example 25 relisted as 31, the speaker simply suggests that the interlocutor should see a doctor using the particle *ba* imperative sentence, which is not a question, and the speaker does not expect any answer from the interlocutor. The particle *ba* softens the command meaning.

(30) yinyuehui mashang yao kaishi le,   kuaidian zou ba.
     concert   soon   will begin ASP quickly   go BA
         'The concert will begin soon. Let's go quickly.'

(31) ni   kanshangqu hen bu shufu,   qu yiyuan kan yisheng ba.
     you look   very not comfortable go hospital see doctor   BA
         'You look very uncomfortable. You should go to the hospital to see the doctor.'

2.3 A-not-A Questions

The A-not-A question is a type of yes/no question in Mandarin that contains a word cluster in A-not-A form. The A in the A-not-A part is the predicate or a part of the predicate, and A-not-A means that the affirmative A form and the negative A form co-exist to form an A-not-A. In A-not-A questions, the A-not-A part provides the affirmative and negative variable polarities that contain the interrogative feature to form the yes/no question. A-not-A questions ask the interlocutor to choose one option from the affirmative and the negative options. The speaker does not have expectations regarding any particular answer.

For example 32, the '*chi bu chi*(eat not eat)' is the affirmative form and negative form of the main verb *chi*(eat). This A-not-A form poses the variable polarity that contains the interrogative feature to form a yes/no question. The A-not-A question does not express a preference for the answer.

(32)   Q: ni   chi bu chi hujiao?
            you eat not eat pepper
         'Do you eat pepper or not?'

        A: chi./ bu   chi.
            eat/ not eat

         'Yes./ No.'

Huang et al. (2009, pp. 253, Chap. 7) proposes that it is the A-not-A part in the question that takes an interrogative functional head, as shown in 33. The interrogative functional head Q places in the negation position in negative sentences.

(33)

```
                    TP
                   /\
                  /  \
               DP     \
              /  \     \
             /    \     \
            Q      VP
            |      /\
            |     /  \
        + A-not-A  V   DP
```
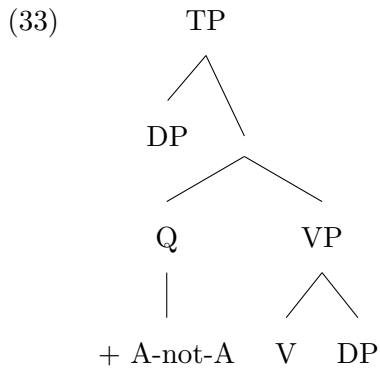
The A-not-A part, according to Huang et al. (2009, pp. 253, Chap. 7), is formed by morphologic reduplication. For example 32, the corresponding non-A-not-A affirmative declarative sentence would be like 34.

(34) ni   chi hujiao.
      you eat pepper
        'You eat pepper.'

The first part of VP is reduplicated, which turns into its corresponding negative form. That is, the verb '*chi*(eat)' in the VP '*chi hujiao*(eat pepper)' is reduplicated to form its negative form '*bu chi*(not eat)'. Then, the reduplicated negative form, namely 'not-A', is combined with the original part, namely 'A', to form the 'A-not-A' part in a sentence. In 34, combining the original verb '*chi*(eat)' and the reduplicated negative form '*bu chi*(not eat)' to be the A-not-A part '*chi bu chi*(eat not eat)' such as in the example 32.

In the A-not-A form, the A can be a verb, such as example 35, or an adjective, such as example 36.

(35) Q: ni   qu bu qu canjian mingtian xiawu   jufa   de yantaohui?
          you go not go join   tomorrow afternoon syntax of seminar
        'Are you going to join the syntactic seminar tomorrow afternoon?'

      A: qu./ bu   qu.
         go/ not go

'Yes./ No.'

(36) Q: wo pang bu pang?
         I   fat   not fat
      'Am I fat or not?'

      A: pang./ bu pang.
         fat/   not fat

      'Yes./ No.'

In detail, the A-not-A part can have more specific various structures. As with the verb in the A-not-A form, the A-not-A part can be VP-not-VP, V-not-VP and VP-not-V forms. A-not-A form can have more complex structures inside, but this thesis does not further discuss these more complex structures.

In example 37, both the affirmative A *he*(drink) and the negative A *bu he*(not drink) are followed by the DP *kafei*(coffee). Based on Huang et al. (2009, pp. 253, Chap. 7), it is the whole VP '*he kafei*(drink coffee)' being reduplicated to be the negative form '*bu he kafei*(not drink coffee)', and the whole reduplicated negative form is combined with the original affirmative VP to be the VP-not-VP form in 37.

(37) Q: ni   he   kafei bu he   kafei?
         you drink coffee not drink coffee
      'Do you drink coffee or not?'

      A: he./   bu he.
         drink/ not drink

      'Yes./ No.'

In example 38, only the negative A takes the DP. This V-not-VP form which is discussed above only reduplicates the verb in the VP to form the negative part 'not-V' which will be

further combined with the original verb to form the V-not-VP in the yes/no question.

(38) Q: ni he   bu he   kafei?
          you drink not drink coffee
       'Do you drink coffee or not?'

      A: he./   bu he.
         drink/ not drink

       'Yes./ No.'

In example 39, only the affirmative A takes the DP *kafei*(coffee). Firstly, the whole VP '*he kafei*(drink coffee)' is reduplicated to form its negative form '*bu he kafei*(not drink coffee)'. Secondly, the original VP is combined with the reduplicated negative VP as '*he kafei bu he kafei*(drink coffee not drink coffee)'. Thirdly, the second DP *kafei*(coffee) in the negative VP can be omitted because of reduplication. Then, the VP-not-V form is left in the yes/no question 39.

(39) Q: ni   he   kafei bu he?
          you drink coffee not drink
       'Do you drink coffee or not?'

      A: he./   bu he.
         drink/ not drink

       'Yes./ No.'

In the above examples regarding the V-not-VP and the VP-not-V, the DP is only taken by the VP in the A-not-A form. However, the verb can take a long complement, such as the yes/no question in example 40. The affirmative and negative polarities '*zhidao bu zhidao*(know not know)' are next to each other as V-not-V followed by a CP complement. However, in example 41, it seems that the affirmative V '*zhidao*(know)' takes the long CP

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complement, and the negative V '*bu zhidao*(not know)' moves to the end of the question. In fact, the example is the VP-not-V form, which is still a type of A-not-A form.

(40) Q: ni   zhidao bu zhidao you yi jia zhong   canting   zuotian   zai zanmen
        you know   not know   have one CL Chinese restaurant yesterday at our
    xuexiao pangbian kaiye le?
    school   beside   open ASP
      'Did you know that a Chinese restaurant opened next to our school yesterday or
    not?'

    A: zhidao./ bu zhidao.
       know/   not know

     'Yes./ No.'

(41) Q: ni   zhidao you yi jia zhong   canting   zuotian   zai zanmen xuexiao
        you know   have one CL Chinese restaurant yesterday at our   school
    pangbian kaiye le   bu zhidao?
    beside   open ASP not know
      'Did you know that a Chinese restaurant opened next to our school yesterday or
    not?'

    A: zhidao./ bu zhidao.
       know/   not know

     'Yes./ No.'

However, if the A-not-A part appears in an embedded clause in a sentence, it does not guarantee that the entire sentence is an A-not-A question, such as in examples 42 and 43. For example 42, the A-not-A part '*qu bu qu*(go not go)' is in the subordinate clause, and the main clause is a normal declarative sentence. Similarly, in example 43, there is an A-not-A part '*neng bu neng*(can not can)' in the subject clause and there is an A-not-A part '*you mei you*(have not have)' in the object clause, but the sentence is a declarative sentence.

(42) wo bu zhidao ta   mingtian qu bu qu bangongshi.
      I   not know   she tomorrow go not go office
         'I don't know if she will go to the office or not tomorrow.'

(43) bisai neng bu neng ying shi qujue   yu women you mei you xinxin.
      game can   not can   win be depend on we   have not have confidence
         'Whether the game can be won or not depends on whether we have confidence or
      not.'

2.4   Tag Questions

Mandarin has tag questions also, which are similar to tag questions in English, such as
example 44. This example demonstrates that tag questions in Mandarin consist of two
parts also: a statement and a tag.

(44) Q: bingxiang   li de dangao shi ni   mai de,   shi ma?
         refrigerator in of cake   be you buy PTCL be Q
         'The cake in the refrigerator was bought by you, wasn't it?'

2.4.1   The form of tag questions: the statement and the tag

A tag question is a type of yes/no question. The statement in a tag question, provides the
proposition of the tag question, and the tag provides the interrogative feature that forms
a yes/no question. As discussed previously, there are two ways to form a yes/no question
in the surface structures: adding the yes/no question particles and in the A-not-A form.
Therefore, the tags in tag questions can be in a form that contains a yes/no question particle
– *ma* or *ba*, or has an A-not-A form. For example, examples 45 and 46 convey the same
meaning; both are tag questions. In 45, the yes/no question particle *ma* is added to form
an interrogative tag. However, the tag in example 46 is in the A-not-A interrogative form
– '*dui bu dui*(right not right)'.

(45) Q: mei   tian zaochen manpao dui shenti hao, dui   ma?
         every day morning jogging for body good right Q
      'Jogging every morning is good for your body, isn't it?'

(46) Q: mei   tian zaochen manpao dui shenti hao, dui   bu dui?
         every day morning jogging for body good right not right
      'Jogging every morning is good for your body, isn't it?'

The tag contains the interrogative feature that forms a yes/no question, either in the form of adding a yes/no question particle, as in example 45, or in an A-not-A form, such as in example 46. However, the tag only provides the polarity variable, which is appended to the end of a statement. A tag question means that the interrogative feature in the tag requests that the interlocutor judges the affirmative or negative polarity of the statement; that is, the truth value of the statement. The tag itself does not contain actual meaning.

For example, it seems that the example 53 is a tag question that contains a statement and a tag in an A-not-A form '*chi bu chi*(eat not eat)', and the corresponding answer resembles an echo answer to a yes/no question. However, example 53 is not a tag question.

The tag in a tag question provides the interrogative feature to make the entire sentence a yes/no question, which only adds the polarity variable to the statement. Therefore, the tag is applicable to all statements. Namely, the tag is similar to the yes/no question particle that can be added to any statement to change a statement into a yes/no question. However, the 'tag' '*chi bu chi*(eat not eat)' in example 53 cannot be appended to other statements to form tag questions, such as in examples 47 to 49, since the 'tag' '*chi bu chi*(eat not eat)' contains the notional verb *chi*(eat). In a tag question, the tag itself does not contain actual meaning; it only provides the polarity variable.

(47) * Q: zuotian   mei xia yu, chi bu chi?
          yesterday not fall rain eat not eat
       'It didn't rain yesterday, eat or not?'

(48)   * Q: ni   jie   gei wo xie   qian,   chi bu chi?
           you lend to me some money eat not eat
       'You can lend me some money, eat or not?'

(49)   * Q: women xianzai milu le,   chi bu chi?
           we   now   lost ASP eat not eat
       'We are lost, eat or not?'

The correct corresponding tag questions to examples 47 to 49 are contained in examples 50 to 52. Even though the words in the tags are different – '*shi bu shi*(be not be)', '*xing bu xing*(do not do)' and '*dui bu dui*(right not right)' – they only provide the polarity, not the actual meanings.

(50)   Q: zuotian   mei xia yu, shi bu shi?
           yesterday not fall rain be not be
       'It didn't rain yesterday, did it?'

(51)   Q: ni   jie   gei wo xie   qian,   xing bu xing?
           you lend to me some money do   not do
       'You can lend me some money, can't you?'

(52)   Q: women xianzai milu le,   dui   bu dui?
           we   now   lost ASP right not right
       'We are lost now, aren't we?'

The tag in the question in example 53 is not a tag appended to the statement, but a sentential yes/no question after ellipsis. The full sentential question is in example 54. The front statement is an independent sentence, and the 'tag' '*chi bu chi*(eat not eat)' is in an independent yes/no question. The echo answer, which is the answer to the latter yes/no question, is unrelated to the front declarative sentence. In example 55, the tag is a correct tag that can be appended to the statement '*zhuozhi shang you yi ge pingguo*(There is an

apple on the table)' to make the sentence a tag question.

(53) Q: zhuozhi shang you yi   ge pingguo, chi bu chi?
         table   above have one CL apple   eat not eat
       'There is an apple on the table. Do you want to eat it or not?'

      A: chi./ bu chi.
         eat/ not eat

       'Yes(, I want to eat the apple)./ No(, I don't want to eat the apple).'

(54) Q: zhuozhi shang you yi   ge pingguo, (ni)   chi bu chi (na   ge pingguo)?
         table   above have one CL apple   (you) eat not eat (that CL apple)
       'There is an apple on the table. Do you want to eat that apple or not?'

      A: chi./ bu chi.
         eat/ not eat

       'Yes(, I want to eat the apple)./ No(, I don't want to eat the apple).'

(55) Q: zhuozhi shang you yi   ge pingguo, shi bu shi?
         table   above have one CL apple   be not be
       'There is an apple on the table, isn't there?'

      A: shi./ bu shi.
         be/   not be

       'Yes(, there is an apple on the table)./ No(, there isn't an apple on the table).'

However, in some A-not-A questions, the A-not-A part appears at the end of the questions, which is similar to the tag questions in which the tag is in A-not-A form in the superficial structure, such as in examples 56 to 59.

(56) Q: zhe ben shu   hao   bu hao?
         this CL book good not good
      'Is this book good or not?'

      A: hao./ bu hao.
         good/ not good

      'Yes(, it is good)./ No(, it is not good).'

(57) Q: zanmen mingtian qu haibian jian   beike,   hao bu hao?
         we   tomorrow go seaside pick-up seashell good not good
      'Let's go to the seaside to pick up seashells tomorrow. Is that good for you?'

      A: hao./ bu hao.
         good/ not good

      'Yes(, that is good)./ No(, that is not good).'

(58) Q: zhe dao ti   wo da   de dui bu dui?
         this CL question I   answer DE right not right
      'Is my answer to this question right or not?'

      A: dui./ bu dui.
         right/ not right

      'Yes(, it is right)./ No(, it is not right).'

(59) Q: yangguang, kongqi he   shui   dui shengming feichang zhongyao, dui   bu dui?
         sunshine   air   and water to life   very   important right not right
      'Sunshine, air and water are very important to life. Is that right?'

      A: dui./ bu dui.
         right/ not right

'Yes(, that is right)./ No(, that is not right).'

In both A-not-A questions and tag questions in which the tags are in A-not-A forms, it is the A-not-A part that provides the interrogative feature in the question. However, in A-not-A questions, the A-not-A part has the syntactic function also. Namely, the A-not-A part helps to make the entire sentence grammatical. In A-not-A questions, the A is a necessary constituent of the sentence. The A-not-A is the affirmative and negatives forms of the A, which provide the interrogative feature. In addition, the A is necessary to form the entire sentence with other constituents. Regarding a tag question, the statement in a tag question is a complete sentence, and the tag only provides the interrogative feature to make the entire sentence, namely the statement with the tag, a yes/no question. The tag does not affect the structure of the statement. Therefore, the A-not-A part is necessary to the A-not-A question. In other words, if the A-not-A part is deleted in the A-not-A question, the sentence is broken. However, if the A-not-A tag is deleted in a tag question, the remaining part is still a grammatical sentence; the statement is left as a declarative sentence when the A-not-A tag is deleted.

Examples 56 and 58 are A-not-A questions, and examples 57 and 59 are tag questions whose tags are in A-not-A forms. For examples 56 and 57, both the A-not-A parts '*hao bu hao*(good not good)' appear at the end of the questions. So, how to distinguish the functions of the A-not-A parts?

For example, in example 56, the A-not-A part '*hao bu hao*(good not good)' is the predicate of the sentence; if it is deleted, only the noun phrase '*zhe ben shu*(this book)' remains, which cannot form a complete and grammatical sentence. Therefore, the A-not-A part is a constituent of the sentence. The yes/no question in example 56 is an A-not-A question. Regarding example 57, if the A-not-A part '*hao bu hao*(good not good)' is deleted, the remaining part '*zan men mingting qu haibian jian beike*(let's go to the seaside to pick up seashells tomorrow)', can still form a grammatical declarative sentence. Thus, the A-not-A part is a tag. The question is a tag question in which the tag happens to be in the A-not-A form. Examples 58 and 59 work in the same way, even though the A-not-A part, '*dui bu dui*(right not right)', appears at the end of the questions in both examples, the A-not-A

part is a necessary constituent of the question in example 58, which cannot be deleted to form a grammatical sentence. The yes/no question in example 58 is an A-not-A question. However, the A-not-A in example 59 is a tag, which does not affect the structure of the statement in front of the A-not-A part. Therefore, the question in example 59 is a tag question.

What needs to be mentioned here is that the tag in the tag question can be a wh-word such as *zenmeyang*(how), as in example 60.

(60) Q: zanmen zhoumo yiqi   qu kan dianying, zenmeyang?
      we   weekend together go see movie   how
   'How about we go to watch a movie this weekend?'

    A: hao./ bu qu.
      good/ not go

    'Ok, let's go to watch a movie this weekend./ No, I don't want to go to watch a movie.'

Thus, the tag question is not a yes/no question but a wh-question. Even though the answer in example 60 resembles the answers to a yes/no question, which have an affirmative and a negative answer, it is not a yes/no question since the question does not only provide the affirmative and the negative choices to the interlocutor. The wh-word in the tag *zenmeyang*(how) asks the interlocutor to offer his or her opinion regarding the statement, and opinions can have many possibilities. Therefore, a tag question with a wh-word tag is not a yes/no question, and, therefore, is not be discussed any further in this thesis.

2.4.2 The polarities of the statement and the tag in tag questions

As discussed in Quirk et al. (1985, pp. 810-814, Chap. 11), there are three common formulae for tag questions in English according to the polarity and without considering the tone. These three formulae, based on the polarities of the statement and the tag, are listed

in 61. The corresponding examples are listed in examples 62 to 64.

(61)   1.   affirmative statement, negative tag? (+ , -)

2.   affirmative statement, affirmative tag? (+ , +)

3.   negative statement, affirmative tag? (- , +)

(62)   Q: He has messaged you, hasn't he?

(63)   Q: He has messaged you, has he?

(64)   Q: He hasn't messaged you, has he?

It is evident from the above formulae and examples that English does not contain tag questions in the formula of 'negative statement, negative tag?', such as in example 65. For English native speakers, the tag question in example 65 is unacceptable.

(65)   * Q: He hasn't messaged you, hasn't he?

Similarly, tag questions in Mandarin also have various formulae based on the polarities of the statement and the tag.

According to Quirk et al. (1985, pp. 810-814, Chap. 11), the different tones on the tags affect the different expectations of the speaker. Therefore, if the tag is in a rising tone, the speaker expects the interlocutor to judge the truth value of the proposition in the former statement. If the tag is in a falling tone, the speaker expects the interlocutor to confirm the proposition in the former statement. However, in Mandarin, the different expectations of the speaker are not conveyed by the tone of the tag, since Mandarin itself is a tone language. In Mandarin, the different expectations of the speaker are revealed in the polarity of the tag in a tag question. A tag with an affirmative polarity is a neutral yes/no question; the speaker has no preference regarding the affirmative or negative answer towards

the proposition in the former statement. The tag in an affirmative polarity only asks for the confirmation on the proposition of the former statement from the interlocutor. If the tag is in a negative polarity, the speaker has a preference regarding the answer. A tag with a negative polarity expects the interlocutor to confirm the proposition in the former statement.

Combining the affirmative and negative polarities of the statement and the tag, respectively, there are four formulae tag questions in Mandarin, as displayed in 66.

(66)   1.   affirmative statement, negative tag? (+ , -)

　　　2.   affirmative statement, affirmative tag? (+ , +)

　　　3.   negative statement, affirmative tag? (- , +)

　　　4.   negative statement, negative tag? (- , -)

- First formula: affirmative statement, negative tag? (+ , -)

In example 67, the statement is in an affirmative polarity and the tag is in a negative polarity. The proposition in the statement is, 'we have to submit this paper next Monday'. The speaker thinks the proposition is true, but she/he is not certain about the truth of the proposition. Therefore, the speaker appends the negative tag to make the sentence a yes/no question and expects confirmation on the proposition from interlocutor.

(67)   Q: women bixu   xia   zhouyi   jiao   zhe pian lunwen, bu shi ma?
　　　　　we   have-to next Monday submit this CL   paper   not be Q
　　　　'We have to submit this paper next Monday, don't we?'

　　　a. A: shi (, women bixu   xia   zhouyi jiao   zhe pian lunwen).
　　　　　　be (we   have-to next Monday submit this CL   paper)
　　　　　'Yes (, we have to submit this paper next Monday).'

　　　b. A: bu shi (, women mei biyao   xia   zhouyi jiao   zhe pian lunwen).
　　　　　　not be (, we   not have-to next Monday submit this CL   paper)

'No (, we don't have to submit this paper next Monday).'

- Second formula: affirmative statement, affirmative tag? (+ , +)

Example 68 has the same proposition as example 67 – 'we have to submit this paper next Monday'; however, the tag is in an affirmative polarity. The speaker has no expectation of any particular answer. The tag question only requires the interlocutor to judge the truth value of the proposition.

(68) Q: women bixu   xia   zhouyi   jiao   zhe pian lunwen, shi ma?
          we   have-to next Monday submit this CL   paper   be Q
       'We have to submit this paper next Monday, do we?'

    a. A: shi (, women bixu   xia   zhouyi   jiao   zhe pian lunwen).
               be (we   have-to next Monday submit this CL   paper)
          'Yes (, we have to submit this paper next Monday).'

    b. A: bu   shi (, women mei biyao   xia   zhouyi   jiao   zhe pian lunwen).
               not be (, we   not have-to next Monday submit this CL   paper)
          'No (, we don't have to submit this paper next Monday).'

- Third formula: negative statement, affirmative tag? (- , +)

The proposition in the negative statement in example 69 is, 'we don't need to submit this paper next Monday'. With an affirmative tag, the speaker does not know the truth value of the proposition and has no bias regarding the affirmative or the negative answer.

(69) Q: women bu xuyao xia   zhouyi   jiao   zhe pian lunwen, shi ma?
          we   not need next Monday submit this CL   paper   be Q
       'We don't need to submit this paper next Monday, do we?'

a. A: shi (, women bu xuyao xia   zhouyi   jiao   zhe pian lunwen).
      be (we   not need   next Monday submit this CL   paper)
   'No, we don't need to submit this paper next Monday.'

b. A: bu shi, women xuyao xia   zhouyi   jiao   zhe pian lunwen.
      not be, we   need   next Monday submit this CL   paper
   'Yes, we need to submit this paper next Monday.'

- Fourth formula: negative statement, negative tag? (- , -)

Example 70 has the formula in which both the statement and the tag are in negative polarities. The negative statement provides the proposition that 'we don't need to submit this paper next Monday'. The negative tag implies that the speaker expects the interlocutor to confirm the proposition. It is noted, above, that the tag questions in English cannot be of this type of formula; that is, the statement and the tag cannot be both negative in English.

(70) Q: women bu xuyao xia   zhouyi   jiao   zhe pian lunwen, bu shi ma?
         we   not need   next Monday submit this CL   paper   not be Q
      'We don't need to submit this paper next Monday, don't we?'

a. A: shi, women bu xuyao xia   zhouyi   jiao   zhe pian lunwen.
      be we   not need   next Monday submit this CL   paper
   'No, we don't need to submit this paper next Monday.'

b. A: bu shi, women xuyao xia   zhouyi   jiao   zhe pian lunwen.
      not be, we   need   next Monday submit this CL   paper
   'Yes, we need to submit this paper next Monday.'

2.5 Intonation Yes/No Questions

Yes/no questions in Mandarin can be marked also by raising the intonation at the end of the sentence, which are usually called intonation yes/no questions. Since the interrogative

marker of this type of yes/no question is a rising intonation, but not interrogative particles or other syntactic forms, the surface structure of an intonation yes/no question is no different to that of the corresponding declarative sentence, such as the intonation yes/no question 71 and the declarative sentence 72.

(71) Q: ni   xihuan yuyanxue?
          you like   linguistics

      'Do you like linguistics?'

      A: xihuan./ bu xihuan.
         like/   not like

      'Yes./ No.'

(72) ni   xihuan yuyanxue.
      you like   linguistics

      'You like linguistics.'

In oral conversation, the intonation yes/no question is realised by the rising intonation at the end of the sentence. In written form, the intonation yes/no question is realised by the question mark at the end of the sentence.

An intonation yes/no question can be neutral, in which the speaker simply requires the information regarding the yes/no question. In some cases, the intonation yes/no questions can convey a meaning of surprise. For example, in 71, the speaker thinks that the interlocutor does not like linguistics. However, some evidence indicates that the interlocutor does like linguistics. The speaker is surprised and asks the question to recheck the answer. The intonation yes/no question poses the proposition – 'you like linguistics' – which is contrary to what the speaker previously believed. The question remains a neutral yes/no question, however, since the speaker is asking for information from the interlocutor.

2.6 The Yes/No Question Ending with Negation

There is a type of yes/no question in which the negation *bu* or *mei* appears at the end of the sentence, such as in examples 73 and 74.

(73) Q: ni   mingtian qu jian daoshi   bu?
      you tomorrow go meet supervisor not
    'Will you meet your supervisor tomorrow?'

    A: qu./ bu qu.
       go/ not go

    'Yes./ No.'

(74) Q: ni   chi fan   le   mei?
      you eat meal ASP not
    'Have you eaten?'

    A: chi le./   mei (chi).
       eat ASP/ not (eat)

    'Yes./ No.'

There is no consensus in the research regarding this negation being spelt as *bu* or *mei* at the end of these yes/no questions. Some linguists take the sentence-final negation as the ellipsis version of the A-not-A form, while some linguists prefer the idea that this sentence-final negation is a type of yes/no question particles. Still other linguists think that this sentence-final negation contains some features of the negative adverb and some features of particles. In this thesis, I do not attempt to define the features or the source of this type of sentence-final negation in yes/no questions. Instead, I generally describe and discuss some features when a yes/no question ends with a sentence-final negation.

One feature is that, when a yes/no question ends with a sentence-finial negation, it cannot have any other sentence-final particles, such as *ne*, *a*, *ya* and *ou*.

Example 75 is a yes/no question ending with the sentence-final *bu*. No matter whether the sentence-final *bu* is a yes/no question particle or is part of an A-not-A form, the interrogative feature is on the *bu*. In a particle yes/no question, the interrogative feature [+Q] is on the yes/no question particle. Therefore, if the yes/no question in 75 is taken as a particle yes/no question which is formed by the yes/no question particle *bu*, the particle *bu*, as a yes/no question particle, hold the interrogative feature [+Q]. In another case, if the yes/no question in 75 is regarded as an A-not-A question, the sentence-final *bu* would be the 'not-A' part which is moved to the end of the sentence and is omitted as 'not' because of the redundancy of 'A'. Since in A-not-A question, it is the 'A-not-A' part that takes the interrogative feature [+Q] (Huang et al., 2009). The sentence-final *bu* as a part of the A-not-A form, takes the interrogative feature [+Q]. In addition, the yes/no question ending with the sentence-final *bu* does not expect any particular answer. However, the yes/no question ending with the sentence-final *bu* cannot be added any other sentence-final particle such as *ne* in example 76. The yes/no question with the yes/no question particle *ma* works in the same way, which cannot co-occur with the sentence-final particle *ne*, such as in examples 77 and 78.

(75)   Q: ni   mingtian qu chaoshi   bu?
           you tomorrow go supermarket not
        'Will you go to the supermarket tomorrow?'

       A: qu./ bu qu.
          go/ not go

        'Yes./ No.'

(76)   * Q: ni   mingtian qu chaoshi   bu ne?
             you tomorrow go supermarket not NE
          'Will you go to the supermarket tomorrow?'

(77) Q: ni   mingtian qu chaoshi   ma?
          you tomorrow go supermarket Q
       'Will you go to the supermarket tomorrow?'

      A: qu./ bu qu.
          go/ not go

       'Yes./ No.'

(78) * Q: ni   mingtian qu chaoshi   bu ma?
            you tomorrow go supermarket not Q
         'Will you go to the supermarket tomorrow?'

Example   79 is an A-not-A question in which the 'not-A' part moves to the end of the
sentence. That is, the 'bu qu(not go)' in the A-not-A form 'qu bu qu(go not go)' moves to
the end of the sentence. However, in this A-not-A question, the sentence-final particle, such
as ne, can appear at the end of the A-not-A question, such as in example 80.

(79) Q: ni   mingtian qu chaoshi   bu qu?
          you tomorrow go supermarket not go
       'Will you go to the supermarket tomorrow or not?'

      A: qu./ bu qu.
          go/ not go

       'Yes./ No.'

(80) Q: ni   mingtian qu chaoshi   bu qu ne?
          you tomorrow go supermarket not go NE
       'Will you go to the supermarket tomorrow or not?'

      A: qu./ bu qu.
          go/ not go

'Yes./ No.'

It is noteworthy that sentence-final particles, such as *ne*, *a*, *ya* and *ou* mentioned above, are not yes/no question particles, which have no interrogative [+Q] feature.

For examples below, the sentence in 81 is a declarative sentence which can be attached by the yes/no question particle *ma* at the end to form a particle yes/no question like 82. The sentence-final particle *ma* is an yes/no question particle, containing an interrogative [+Q] feature. In this way, the sentence in 82 is a particle yes/no question.

(81)　tade maomi feichang keai.
　　　his　cat　　very　　cute
　　　　'His cat is very cute.'

(82)　tade maomi feichang keai ma?
　　　his　cat　　very　　cute Q
　　　　'Is his cat very cute.'

The declarative sentence in 81 can be attached by a particle *ne* as 83. However, the sentence-final particle *ne* is just a sentence-final particle, not containing an interrogative [+Q] feature. Therefore, the particle yes/no question like 84 is unavailable.

(83)　tade maomi feichang keai ne.
　　　his　cat　　very　　cute PTCL
　　　　'His cat is very cute.'

(84)　* tade maomi feichang keai ne?
　　　　his　cat　　very　　cute PTCL
　　　　'His cat is very cute.'

Similarly, in wh-questions, for example 85, the sentence-final particle *ne* is just a particle which does not have an interrogative [+Q] feature. It is the wh-part '*shenme*(what)' that contains the wh-feature and the interrogative [+Q] feature as well.

(85) Q: ni   zuotian kan   le   shenme dianying ne?
        you yesterday watch ASP what   movie   PTCL
     'What movie did you watch yesterday?'

     A: Avengers: Endgame.
        avengers   endgame

     'Avengers: Endgame.'

The wh-question in 86 is the same with the wh-question in 85 but without the particle *ne*. However, it does not change anything. The question in 86 still keeps the wh-feature and the interrogative [+Q] feature. Therefore, the particle *ne* is just a sentence-final particle which has no [+Q] feature.

(86) Q: ni   zuotian kan   le   shenme dianying?
        you yesterday watch ASP what   movie
     'What movie did you watch yesterday?'

     A: Avengers: Endgame.
        avengers   endgame

     'Avengers: Endgame.'

Since the particle *ne* does not have interrogative [+Q] feature, in the yes/no question like 87, even thought the A-not-A form can occur with the particle *ne*, they are no conflicts. The A-not-A form '*keai bu keai*(cute not cute)' takes the interrogative [+Q] feature to form this yes/no question. The particle *ne* is merely a sentence-final particle having no interrogative feature. Deleting the sentence-final particle *ne* like 88 does not affect the meaning of the

yes/no question as 87.

(87) tade maomi keai bu keai ne?
      his   cat   cute not cute PTCL
        'Is his cat cute or not?'

(88) tade maomi keai bu keai?
      his   cat   cute not cute
        'Is his cat cute or not?'

The above examples display that the sentence-final negation cannot co-occur with other sentence-final particles. Thus, it seems that the sentence-final *bu* is like a yes/no question particle, such as *ma*. However, the sentence-final *bu* still retains the negation meaning.

(89) Q: ni   bu xihuan chi pingguo ma?
         you not like   eat apple   Q
        'Don't you like eating apples?'

      A: xihuan (chi)./ bu xihuan (chi).
         like   (eat)/ not like   (eat)

        'Yes(, I like eating apples)./ No(, I don't like eating apples).'

(90) * Q: ni   bu xihuan chi pingguo bu?
           you not like   eat apple   not
        'Don't you like eating apples?'

The question in example 89 is a negative yes/no question with the yes/no question particle *ma*. However, if the negative yes/no question ends with a sentence-final negation *bu*, such as in example 90, the yes/no question is ungrammatical (Cheng et al., 1997).

In example 89, the speaker expects the interlocutor to confirm the proposition '*ni bu xihuan chi pingguo*(you don't like eating apples)' is correct with the negative *ma* yes/no question. In yes/no questions formed by yes/no question particles, it is the yes/no question particle that poses the affirmative and negative choices to form a yes/no question. Therefore, in example 89, the yes/no question particle *ma* provides the interrogative feature, that is, the polarity variable, to the proposition '*ni bu xihuan chi pingguo*(you don't like eating apples)'. However, in a yes/no question ending with the sentence-final negation, such as example 91, the statement is '*ni xihuan chi pingguo*(you like eat apples)', the sentence-final *bu* retains its meaning of negation, which poses the negative choice. The affirmative meaning in the statement and the negative sentence-final *bu* provide the affirmative and negative choices for the interlocutor to form a yes/no question. Thus, the sentence-final negation shares more features with the A-not-A form.

(91) Q: ni   xihuan chi pingguo bu?
         you like   eat apple   not
      'Do you like eating apples or not?'

      A: xihuan (chi)./ bu xihuan (chi).
         like   (eat)/ not like   (eat)

      'Yes(, I like eating apples)./ No(, I don't like eating apples).'

In addition, the full A-not-A form for a verb is the VP-not-VP form. Since the complement of the latter VP is identical to the complement of the former VP, the latter complement can be elided. Then, another A-not-A form – VP-not-V form is derived. Moreover, the latter verb in the latter VP is actually the same with the former verb in the former VP as well. Namely, in the VP-not-VP form, the latter VP is identical to the former VP. Then, if the latter VP is elided as a whole, the VP-not form is derived.

The A-not-A question in example 92 contains the full A-not-A form for the A-not form in example 91.

(92) Q: ni   xihuan chi pingguo bu xihuan chi pingguo?
         you like   eat apple   not like   eat apple
      'Do you like eating apples or not?'

      A: xihuan (chi)./ bu xihuan (chi).
         like   (eat)/ not like   (eat)

      'Yes(, I like eating apples)./ No(, I don't like eating apples).'

In the A-not-A form '*xihuan chi pingguo bu xihuan chi pingguo*(like eat apple not like eat apple)', the former affirmative verb '*xihuan*(like)' and the latter negative verb '*bu xihuan*(not like)' take the same VP complement '*chi pingguo*(eat apple)'. Then, the latter VP complement is elided in example 93, which is the VP-not-V form in A-not-A form. Actually, in the A-not-A form '*xihuan chi pingguo bu xihuan chi pingguo*(like eat apple not like eat apple)', the latter VP '*xihuan chi pingguo*(like eat apple)' is identical to the former VP '*xihuan chi pingguo*(like eat apple)', except for the polarity. Therefore, the latter VP '*xihuan chi pingguo*(like eat apple)' is elided in example 91. The VP-not form is derived from the VP-not-VP after the latter VP is elided.

(93) Q: ni   xihuan chi pingguo bu xihuan?
         you like   eat apple   not like
      'Do you like eating apples or not?'

      A: xihuan (chi)./ bu xihuan (chi).
         like   (eat)/ not like   (eat)

      'Yes(, I like eating apples)./ No(, I don't like eating apples).'

Therefore, I believe that the sentence-final negation comes from the A-not-A form because, in the A-not-A form, the latter A is identical to the former A, then the latter A is elided. The A-not form remains and the negation part *bu*(not) or *mei*(not) is at the end of the question. However, since the sentence-final negation is at the end of the sentence, it shares some features with sentence-final particles and cannot co-occur with other sentence-final

particles, such as *ne*, *a*, *ya* and *ou*.

2.7   Summary

According to the surface structures of the questions, there are four types of yes/no question: yes/no particle questions, A-not-A questions, tag questions and intonation yes/no questions.

A yes/no particle question is a declarative sentence attached by a yes/no question particle – *ma* or *ba*. The yes/no particle question has a proposition in the question, and the yes/no interrogative feature provided by the yes/no question particle requires the interlocutor to judge the truth value of the proposition. The *ma* yes/no particle question asks information about the proposition. Namely, the speaker does not have any preference regarding the answer. However, the *ba* yes/no particle question expects confirmation from the interlocutor. Therefore, the speaker believes that the proposition in the question is true. The speaker poses the *ba* yes/no particle question and wants the interlocutor to confirm that the proposition in the question is true.

Regarding the A-not-A question, the affirmative A and the negative A co-exist to supply a variable polarity that provides an interrogative feature to form a yes/no question. The A-not-A can have various inner structures, such as XP-not-XP, X-not-XP and XP-not-X. The A-not-A question has no expectation of a particular answer, which provides the affirmative A and the negative A with two options and asks the interlocutor to choose one option as the answer.

A tag question comprises a statement and a tag. The proposition is in the statement, and the tag provides the polarity to make the sentence a yes/no question. The tag contains an interrogative feature to form a yes/no question, which can have a *ma* particle, a *ba* particle or an A-not-A form. In a *ma* tag question, if the *ma* particle tag is affirmative, the tag question is neutral. That is, the speaker does not have any preference regarding the answer and only asks for information from the interlocutor. If the *ma* particle tag is negative, the tag question expects the interlocutor to confirm the proposition in the tag question. In a

ba tag question, if the *ba* particle tag is affirmative, the tag question expects confirmation of the proposition from the interlocutor. If the *ba* particle tag is negative, the tag question expects a negation of the proposition from the interlocutor. The tag in the A-not-A form is neutral also. A tag question with an A-not-A tag only poses the polarity variation to the interlocutor and does not expect a particular answer.

Intonation yes/no questions have the same structures as the corresponding declarative sentences. The interrogative feature is realised in phonology by the raising of the intonation at the end of the sentence in an oral conversation. In the written language, the intonation yes/no questions are identified by a question mark. Intonation yes/no questions ask the interlocutor to judge the truth value of the proposition in the sentence. The speaker has no preference regarding the answers from the interlocutor. That is, an intonation yes/no question asks for information about the proposition from the interlocutor.

There is a type of yes/no question ending with a negation. The sentence-final negation is treated as a result of the ellipsis of the A-not-A form in this thesis. That is, this yes/no question ending with a negation, such as *bu* or *mei* is actually an A-not-A question. However, since the sentence-final negation is at the end of the sentence, it shares some features with sentence-final particles. For example, the sentence-final negation cannot co-occur with other sentence-final particles such as *ne*, *a*, *ya* and *ou*. Yes/no questions ending with the sentence-final negation have no expectation of a particular answer.

Corresponding to this chapter that describes yes/no questions in Mandarin, the next chapter describes answers to yes/no questions in Mandarin.

Chapter 3

Description of Answers to Yes/No Questions in Mandarin

3.1 Two Answer Systems: Particle Answers and Echo Answers

As described in the previous chapter, a yes/no question poses a proposition and asks the interlocutor to judge the truth value of the proposition, such as yes/no questions in English and yes/no particle questions, tag questions and intonation yes/no questions in Mandarin. In addition, the A-not-A yes/no question in Mandarin poses an affirmative and a negative possibility for the interlocutor to choose one as the answer. Generally, there is a variable polarity in or on the proposition, and the interlocutor poses either the affirmative or negative polarity as the answer to the variable polarity in the yes/no questions.

For example, the yes/no question in example 94 contains the proposition – 'you like my new dress' – and it asks the interlocutor to judge the truth value of the proposition.

(94)   Q: Do you like my new dress?

      a. A: Yes, I like your new dress.

b. A: No, I don't like your new dress.

The variable polarity is the truth value of the proposition. The interlocutor can confirm the proposition to offer an affirmative answer or deny the proposition to offer a negative answer. For example, the full sentential answers to the yes/no question, 'Do you like my new dress?' are as in 94a and 94b in 94. However, in English, in addition to the full sentential answers, such as 94a and 94b, yes/no questions can be answered by other shorter answer forms, such as example 95. In 95a, the yes/no question is answered using a particle, a subject, a verb and the negation 'don't' in the negative answer, without the object 'my new dress'. In addition, the question, 'Do you like my new dress?' can also be answered such as in 95b. That is, the shortest form to the yes/no question only contains the following particles: the affirmative particle 'yes' and the negative particle 'no' in English, such as in example 95b.

(95)   Q: Do you like my new dress?

a. A: Yes, I like. /No, I don't like.

b. A: Yes. / No.

This does not only apply in English; many other languages have yes/no questions that can be answered using particles. For example, in Dutch example 96, the particle '*ja*' can be used alone to confirm the proposition 'you are hungry' in the yes/no question as the shortest affirmative answer, instead of the full affirmative sentential answer 'yes, I am hungry'. Similarly, '*nee*' is the negative particle that can be used solo to negate the proposition in the yes/no question, which conveys the same meaning as the full negative sentential answer 'no, I am not hungry.'

(96)   Q: Heb je   honger?
          be   you hungry
        'Are you hungry?'

a. A: Ja(, ik heb honger).
       yes I be   hunger
  'Yes (, I am hungry).'

b. A: Nee(, ik heb geen honger).
       no   i be not   hungry
  'No (, I am not hungry).'

However, some languages do not use particles to answer yes/no questions. For example, in Nepali, the affirmative full sentential answer to the yes/no question in example 97 would be like 97a. The affirmative shortest answer would be like 97c, which only uses the main verb '*janchu*(go)' to answer the yes/no question. Regarding the negative shortest answer to the yes/no question in example 97d, it is answered using the main verb with the negative suffix. Therefore, the shortest answers to the yes/no questions in languages such as Nepali employ the main verb and the polarity.

(97) Q: K   timi ma sanga pasai janchau?
        will you me with   shop go
    'Will you go shopping with me?'

a. A: Ma timi sanga pasal janchu.
      I   you with   shop go
  'Yes, I will go shopping with you.'

b. A: Ma timi sanga pasal jadinah.
      I   you with   shop go-not
  'No, I won't go shopping with you.'

c. A: Janchu.
     go
  'Yes.'

d. A: Jadinah.
     go-not

'No.'

Holmberg (2012, pp. 53-54) and Holmberg (2016, pp. 2-7, Chap. 1) mention some parameters concerning categorising the answers to yes/no questions. One of these parameters concerns the form of the answers to yes/no questions, that is, whether the answer employs a particle as the answer or the answer echoes some constituents in the yes/no question as the answer. As in the examples listed above, English is the language that employs the affirmative particle *yes* or the negative particle *no* to answer yes/no questions. Dutch follows the particle answer system as well, answering yes/no questions via the affirmative particle *ja* or negative particle *nee*. However, in some languages, such as Nepali, the answers echo the finite verb with the polarity to answer yes/no questions.

Mandarin has both the particle answer system and the echo answer system. In example 98, the full sentential answer to the yes/no question is like 98a. Some of the constituents can be omitted for simpler answers. For the shortest answer, the question can be answered only by the main verb with the polarity, such as answer 98b, in which the answer is the main verb '*kan*(watch)' with the polarity. Yes/no questions can also be answered by using particles, such as in 98c and 98d, which are further discussed below.

(98) Q: ni mingtian kan shijiebei agenting dui bingdao de bisai ma?
        you tomorrow watch World-Cup Argentina against Iceland of game Q
        'Will you watch the Argentina vs Iceland World Cup game tomorrow?'

   a. A: wo mingtian kan shijiebei agenting dui bingdao de bisai.
          I tomorrow watch World-Cup Argentina against Iceland of game
        'I will watch the Argentina vs Iceland World Cup game tomorrow.'

   b. A: kan./ bu kan.
          watch/ not watch
        'Yes(, I will)./ No(, I won't).'

   c. A: en./ eñ.
          Aff/ Neg

'Yes./ No.'

d. ? A: shi./ bu shi.
        be/   not be
     'Yes./ No.'

3.2   Particle Answers to Yes/No Questions in Mandarin

3.2.1   *shi* and *bu shi*

Regarding the particle answer system, according to the description in **SSWL** [1], *shi* and *bu (shi)* are generally acknowledged as the particle for answering yes/no questions in Mandarin corresponding to the words *yes* and *no* in English.

(99)   Q: Lao Cheng keyi bu qu ma?
          Lao Cheng can not go Q
       'Is Lao Cheng allowed not to go?'

a. A: shi ((ta) keyi bu qu).
        yes   he can not go
     'Yes (he is allowed not to go).'

b. A: bu, ta bu keyi bu qu.
        no he not can not go
     'No he isn't allowed not to go.' (= He must go.)

c. A: keyi a.
        can PTCL
     'Yes (he is allowed not to go).'

d. A: bu keyi oh.
        not can PTCL

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[1]SSWL: Syntactic Structures of the World's Languages - http://sswl.railsplayground.net

'No he isn't allowed not to go.' (= He must go.)

Example 99 is from Holmberg (2016, p. 192, Chap. 4). Answers 99a and 99b are the particles *shi* and *bu (shi)*, while answers 99c and 99d are verb-echo answers.

It is true that *shi* can be used as the answer to yes/no questions in which *shi* is not contained in the questions, such as the example 100.

(100) Q: ni   pen   xiangshui le   ba?
          you spray perfume   ASP Q
        'You are wearing perfume, right?'

     A: shi a./   bu shi.
        be PTCL/ not be

     'Yes./ No.'

In this condition, the answer is clearly not the echo answer since the answer *shi* does not appear in the question. This might be the reason *shi* and its negative form *bu shi* are acknowledged as the particle answers in Mandarin, since they are not echoed, and they can usually answer many yes/no questions.

However, I do not think that *shi* and *bu (shi)* are the particle answers to yes/no questions in Mandarin since *shi* and the negation *bu shi* are not the particles that can be used to answer all yes/no questions.

In English, *yes* and *no* are the particle answers to yes/no questions. The affirmative answer *yes* only expresses the affirmative feature in polarity and has no specific lexical meanings. For example, all the yes/no questions in English in examples 101 to 105 can be answered using *yes* or *no*, no matter what verbs are used in the questions.

(101)   Q: Does she like swimming?
        A: Yes./ No.

(102)   Q: Will you marry me?
        A: Yes./ No.

(103)   Q: Are you sad?
        A: Yes./ No.

(104)   Q: Can I borrow your pen?
        A: Yes./ No.

(105)   Q: Had he already visited the museum before?
        A: Yes./ No.

According to Holmberg (2012, 2016), the particle *yes* in English only takes the [Aff] feature, only expressing the affirmative polarity, and the particle *no* only conveys the negative polarity with the [Neg] feature. That is, after deleting the sentential expression of the answer, the polarity feature remains and spells out as the particle. The affirmative feature spells out as *yes* in English and the negative feature spells out as *no*.

The particle answers *yes* and *no* in English are used to answer all types of yes/no questions, since they only convey the affirmative and negative polarity. If *shi* and *bu shi* are particles, they should be universal. However, in the above examples 99a and 99b, the answers *shi* and *bu (shi)*, especially the negative answer, are not likely to appear in real, daily conversation, even thought they might sound acceptable to some people.

Moreover, there are some yes/no questions that definitely cannot be answered using *shi* or *bu shi* in Mandarin. One representative example is a yes/no question in which the main verb is '*you*(have)'. The verb used in answers to this type of yes/no question must be '*you*(have)'

or its negative form '*mei (you)*(not have)'. For example, in the following examples 106 and 107, both the first answers to the yes/no questions in the examples are answered using '*you*(have)/ *mei you*(not have)', which is the main verb in the yes/no questions with the polarity. Therefore, these answers are verb-echo answers. However, the second answers are answered using '*shi*/ *bu shi*', which are unacceptable. If the *shi* and *bu shi* are particle answers such as *yes* and *no* in English, they should carry the polarity feature and assign positive or negative value to the polarity variable in the yes/no question. However, *shi* in Mandarin, only has a confirming function. That is, '*shi*' in the answers to yes/no questions, is to confirm the truth value of the statement in the yes/no question, and the negative answer '*bu shi*(not be)' disconfirms the truth of the statement in the yes/no question. If a yes/no question does not have the confirming requirement, answering by *shi* or *bu shi* is unacceptable.

(106) Q: ni   you nvpengyou ma?
            you have girlfriend   Q
        'Do you have a girlfriend?'

        a. A: you./ mei you.
                have/ not have
            'Yes./ No.'

        b. * A: shi./ bu shi.
                  be/   not be
            'Yes./ No.'

        c. A: en./ eñ.
                Aff/ Neg
            'Yes./ No.'

(107) Q: ni   you 5   bang qian   jie   wo ma?
            you have five pound money lend I   Q
        'Do you have five pounds to lend me?'

    a. A: you./ mei you.
           have/ not have

       'Yes./ No.'

    b. * A: shi./ bu shi.
             be/   not be

       'Yes./ No.'

    c. A: en./ eñ.
          Aff/ Neg

       'Yes./ No.'

The verb *you*(have) is similar to the lexical word *have* in English, which means to 'possess', 'own' and 'exist' in Mandarin, and the word *shi* is similar to the copular verb *be* which links the subject and the predicate of a sentence in English. In addition, *shi* in Mandarin has the confirming function which is introduced above, and it can play the role of a focus marker as well. Therefore, even though the meaning of *shi*, especially the confirming meaning of *shi*, might be acceptable for answering the majority of yes/no questions, it is not acceptable for yes/no questions that are not asking for confirmation. Such yes/no questions cannot be answered using *shi*, since the meaning of *shi* is irrelevant to the yes/no questions.

Furthermore, the affirmative form of *shi* is '*shi*'. However, the negative form of *shi* is '*bu shi*', in which '*bu*' is the negation. If *shi* and *bu shi* are the affirmative and negative particle answers to yes/no questions in Mandarin, *shi* should only contain the affirmative polarity feature, and *bu shi* should only contain the negative polarity feature. However, *bu* is the negation in Mandarin. Therefore, *bu shi* obviously contains more than simply negation, which may indicate also that *shi* contains a confirming meaning. The negative form of *shi* is '*bu shi*(not be)'. The negation *bu*(not) to the left of *shi* negates the confirming meaning of *shi*. Namely, '*bu shi*(not be)' has the disconfirming meaning.

Therefore, *shi* and its negative form *bu shi*, are not particle answers. They not only convey the polarity feature, but also contain the confirming meaning of the verb *shi*. Thus, they cannot be like the particle answers *yes* and *no* in English to answer all yes/no questions in

Mandarin.

However, in some conditions, when yes/no questions do not contain the verb *shi*, answering using *shi* is grammatical, such as in example 100. Even in example 99, answers 99a and 99b might be acceptable to some native speakers.

As mentioned previously, *shi* has a confirming meaning, which means that when a proposition is posed and asks for a confirmation, people can answer using *shi* or its negative form *bu shi*, to offer a confirmation or disconfirmation towards the proposition. In example 106, which is listed as 108 below, the yes/no question asks for information, and the speaker has no preference regarding the answers. The main verb *you* conveys the meaning of 'have'. Therefore, answering using *shi*, which expresses the confirming meaning, is illogical. In example 109, the yes/no question made using the particle *ba* expresses the preference of the speaker, that is, the speaker believes that 'you have a girlfriend'. The speaker expects the interlocutor to confirm this proposition. The *shi* answered by the interlocutor judges that this opinion of the speaker is correct. In this way, answering using *shi* is acceptable.

(108) Q: ni   you   nvpengyou ma?
           you have girlfriend   Q
        'Do you have a girlfriend?'

       * A: shi./ bu   shi.
            be/   not be

        'Yes./ No.'

(109) Q: ni   you   nvpengyou ba?
           you have girlfriend   Q
        'You have a girlfriend, right?'

       A: shi.
          be

'Yes.'

Therefore, *shi* is not a particle but still a verb since it keeps the confirming meaning. In some yes/no questions, the main verb is *shi*, which provides the confirming meaning. With the interrogative feature, a yes/no question asks the interlocutor to make a confirmation regarding the proposition in the yes/no question. Some yes/no questions are not made by the verb *shi*, but, in a yes/no question, the speaker has a presupposition which is the proposition, and expects the interlocutor to confirm the proposition. Therefore, the interlocutor needs to judge the truth value of the proposition. Answering using *shi* or its negative form *bu shi*, which conveys the confirming meaning, is acceptable.

Generally, if a yes/no question is biased, *shi* can be used as the affirmative answer. That is to say, if the speaker already has a truth-value judgement towards the proposition in the yes/no question and asks for the confirmation from the interlocutor, *shi* can be answered for confirming. In this way, the biased yes/no questions such as the *ba* yes/no questions and tag questions, can be answered by *shi*. The *ma* yes/no questions are not biased themselves like the example 108 relisted as 110 below. Answering by *shi* or *bu shi* is not acceptable to the unbiased *ma* yes/no question. However, in the example 111, there is a word *shi* occurring in the yes/no question which is also a focus marker. The *shi* in the yes/no question makes the *ma* yes/no question have a bias. The speaker has already believed that the proposition 'you have a girlfriend' is true, and asks for the confirmation from the interlocutor. In this way, even though the yes/no question particle *ma* is unbiased, the *shi* which is a focus marker and has the confirming meaning in the *ma* yes/no question, provides a bias to the *ma* yes/no question. Therefore, the answer *shi* and negative answer *bu shi* in 111 is acceptable.

(110)   Q: ni   you   nvpengyou ma?
             you have girlfriend   Q
         'Do you have a girlfriend?'

     * A: shi./ bu shi.
           be/   not be

'Yes./ No.'

(111) Q: ni   shi you nvpengyou ma?
          you be have girlfriend   Q
       'Is it true that you have a girlfriend?'

       A: shi./ bu shi.
          be/   not be

       'Yes./ No.'

However, this does not mean that all yes/no questions that ask for confirmation can be answered using *shi* or *bu shi*, and the negative form *bu shi* is less acceptable for expressing the disconfirmation. In example 112, the speaker has a presupposition and expects confirmation regarding the proposition in the yes/no question. However, answering using *shi* is not very acceptable, and the negative form *bu shi* is unacceptable.

(112) Q: zhe xie   ti   zheme jiandan, wo de le   man fen   ba?
          this some question so   simple   I   get ASP full mark Q
       'These questions are so simple. I got full marks, right?'

       a. ? A: shi.
               be
           'Yes.'

       b. * A: bu shi.
               not be
           'No.'

       c. A: mei you.
              not have
           'No.'

In example 113, the speaker has a presupposition – 'England lost the semi-final' – and expects the interlocutor to confirm the presupposition, which is the proposition as well. The affirmative answer is answered using *shi*, which has the confirming meaning to confirm the proposition.

(113)   Q: 2018 shijiebei,   yinggelan ban jue   sai   shu le   ba?
              2018 World-Cup England   semi finial match lose ASP Q
          'In the 2018 World Cup, England lost the semi-final, right?'

          A: shi.
             be

          'Yes.'

However, in the similar example 114, it is unacceptable to answer using *bu shi* to convey the disconfirmation towards the proposition in the yes/no question. The actions '*de le*(get ASP)', '*shu le*(lose ASP)' and '*ying le*(win ASP)' in examples 112 to 114 are finished. When denying the occurrence of an action, Mandarin uses the verb *you*(have) with the negative polarity spelt out as '*mei*(not)', such as in acceptable answers 112c and 114b.

(114)   Q: 2018 shijiebei,   yinggelan ban jue   sai   ying le   ba?
              2018 World-Cup England   semi finial match win   ASP Q
          'In the 2018 World Cup, England won the semi-final, right?'

          a. * A: bu shi.
                   not be
              'No.'

          b. A: mei you.
                 not have
              'No.'

When *shi*(be) or its negative form *bu shi*(not be) appears in a yes/no question as the main verb, clearly, the answers *shi* or *bu shi* are echo answers, such as in examples 115 and 116.

(115) Q: ta shi yingguoren ma?
       he be British   Q
    'Is he British?'

    A: shi./ bu shi.
      be/   not be

    'Yes./ No.'

(116) Q: zhe tiao maojin shi ganjingde ba?
       this CL   towel   be clean   Q
    'This towel is clean, right?'

    A: shi./ bu shi.
      be/   not be

    'Yes./ No.'

3.2.2   *en* and *eñ*

If the affirmative answer '*shi*(be)' and the negative answer '*bu shi*(not be)' are not particle answers to yes/no questions in Mandarin, then, do yes/no questions in Mandarin have particle answers? The answer is yes. There are particle answers in Mandarin to answer yes/no questions: '*en*' and '*eñ*'.

The affirmative particle is '*en*' with a falling tone in Mandarin; whereas, the negative particle only has the phonological realisation but no character in Mandarin, which is simply termed as '*eñ*' in this thesis for a better and easier discussion. In the word *eñ*, the *ñ* means that there are rising and falling changes in tones on the consonant [n]. The figures 3.1 and 3.2 are the pitch contours of '*en*' and the pitch contour of '*eñ*' individually, in which the

uppers are waveforms and the bottom are pitch contours.
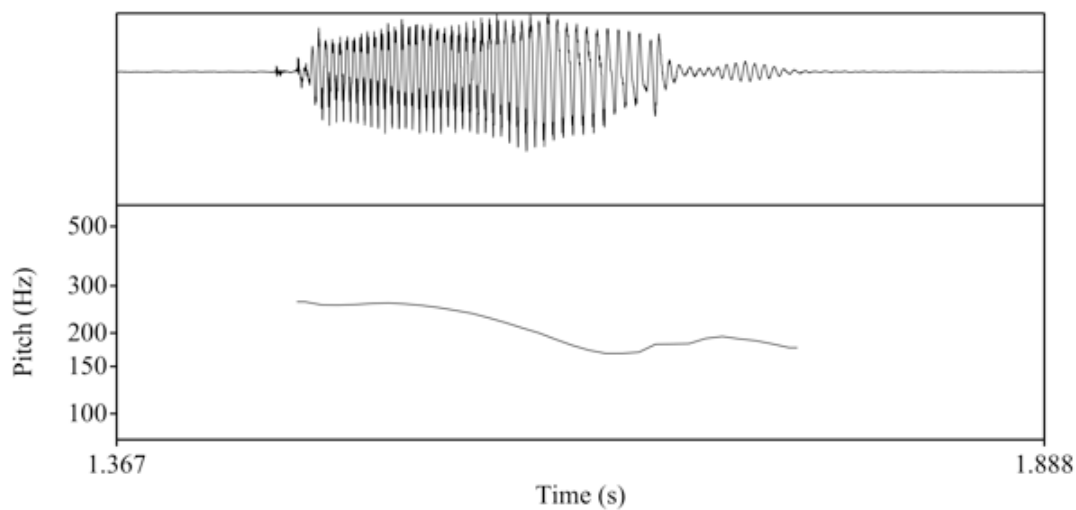
Figure 3.1: pitch contour of '*en*'
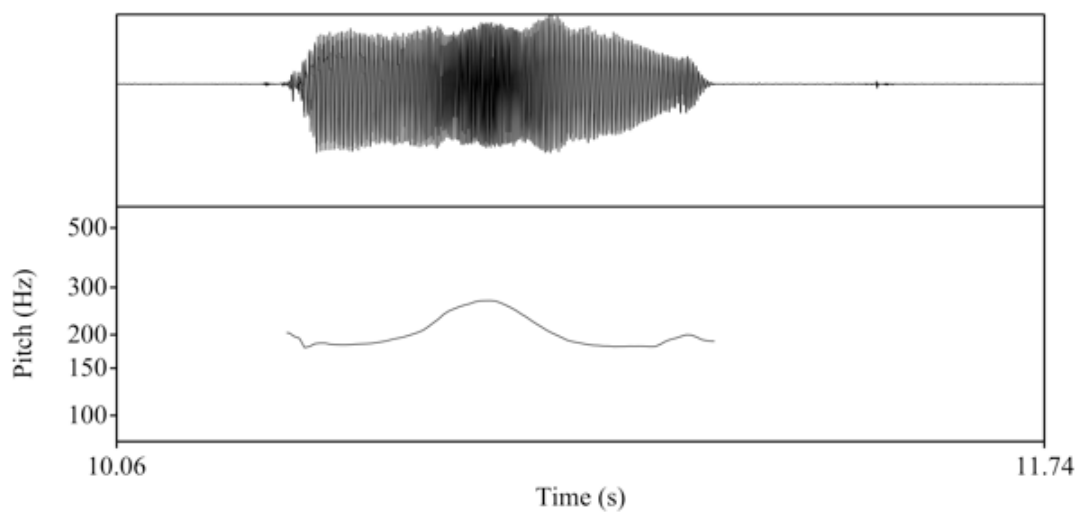
Figure 3.2: pitch contour of '*eñ*'

The particle answers *en* and *eñ* are the same as the particles *yes* and *no* in English. These particles do not contain any lexical meaning but only convey the polarity. For example, in examples 117 to 120, these yes/no questions use the yes/no particle *ma*, employing

the general verb '*xihuan*(like)', the modal verb '*neng*(can)', the verb '*shi*(be)' and the verb '*you*(have)'. The particles *en* and *eñ* can answer all these types of yes/no questions.

(117) Q: ni   xihuan huahua ma?
           you like   drawing Q
        'Do you like drawing?'

       A: en./ eñ.
           Aff/ Neg

        'Yes./ No.'

(118) Q: ni   neng mingtian bang wo huan   ben shu   ma?
           you can   tomorrow help me return CL book Q
        'Can you help me return a book tomorrow?'

       A: en./ eñ.
           Aff/ Neg

        'Yes./ No.'

(119) Q: ni   shi xuesheng ma?
           you be student   Q
        'Are you a student?'

       A: en./ eñ.
           Aff/ Neg

        'Yes./ No.'

(120) Q: ni   you shang jie ke   de jiangyi   ma?
           you have last   CL class of handout Q
        'Do you have the handout from the last class?'

A: en./ eñ.
   Aff/ Neg

'Yes./ No.'

In addition, the yes/no question in example 121 is an A-not-A question, the yes/no question in example 122 is a tag question, and example 123 is an intonation yes/no question. All these forms can all be answered using *en* or *eñ*.

(121) Q: ni   mingtian qu bu qu tushuguan?
         you tomorrow go not go library
      'Will you go to the library tomorrow or not?'

      A: en./ eñ.
         Aff/ Neg

      'Yes./ No.'

(122) Q: wo qian ni   100 bang, dui   ba?
         I   owe you 100 pound right Q
      'I owe you 100 pounds, right?'

      A: en./ eñ.
         Aff/ Neg

      'Yes./ No.'

(123) Q: ni   mei ting guo zhe ge gushi ?
         you not hear ASP this CL story Q
      'Have you heard of this story?'

      A: en./ eñ.
         Aff/ Neg

      'Yes./ No.'

3.3 Echo Answers to Yes/No Questions in Mandarin

Mandarin also employs echo answers as answers to yes/no questions. Like many languages, Mandarin can employ the main verb as the echo answers as well, such as in examples 124 and 125. In example 124, the shortest echo answers only echo the modal word *hui*(will) with the polarity, such as answers 124b and 124d.

(124) Q: ta hui song wo shengri   liwu   ma?
            he will give me birthday present Q
        'Will he give me a birthday present?'

    a. A: ta hui song ni   shengri   liwu.
              he will give you birthday present
           'Yes, he will give you a birthday present.'

    b. A: hui.
              will
           'Yes.'

    c. A: ta bu hui song ni   shengri   liwu.
              he not will give you birthday present
           'No, he won't give you a birthday present.'

    d. A: bu hui.
              not will
           'No.'

In example 125, the echo answers can echo the two verbs *xihuan*(like) and *chi*(eat) together, with the polarity, such as in answer 125c. The shortest echo answer only echoes the verb *xihuan*(like) with the polairty, as in answer 125d. The echo answer 125e echoing the verb *chi*(eat) with the polairty is not acceptable.

(125) Q: ni   xihuan chi xigua   ma?
            you like   eat watermelon Q

'Do you like to eat watermelons?'

a. A: wo xihuan chi xigua.
  I like eat watermelon
 'Yes, I like to eat watermelons.'

b. A: wo bu xihuan chi xigua.
  I not like eat watermelon
 'No, I don't like to eat watermelons.'

c. A: xihuan chi./ bu xihuan chi.
  like eat/ not like eat
 ' Yes, I like./ No, I don't like.'

d. A: xihuan./ bu xihuan.
  like/ not want
 'Yes./ No.'

e. * A: chi./ bu chi.
   eat/ not eat
 'Yes./ No.'

Like many other languages, the echo answer in Mandarin only echoes the modal verb or the main verb with the polarity as the shortest echo answer in the surface structure. However, Mandarin allows other words with the polarity to be echoed as the the shortest answer to a yes/no question also, such as adjectives, adverbs and propositions. In some cases, there are no verbs in yes/no questions. The echo answers echo other words. In some cases, even though the yes/no questions contain verbs, the echo answers still echo words other than the verbs as the echo answers.

3.3.1 Modal verb-echo answers

In some yes/no questions, both a modal verb and a main verb can appear in a yes/no question, and the echo answer always echoes the modal verb with the polarity, such as in examples 126 to 128. The answers that echo the main verbs with the polarity in the questions are not acceptable in Mandarin, such as in answers 126b, 127b and 128b.

(126) Q: ni   neng di   gei wo na   ben zidian   ma?
           you can pass to I   that CL dictionary Q
        'Can you pass me that dictionary?'

   a. A: neng./ bu neng.
          can/   not can
        'Yes./ No.'

   b. * A: di./   bu di.
            pass/ not pass
        'Yes./ No.'

(127) Q: ni   yuanyi jiaru womende shetuan ma?
           you will   join our   club   Q
        'Will you join our club?'

   a. A: yuanyi./ bu yuanyi.
          will/   not will
        'Yes./ No.'

   b. * A: jiaru./ bu jiaru.
            join/   not join
        'Yes./ No.'

(128) Q: huoche yinggai wu dian   dao   ma?
           train   should five o'clock arrive Q

'Should the train arrive at five o'clock?'

   a. A: yinggai./ bu yinggai.
       should/   not should

     'Yes./ No.'

   b. * A: dao./   bu dao.
        arrive/ not arrive

     'Yes./ No.'

3.3.2 Verb-echo answers

When a yes/no question has a verb as the predicate and without a modal verb, the answer normally echoes the verb with the polarity as the echo answer to the yes/no question, such as in example 129. The verbs *shi*(be) and *you*(have) are the most common verbs in Mandarin, which are echoed with the polarity as the echo answers when they appear in yes/no questions as well, such as in examples 130 and 131.

(129) Q: ni   xiang nide jiaren ma?
        you miss   your family Q

     'Do you miss your family?'

     A: xiang./ bu xiang.
       miss/   not miss

     'Yes./ No.'

(130) Q: Dumbledore shi xiaozhang   ma?
        Dumbledore be headmaster Q

     'Is Dumbledore a headmaster?'

     A: shi./ bu shi.
       be/   not be

'Yes./ No.'

(131) Q: nisi   hu   li   you shuiguai ma?
         Loch Ness inside have monster Q

'Are there monsters in Loch Ness?'

A: you./ mei you.
   have/ not have

'Yes./ No.'

Mandarin allows more than one verb to appear in a sentence, such as in examples 132 and 133. In example 132, there are two verbs, *xiang*(want) and *canjia*(join), in the yes/no question. The echo answer can echo the two verbs together, with the polarity, such as in answer 132b.

(132) Q: ni   xiang canjia wangqiu shetuan ma?
         you want join   tennis   club   Q

'Do you want to join the tennis club?'

a. A: xiang./ bu xiang.
      want/   not want

'Yes./ No.'

b. A: xiang canjia./ bu xiang canjia.
      want join/   not want join

'Yes./ No.'

c. ? A: canjia./ bu canjia.
        join/   not join

'Yes./ No.'

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Regarding the shortest echo answer, that is, when only one verb is echoed, the first verb is echoed with the polarity as the answer, as in example 132 and 133. In 132, the verb *xiang*(want) is to the left of the verb *canjia*(join). Therefore, the first verb, *xiang*(want), is echoed with the polarity as the echo answer to the yes/no question, such as in answer 132a. The second verb, *canjia*(join), is very unusual to be echoed with the polarity, as in answer 132c [2].

Example 133 works in the same way. The yes/no question contains two verbs *qu*(go) and *da*(play). For the shortest answer, only the first verb *qu*(go), is acceptable to be echoed with the polarity as the echo answer, as in answer 133a. The second verb, *da*(play), is not likely to be acceptable to be echoed with the polarity as an answer to the yes/no question, such as in answer 133c.

(133)   Q: mingtian xiawu,   ni   qu da   lanqiu   ma?
            tomorrow afternoon you go play basketball Q
        'Will you go to play basketball tomorrow afternoon?'

   a. A: qu./ bu   qu.
          go/   not go
       'Yes./ No.'

   b. A: qu da./   bu   qu da.
          go play/ not go play
       'Yes./ No.'

   c. ? A: da./   bu   da.
            play/ not play
       'Yes./ No.'

In example 134, there are three verb phrases in the yes/no questions: *guan deng*(turn-off lights), *dasuan*(plan) and *shuijiao*(sleep). The answer can only echo the second verb phrase

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[2]The reason why the answers like 132c are not very acceptable is left for further research.

with the polarity as the echo answer, as in answer 134a, or the answer can echo the third verb phrase *shuijiao*(sleep) with the polarity, as in echo answer 134b. However, it is not acceptable for the first verb phrase to be solo echoed with the polarity as the echo answer, such as in answer 134c.

(134)   Q: ni   guan   deng dasuan shuijiao ma?
            you turn-off light plan   sleep   Q
         'Do you turn off the lights for sleeping?'

      a.   A: dasuan./ bu dasuan.
            plan/   not plan
         'Yes./ No.'

      b.   A: suijiao./ bu shui(jiao).
            sleep/   not sleep
         'Yes./ No.'

      c. * A: guan./   bu guan.
               turn-off/ not turn-off
         'Yes./ No.'

3.3.3   Adjective-echo answers

In Mandarin, it is not only the verb that can be echoed with the polarity as the answer to yes/no questions; adjectives can be echoed with the polarity as well. As mentioned above, in Mandarin, a verb is not necessary in a sentence. A sentence can contain only a subject and an adjective that is the predicate. When this type of non-verb sentence turns into a yes/no question, usually a yes/no particle question, an A-not-A question or an intonation yes/no question, the adjective as the predicate is echoed with the polarity as the answer to the yes/no question.

(135)   Q: nide xin shoubiao gui   ma?
            your new watch   expensive Q

'Is your new watch expensive?'

   a. A: gui./   bu gui.
          expensive/ not expensive

      'Yes./ No.'

   b. ? A: pianyi.
           cheap

      'No(, it is cheap).'

(136) Q: wo piaoliang ba?
        I   beautiful Q
    'I am beautiful, right?'

    A: piaoliang./ bu piaoliang.
      beautiful/ not beautiful

    'Yes./ No.'

(137) Q: ni   re bu re?
        you hot not hot
    'Do you feel hot or not?'

    A: re./ bu re.
      hot/ not hot

    'Yes./ No.'

(138) Q: wufan haochi?
        lunch delicious
    'Is the lunch delicious?'

    A: haochi./   bu haochi.
      delicious/ not delicious

'Yes./ No.'

In the above examples 135 to 138, there are no verbs in the yes/no questions, and the answers echo the adjectives with the polarity as echo answers. In example 135, the yes/no *ma* particle question contains only the subject, which is the DP '*nide xin shoubiao*(your new watch)', the adjective *gui*(expensive), which is the predicate, and the yes/no question particle *ma*. Answer 135a echoes the adjective *gui*(expensive) with the covert affirmative polarity as the affirmative answer or echoes the adjective with the overt negative word to form the negative answer '*bu gui*(not expensive)', which could mean the price is normal or it is cheap. However, when '*bu gui*(not expensive)' means '*pianyi*(cheap)', the answer should still employ the adjective-echo answer with the overt negative polarity word, but not the antonym which has the equal meaning. In example 135, the answer 135b is a bad answer, that is, it is acceptable in Mandarin but it seldom appears in real conversation; people prefer to follow an echo answer such as 135a.

The yes/no question in example 136 is a yes/no *ba* particle question, and the answer echoes the adjective *piaoliang*(beautiful) with the covert affirmative polarity or the overt negative polarity as the answer. Example 137 is an A-not-A question, and the answer echoes the A part, that is, the adjective in the yes/no question, with the polarity, as the echo answer. Similarly, the answer in example 138 echoes the adjective *haochi*(delicious) with the polarity as the echo answer to the intonation yes/no question.

3.3.4   Preposition-echo answers

In addition to answering yes/no questions using adjectives with the polarity, Mandarin can echo the preposition with the polarity as the echo answer, which is not acceptable in English. In example 139, the preposition *zai*(at) is the predicate that takes two arguments: the DP *ni*(you) takes the 'Agent' thematic role, and the DP *jia*(home) takes the 'Locative' thematic role. The shortest echo answer only echoes the preposition *zai*(at) with the polarity. In example 140, there is a main verb *gongzuo*(work), and a preposition *zai*(at) in a locative PP '*zai jinrong gongsi*(at financial company)'. However, the echo answer must echo the preposition with the polarity, as in answer 140a. Echoing the main verb *gongzuo*(work)

with the polarity as the answer is not acceptable, such as in answer 140b.

(139) Q: ni   zai jia   ma?
           you at home Q
       'Are you home?'

       A: zai./ bu zai.
          at/   not at

       'Yes(, I am home)./ No(, I am not home).'

(140) Q: ta zai jinrong gongsi   gongzuo ma?
           he at finance company work   Q
       'Does he work at a financial company?'

       a. A: zai./ bu zai.
              at/   not at
          'Yes(, he works at a financial company)./ No(, he does not working at a financial
          company).'

       b. * A: gongzuo./ bu gongzuo.
                work/   not work
          'Yes(, he works at a financial company)./ No(, he does not working at a financial
          company).'

3.3.5   Adverb-echo answers

Mandarin can echo adverbs with the polarity as the echo answers. In examples 141 and
142, both the examples have verbs. The full sentential answers of example 141 are exhib-
ited in answers 141a and 141b. However, the echo answers do not echo the verb with the
polarity, such as in answers 141d and 142b. The adverbs with the polarity are echoed as
the echo answers in answers 141c and 142a.

(141) Q: ni jingchang qu na jia zhong   canting   chi kao ya   ma?
        you frequently go that CL Chinese restaurant eat roast duck Q
      'Do you go to that Chinese restaurant to eat roast duck frequently?'

    a. A: wo jingchang qu na jia zhong   canting   chi kao ya.
          I   frequently go that CL Chinese restaurant eat roast duck
        'Yes, I go to that Chinese restaurant to eat roast duck frequently.'

    b. A: wo bu jingchang qu na jia zhong   canting   chi kao ya.
          I   not frequently go that CL Chinese restaurant eat roast duck
        'No, I don't go to that Chinese restaurant to eat roast duck frequently.'

    c. A: jingchang./ bu jingchang.
          frequently/ not frequently
        'Yes./ No.'

    d. * A: qu./ bu qu.
           go/ not go
        'Yes./ No.'

(142) Q: ta qingsongde ying le   bisai ma?
        he easily   win ASP game Q
      'Did he easily win the game?'

    a. A: qingsong./ bu qingsong.
          easily/   not easily
        'Yes./ No.'

    b. * A: ying./ mei   ying.
           win/   not-have win
        'Yes./ No.'

It needs to be explained that it is not in all cases that the adverbs with the polarity are echoed as echo answers. In example 143, the adverb of frequency, '*yizhi*(always)', modifies

the negative verb '*mei shuijiao*(not sleep)', but the shortest echo answer echoes the verb with the polarity, as in answer 143a, which is not like the above examples; if the adverb with the polarity is echoed as the echo answer, it is not acceptable, such as in answer 143b.

(143)   Q: zhe san   tian, ni   yizhi   mei shuijiao ma?
            this three day   you always not sleep   Q
        'Have you not been sleeping for these three days?'

        a. A: shui le./   mei   shui.
                sleep ASP/ not-have sleep
             'No(, I haven't)./ Yes(, I have).'

        b. * A: yizhi./   bu yizhi.
                always/ not always
             'Yes./ No.'

The adverb *yizhi*(always) cannot be used as the echo answers in 143 is not the problem of the adverb *yizhi*(always), since it can be echoed in the example 144. The difference whether the adverb '*yizhi(always)*' can be echoed as the echo answer to a yes/no question or not between 143 and 144 depends on the main verb in the yes/no question.

(144)   Q: ni   yizhi   ai   zhe ta   ma?
            you always love ASP him Q
        'Have you always loved him?'

        A: yizhi.
            always

         'Yes.'

3.3.6 Echo answers to tag questions

It is worth discussing echo answers to tag questions. As described above, a tag question contains a statement and a tag. There is a predicate in the statement, and the tag is composed of a word and an interrogative feature. The word in the tag is usually a verb, such as '*shi*(be)', or an adjective '*hao*(good)', or an adjective '*dui*(right)'. The interrogative feature can be realised by a yes/no question particle or an A-not-A form. As mentioned previously, a verb is not necessary in a sentence in Mandarin. Therefore, the statement can either have a verb or not. In this way, echo answers to tag questions can echo some words, such as a verb, or an adjective, or an adverb, in the statement with the polarity, or echo the verb or the adjective in the tag with the polarity. The echo answer that echoes the word in the statement with the polarity is not unacceptable, but the echo answer to a tag question usually echoes the word in the tag with the polarity. When the echo answer echoes the word in the statement with the polarity, the negative echo answer is more acceptable than the affirmative echo answer.

In examples 145, there is a verb, *yuanyi*(will), in the statement and the adjective *dui*(right) in the tag. The echo answer can echo the verb *yuanyi*(will) with the polarity, as in answer 145b, or the adjective *dui*(right) with the polarity, as in answer 145a. In example 146, the verb *xie*(write) is in the statement, and the verb *shi*(be) is in the tag. The echo answer can echo either verb with the polarity as the echo answer, such as in answers 146a and 146b.

(145) Q: ni   yuanyi bang wo, dui   ma?
        you will   help me right Q
     'You will help me, right?'

    a. A: dui./ bu dui.
          right/ not right
       'Yes./ No.'

    b. A: yuanyi./ bu yuanyi.
          will/   not will
       'Yes./ No.'

(146)　Q: ni　xie　wan　lunwen le,　shi ma?
　　　　　you write finish paper　ASP be　Q
　　　　'You have finished your paper, right?'

　　　a.　A: shi./ bu　shi.
　　　　　　be/　not bet
　　　　　'Yes./ No.'

　　　b.　A: xie　wan　le./　mei xie　wan.
　　　　　　write finish ASP/ not write finish
　　　　　'Yes, I have finished./ No, I haven't.'

If a non-verb declarative sentence turns into a tag question, the echo answer can echo both the word in the tag part and the adjective in the statement with the polarity. In example 147, the statement only contains a DP *ni*(you) as the subject and an adjective *shufu*(comfortable) with the negation *bu*(not). The tag is composed of an adjective *dui*(right) and the yes/no particle *ma*. Echo answer 147a echoes the word *right* with the polarity as the echo answer. The answer can echo also the adjective *shufu*(comfortable) with the polarity as the echo answer, such as in answer 147b.

(147)　Q: ni　bu shufu,　　dui　ma?
　　　　　you not comfortable right Q
　　　　'You are not comfortable, right?'

　　　a.　A: dui./　bu　dui.
　　　　　　right/ not right
　　　　　'Yes./ No.'

　　　b.　A: shufu　　　a./　　bu　shufu.
　　　　　　comfortable PTCL/ not comfortable
　　　　　'Yes./ No.'

In example 148, the statement does not have a verb, but contains the DP *huli*(fox) and the AdjP *hen congming*(very clever). The tag is composed of the verb *shi*(be) and the yes/no question particle *ma*. The echo answer can echo the verb *shi*(be) with the polarity as the answer, as in answer 148a. The echo answer can also echo the adjective *congming*(clever) with the polarity, as in answer 148b.

(148)   Q: huli hen congming, shi ma?
         fox very clever   be Q
      'The fox is very clever, isn't it?'

     a. A: shi./ bu shi.
          be/ not be
       'Yes./ No.'

     b. A: hen congming./ bu congming.
          very clever/   not clever
       'Yes./ No.'

Echo answers are the same when the tag is in the A-not-A form in a tag question. Echo answers are unanimously acceptable to echo the A part in the A-not-A tag with the polarity. In example 149, the tag is in the A-not-A form with the verb *shi*(be) as the A-part. Echoing the A part – *shi*(be) – with the polarity as the echo answer, such as in answer 149a, is the most acceptable answer. If the answer echoes the verb in the statement '*kan wan*(watch finish)' with the polarity, such as in answer 149b, they are acceptable as well.

(149)   Q: ni   yijing   kan   wan   zhe bu dianying le,   shi bu shi?
         you already watch finish this CL movie   ASP be not be
      'You have already watched this movie. Is that right?'

     a. A: shi./ bu shi.
          be/ not be
       'Yes./ No.'

b. A: kan   wan le./   mei kan   wan.
   watch finish ASP/ not watch finish
   'Yes./ No.'

In example 150, the tag is made by the adjective *dui*(right) as the A part in the A-not-A tag. The echo answer can echo either the A part in the tag '*dui*(right)' with the polarity or the modal verb '*neng*(can)' in the statement with the polarity.

(150) Q: fengmi bu neng yong re   shui   chongpao, dui   bu dui?
           honey   not can use   hot water brew   right not right
       'Honey cannot be brewed with hot water. Is that right?'

   a. A: dui./ bu dui.
          right/ not right
       'Yes./ No.'

   b. A: neng./ bu neng.
          can/   not can
       'Yes./ No.'

3.3.7   Echo answers to questions containing *de* structures

The structure containing the word '*de*(得)' in Mandarin needs to be discussed in detail from the perspective of the yes/no questions and the answers containing *de* structures.

In example   151, the main verb *xiao*(smile) is followed by the word *de* and an adjective *tian*(sweet). It is acceptable to echo the entire *de* structure '*xiao de tian*(smile sweetly)' with the polarity as the answer, as in answer 151b. However, the shortest echo answer only echoes the adjective *tian*(sweet) with the polarity, as in answer 151a. It is not acceptable to only echo the main verb *xiao*(smile) with the polarity, as in answer 151c.

(151) Q: wo xiao de tian   ma?
           I   smile DE sweet Q

'Do I smile sweetly?'

a. A: tian./ bu tian.
        sweet/ not sweet
    'Yes./ No.'

b. A: xiao de tian./ xiao de bu tian.
        smile DE sweet/ smile DE not sweet
    'Yes./ No.'

c. * A: xiao./ bu xiao.
          smile/ not smile
    'Yes./ No.'

d. * A: xiao de./ xiao bu de./ bu xiao de.
          smile DE/ smile not DE/ not smile DE
    'Yes./ No./ No.'

e. * A: de tian./ de bu tian.
          DE sweet/ DE not sweet
    'Yes./ No.'

However, in example 152, in which the word *de* is in the structure 'v + de + v', it is not acceptable to echo neither of the verbs alone with the polarity to be the echo answer, such as in answers 152b and 152c. The only acceptable concise echo answer is to echo the entire *de* structure with the polarity, namely, '*ban de dong*(carry DE move)', such as in answer 152a.

(152) Q: ni   ban   de dong zhe ge chen   xiangzi ma?
           you carry DE move this CL heavy box   Q
       'Can you carry this heavy box?'

    a. A: ban   de dong./ ban   bu dong.
           carry DE move/ carry not move

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'Yes./ No.'

b. * A: dong./ bu dong.
     move/ not move
  'Yes./ No.'

c. * A: ban./ bu ban.
     carry/ not carry
  'Yes./ No.'

d. * A: ban de./ ban bu de./ bu ban de.
     carry DE/ carry not DE/ not carry DE
  'Yes./ No./ No.'

e. * A: de dong./ de bu dong.
     DE move/ DE not move
  'Yes./ No.'

Examples 151 and 152 demonstrate that there are two *de* in the similar surface structure 'X + *de* + X' with different usages and meanings. In a sentence, since there are two usages and meanings of *de*, the *de* structure can provoke different interpretations, which leads to different echo answers to the yes/no question. For example, the yes/no question in example 153 has two interpretations. The *de* follows the verb *chang*(sing) and is followed by an adverb *hao*(well).

(153)   Q: zhe shou ge, ta chang de hao ma?
       this CL song he sing   DE well Q
   'interpretation1: Does he sing this song well?'

   'interpretation2: Is he able to sing this song well?'

The entire *de* structure can convey the meaning 'singing to a good degree' as the first interpretation. The structure can be interpreted also as 'the ability to sing well', such as in

the second interpretation. When the yes/no question conveys the first interpretation, the answers are as in example 154. It is not acceptable to only echo the main verb *chang*(sing) with the polarity as the echo answer. Echoing the entire *de* structure with the polarity is acceptable as the echo answer, as in answer 154b, and the overt negative polarity is to the left of the adverb *hao*(well) and following the *de*. The shortest echo answer can only echo the adverb *hao* with the polarity, as in answer 154a.

(154)   Q: zhe shou ge,   ta chang de   hao ma?
            this CL   song he sing   DE well Q
        'Does he sing this song well?'

    a.   A: hao./ bu hao.
        well/ not well
      'Yes./ No.'

    b.   A: chang de   hao./ chang de   bu   hao.
        sing   DE well/ sing   DE not well
      'Yes, he does./ No, he doesn't.'

    c.   * A: chang./ bu   chang.
        sing/   not sing
      'Yes./ No.'

However, in example 155, which contains the second interpretation, it is not acceptable to only echo the adverb *hao*(well) with the polarity, as in answer 155a. Only echoing the main verb *chang*(sing) with the polarity, such as in answer 155c, is not acceptable, either. The shortest echo answer to this yes/no question is answer 155b, which echoes the entire *de* structure '*chang de hao*(sing DE well)' with the polarity. Unlike the negative entire *de* answer in 154b, the negation *bu*(no) replaces the *de* forming the negative echo answer as '*chang bu hao*(sing not well)' in answer 155b when the *de* structure conveys the ability interpretation.

(155) Q: zhe shou ge,   ta chang de hao ma?
         this CL   song he sing   DE well Q
      'Is he able to sing this song well?'

    a. * A: hao./ bu hao.
          well/ not well
     'Yes./ No.'

    b. A: chang de hao./ chang bu hao.
        sing   DE well/ sing   not well
     'Yes(, he is able to sing this song well)./ No(, he is not able to sing this song well).'

    c. * A: chang./ bu chang.
         sing/   not sing
     'Yes./ No.'

3.4 Polarity-based Answer System and Truth-based Answer System

Another parameter proposed by Holmberg (2012, pp. 53-54) regarding answers to yes/no questions concerns how to confirm negative yes/no questions. There are generally two systems to confirm the negation in yes/no questions: one is the polarity-based/positive-negative system, the answers to which are 'based on the polarity of the sentence answer'; the other is the truth-based/agreement-disagreement system, the answers to which are 'determined by agreement with the truth value of the proposition which is implied by the question'. English follows the polarity-based answer system. That is, the particle answers to yes/no questions in English are according to the syntactic polarity feature of the sentential answer. Languages that employ the truth-based answer system, such as Japanese, use affirmative answers 'to accept the truth value of the implied proposition in the question or a negative response to counter it' (Jones, 1999, pp. 8-14).

Mandarin employs both the polarity-based answer system and the truth-based answer system for answering yes/no questions. Echo answers follow the polarity-based answer system. In example 156, the echo answers *xihuan*(like) and *bu xihuan*(not like) are derived from the full sentential answers. The polarity of the echo answer absolutely corresponds with the polarity of the sentential answer. Naturally, the echo answer in Mandarin is in the polarity-based answer system.

(156)   Q: ni   bu xihuan chi qiaokeli   ma?
             you not like   eat chocolate Q
         'Don't you like to eat chocolate?'

   a. A: (wo) xihuan (chi qiaokeli).
              I   like   eat chocolate
         'Yes(, I like to eat chocolate).'

   b. A: (wo) bu xihuan (chi qiaokeli).
              I   not like   eat chocolate
         'No(, I don't like to eat chocolate).'

However, the situations for the particle answers, namely, *en* and *eñ*, are more complex, since the particle answers can employ both the polarity-based answer system and the truth-based answer system.

3.5   Particle Answers in the Polarity-based Answer System and the Truth-based Answer System

Particle answers can be used to answer yes/no questions as well. However, there are some differences between answering affirmative yes/no questions and answering negative yes/no questions for particle answers.

In example 157, the question is an affirmative yes/no question formed by the yes/no particle *ma*.

(157) Q: ta gei ni   fa   youjian le   ma?
           he to you send email   ASP Q
        'Did he send you emails?'

     a. A: en.
         Aff
       'Yes(, he sent emails to me).'

     b. A: eñ.
         Neg
       'No(, he didn't send emails to me).'

     c. A: en, (ta) (gei wo) fa   (youjian) le.
         Aff he   to I   send   email   ASP
       'Yes, he sent emails to me.'

     d. A: eñ, (ta) mei (gei wo) fa   (youjian).
         Neg he not to I   send email
       'No, he didn't send emails to me.'

     e. * A: en, (ta) mei (gei wo) fa   (youjian).
          Aff he not to I   send email
       'No, he didn't send emails to me.'

     f. * A: eñ, (ta) (gei wo) fa   (youjian) le.
          Neg he   to I   send email   ASP
       'Yes, he sent emails to me.'

Answer 157a is answered using an affirmative particle *en*, which only conveys the meaning that 'he sent emails to me'. It is same with answer 157c, which is the affirmative particle

en with the affirmative sentential answer. An affirmative particle *en* followed by a negative sentential answer, such as in example 157e, is unacceptable since it is semantically wrong; the sentential answer is negative. So, the affirmative polarity of the particle *en* is impossible from the sentential answer. However, if the affirmative particle *en* is to confirm the proposition in the yes/no question, then the affirmative particle answer *en* refers to the meaning that 'he sent emails to me', which does not correspond with the meaning of the following sentential answer. Therefore, answer 157e is unacceptable. In the same way, the negative particle *eñ* cannot be followed by an affirmative sentential answer, as in answer 157f. Answer 157b and answer 157d convey the same negative answer that, 'he didn't send emails to me'. Answer 157b is answered using the negative particle *eñ* only, which can exactly refer to the negative meaning. The negative particle can be answered with the sentential answer, as in answer 157d.

An affirmative yes/no question can be answered using particle answers only. The affirmative particle *en* only expresses the meaning – 'he sent emails to me' – as the affirmative answer, and the negative particle *eñ* conveys the meaning that, 'he didn't send emails to me'. The particle can be followed by the sentential expression. However, the affirmative particle *en* can only be followed by the affirmative sentential answer, and the negative particle *eñ* can only be followed by the negative sentential answer.

In example 158, the question is a negative yes/no question.

(158)   Q: ta mei gei ni   fa   youjian ma?
            he not to you send email   Q
        'Didn't he send you emails?'

   a. A: en.
          Aff
        'No(, he didn't send emails to me).'

   b. A: eñ.
          Neg
        'No(, he didn't send emails to me).'

c. A: en, (ta) mei (gei wo) fa   (youjian).
    Aff he not to I   send email
  'No, he didn't send emails to me.'

d. A: eñ, (ta) mei (gei wo) fa   (youjian).
    Neg he not to I   send email
  'No, he didn't send emails to me.'

e. ? A: en, (ta) (gei wo) fa   (youjian) le.
      Aff he   to I   send email   ASP
  'Yes, he did. /Yes, he sent emails to me.'

f. A: eñ, (ta) (gei wo) fa   (youjian) le.
    Neg he   to I   send email   ASP
  'Yes, he did. /Yes, he sent emails to me.'

The negative yes/no question in 158 can be answered only by particle answers such as in 158a and 158b. Answer 158a is only the affirmative particle *en* as the answer. The affirmative particle *en* in 158a only conveys the meaning that 'he didn't send emails to me', which confirms the proposition – 'he didn't send you emails' – in the question. Therefore, the solo affirmative particle answer *en* follows the truth-based answer system. Answer 158b can only be answered using the negative particle *eñ*. When the negative particle is used as the answer alone, it only expresses the meaning that, 'he didn't send emails to me', which seems that the solo negative particle answer employs the polarity-based answer system.

It should be noted that both the affirmative particle answer *en* and the negative particle answer *eñ*, in 158a and 158b, express the same meaning that, 'he didn't send emails to me'.

Answers 158c and 158d correspond with answers 158a and 158b respectively. Answers 158c and 158d contain both the particle answers and the sentential expressions that can derive the echo answers through ellipses. The additional sentential expressions make no difference to the interpretation of the particle answers. The sentential answers overtly express

the interpretation of the particle answers. Naturally, the affirmative particle answer *en* in answer 158c follows the truth-based answer system, and the negative particle answer *eñ* in answer 158d follows the polarity-based answer system.

In answer 158f, the negative particle *eñ* is followed by the affirmative sentential answer, which is grammatical and acceptable in Mandarin. The negative particle answer *eñ* follows the truth-based answer system, which disconfirms the proposition in the negative yes/no question – '*ta mei gei ni fa youjian*(he didn't send you mails)'. The answer can be referred to as 'the proposition that he didn't send me mails in the question is wrong, the fact is that he sent emails to me'.

Answer 158e looks strange to many Mandarin speakers, but it could be acceptable for some Mandarin speakers. The affirmative particle *en* is followed by an affirmative sentential answer. The proposition in the negative yes/no question is '*ta mei gei ni fa youjian*(he didn't send you emails)'. The sentential answer in 158e clearly reveals that, 'he sent emails to me', which disconfirms the proposition in the negative yes/no question. Thus, the particle answer following the truth-based answer system should be the negative particle *eñ*, such as in answer 158f. Therefore, the affirmative polarity of the particle *en* does not follow the truth-based answer system. The particle answer *en* corresponds with the affirmative polarity of the following sentential answer. Then, the particle answer *en* should employ the polarity-based answer system. This is the reason some Mandarin speakers accept answer 158e. Regarding why this answer is strange to the majority of Mandarin speakers, it is because the affirmative particle *en* is more universally acknowledged in the truth-based answer system, and is used to confirm the proposition in the question. Therefore, the polarity-based affirmative particle *en* which is derived from the affirmative sentential answer [3] is strange to some extent. Compared with the affirmative particle answer *en*, the negative particle answer *eñ* mainly conveys the meaning of negation. The negative particle *eñ* can negate the truth-value of the proposition as the truth-based particle answer, or it can negate the verb, adjective or some other types of word in the sentence as the polarity-based particle answer derived from the sentential answer [4]. Therefore, answer 158f is acceptable.

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[3]It will be discussed in Chapter 7.
[4]It will be discussed in Chapter 7.

The negative yes/no question can be answered using the particle answer only, in which the affirmative particle answer *en* follows the truth-based answer system confirming the proposition in the question, but the negative particle answer *eñ* employs the polarity-based answer system negating the main verb '*fa (youjian)*(send (emails))'. However, the affirmative particle answer in the truth-based answer system and the negative particle answer in the polarity-based answer system refer to the same meaning, such as 'he sent emails to me' in example 158. The particle answer and the echo answer, which are derived from the sentential answers, can co-exist as the answer to the negative yes/no question. The negative particle answer *eñ* can be followed by the negative sentential expression as the polarity-based negative particle answer, while it can be followed also by the affirmative sentential answer as the truth-based particle answer to negative yes/no questions to disconfirm the proposition. The truth-based affirmative particle answer *en* confirms the proposition in the yes/no question, and it is followed by the negative sentential expression to negative yes/no questions. When the particle *en* is followed by the affirmative answer to a negative yes/no question, the affirmative particle answer *en* is in the polarity-based answer system, which is not very acceptable for Mandarin speakers.

3.6 Summary

This chapter described the answers to yes/no questions in Mandarin, based on the distinguishing parameters proposed by Holmberg (2012, pp. 53-54).

According to the forms of the answers, there are particle answers and echo answer to yes/no questions. This thesis argues that *shi* and *bu shi*, which are acknowledged as particle answers in most existing research, are not particle answers in Mandarin, since *shi* not only expresses the affirmative polarity, but also conveys the lexical meaning. Mandarin does have affirmative particle answer *en*(嗯) in both oral and written forms. The negative particle answer is written as *eñ* in this thesis, which is oral and less formal. The echo answer echoes a part in the yes/no question with the polarity as the answer. Not only can the modal verbs and the verbs be echoed as the answers with the polarity, but also adjectives, prepositions and adverbs can be echoed with the polarity as echo answers in Mandarin.

Moreover, for some yes/no questions, echoing a single word is not acceptable as the answer. That is, a fixed structure such as the 'X + de + X' structure must be echoed as a whole with the polarity to be an acceptable echo answer when the *de* conveys the meaning of the ability.

According to the confirmation answers to the negative yes/no questions, particle answers may be in either the polarity-based answer system or the truth-based answer system. The affirmative particle answer *en* is in the truth-based answer system, which is used to confirm the proposition in the yes/no questions. The negative particle answer *eñ* is in the polarity-based answer system when it is used alone. The negative particle answer *eñ* can also be in the truth-based answer system to deny the proposition in the negative yes/no questions, but the sentential expression or the omitted sentential expression must be followed.

Chapter 4

Focus

4.1 Focus in Yes/No Questions

The term 'focus' used in this thesis is defined as the 'centre of attention'. That is, focus is the information that is highlighted in a sentence. The centre of attention in a question is the question variable (Holmberg, 2016, pp. 32-34, Chap. 2). This could be termed also as 'information focus', which is the new information in the discourse. For example, in the wh-question in example 159a, the variable element in the question is the wh-word *shenme*(what), which is the centre of attention, since the reason the speaker raises this question is to know the value of the variable element. The focus in the answer is *sanmingzhi*(sandwich), corresponding to the 'wh'-word in the question, and it is the new information. The rest of the answer, '*wo zaofan chi le*(I ate something for breakfast)', functions as the background to the focus. The wh-question in example 159a can be answered also using 159b, which only contains the focus. Since the omitted elements are all old information, it is not necessary for them to be kept in the answer; whereas, the focus provides new information that cannot be omitted.

(159)   Q: ni   zaofan   chi le   shenme?
           you breakfast eat ASP what
         'What did you eat for breakfast?'

     a. A: wo zaofan   chi le   sanmingzhi.
          I   breakfast eat ASP sandwich

'I ate sandwiches for breakfast.'

    b. A: sanmingzhi.
          sandwich
          'Sandwiches.'

Regarding a yes/no question, the variable element is the polarity. Example 160 is a yes/no question formed by the particle *ma*. The speaker asks whether the interlocutor wants to play a game with the speaker or not. The variable polarity is to the left of the main verb *xiang*(want), which is the unknown information. The information of the verb phrase '*wan yi ju youxi*(play a game)' and the phrase '*he wo*(with me)' are certain. Therefore, the focus is on the variable polarity with the main verb *xiang*(want). Answer 160a is the affirmative sentential answer, and answer 160b is the negative sentential answer. The shortest echo answer 160c only echoes the main verb *xiang*(wang) with the polarity. That is, the echo answer to a yes/no question cannot only echo the polarity, since the polarity is a null category. Positive polarity is a null category. The verb is needed to spell it out. Therefore, the verb *xiang*(want), which is to the right of the variable polarity, needs to be echoed also. Thus, the echo answer echoes the Polarity Phrase(abbreviated to PolP) [1]
, in which the Polarity head is variable.

(160)   Q: ni   xiang he   wo wan yi ju youxi ma?
           you want with me play one CL game Q

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[1]The term 'Polarity(Pol)' is first named by Holmberg (2012, p. 57), which can have affirmative value, negative value and open value. Open value means that it is neither affirmative nor negative value. In the syntactic derivation, the Polarity Phrase(abbreviated to PolP) whose head is Polarity is in the highest projection in the domain of TP, such as the derivation in 1.

(1)   TP
       /\
    DP   T'
         /\
       T   PolP
           /\
      Pol   vP
           /\
        v   VP
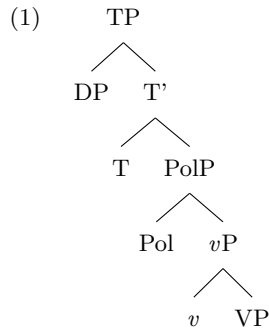
'Do you want to play a game with me?'

   a. A: wo xiang he   ni wan yi ju youxi.
        I   want with you play one CL game
    'Yes, I want to play a game with you.'

   b. A: wo bu xiang he   ni wan yi ju youxi.
        I   not want with you play one CL game
    'No, I don't want to play a game with you.'

   c. A: xiang./ bu xiang.
       wang/ not want
    'Yes./ No.'

In the yes/no question in example 161, the speaker knows that the interlocutor has eaten.

(161) Q: ni   chi de kaixin ma?
       you eat DE happy Q
    'Did you eat happily?'

   a. A: wo chi de kaixin./ wo chi de bu kaixin.
       I   eat DE happy/ I   eat DE not happy
    'Yes, I ate happily./ No, I didn't eat happily.'

   b. A: kaixin./ bu kaixin.
       happy/ not happy
    'Yes./ No.'

What the speaker does not know and wants to know is whether the interlocutor is happy or not because of eating. Additionally, the polarity scoping over to the left of '*kaixin*(happy)' is variable, which can be affirmative or negative, that is, *kaixin*(happy) or *bu kaixin*(not happy). In this way, the polarity of the adjective *kaixin*(happy) is the centre of attention, namely, the focus of this yes/no question. Answer 161a is the full sentential answer, while

answer 161b is the shortest echo answer, which only echoes the adjective *kaixin*(happy) with the polarity. That is, the focus of the yes/no question is echoed as the shortest echo answer.

In Mandarin, it is very common to use a serial verb construction in a sentence. That is, a single clause can have more than one verb or one verb phrase [2]. For example, in example 162, there are three verb phrases strung together: '*chu qu*(go out)', '*kan dianying*(watch movie)' and '*chi wanfan*(eat dinner)'. This phenomenon is allowed in Mandarin.

(162) wo he   ta yiqi   chu qu kan   dianying chi wanfan.
      I   and he together out go watch movie   eat dinner
       'He and I go out together to watch a movie and have dinner.'

However, when a yes/no question contains a serial verb construction, every verb phrase has a polarity to the left. Any polarity can be variable. The focus is possible on either PolP. The different focus of the yes/no question, that is, the focus on different PolPs, makes the answers to the yes/no questions different.

For example, the yes/no question in example 163 contains three verb phrases: '*qi zixingche*(ride bicycle)', '*qu tushuguan*(go library)' and '*xuexi*(study)'. In example 163, the VPs '*qu tushuguan*(go library)' and '*xuexi*(study)' are certain information. The speaker asks whether the interlocutor will ride a bicycle. That is, the polarity to the left of the verb *qi*(ride) is variable. Regarding the answers, answer 163b is the full sentential answer, in which the variable polarity is to the left of the verb *qi*(ride). The shortest echo answer can only echo the verb *qi*(ride) with the polarity, such as in answers 163c and 163d. In 163d, after negating the focused PolP in the yes/no question, the interlocutor can also provide the new correct information 'I will take a bus (to the library to study)'. Compared with the yes/no question, the new information is '*zuo gongjiaoche*(take a bus)', which reveals that the focus of the yes/no question is on the mode of travel and confirms that the polarity to the left of the VP *qi zixingche*(ride bicycle) is the focused variable polarity. In the surface

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[2]This thesis regards the serial verbs in Mandarin as a series of embedded *v*Ps, each of which can be merged with a Polarity head. They are only optionally merged with a Polarity head. In this thesis, I take the serial verbs in Mandarin as a series of embedded *v*Ps. It might be another possibility that the serial verbs are CPs with a PRO subject which can be further researched. However, due to lack of argument and analysis, I won't discuss about the other possibility.

structure, the shortest echo answer only echoes the verb qi(ride) with the polarity in the focused PolP.

(163) Q: ni   qi   zixingche qu tushuguan xuexi ma?
           you ride bicycle   go library   study Q
         'Will you ride a bicycle to the library to study?'

      a. A: en./ eñ.
          Aff/ Neg
        'Yes./ No.'

      b. A: wo (bu) qi   zixingche qu tushuguan xuexi.
          I   (not) ride bicycle   go library   study
        'Yes, I will ride a bicycle to the library to study./ No, I won't ride a bicycle to the library to study.'

      c. A: qi.
          ride
        'Yes.'

      d. A: bu qi. (wo zuo gongjiaoche qu tushuguan xuexi.)
          not ride   I   take bus   go library   study
        'No. (I will take a bus to the library to study).'

The surface structure of the yes/no question in example 164 is the same as the surface structure of the yes/no question in 163. However, the focus of the yes/no question in example 164 is on the PolP in which the polarity head is to the left of the VP 'qu $tushuguan$(go library)'. The VPs 'qi $zixingche$(ride bicycle)' and '$xuexi$(study)' are given information, but the information regarding the location is uncertain. The speaker is asking whether the interlocutor is going to the library. Therefore, in the full sentential answer 164b, the variable polarity is to the left of the verb qu(go). Answer 164c is the shortest affirmative echo answer, which echoes the verb qu(go) with the covert affirmative polarity. Answer 164d is the shortest negative echo answer: the negation bu(not) and the verb qu(go). In

answer 164d, in addition to the negative echo answer, the interlocutor can provide the new correct information in the full sentential expression, which confirms that the focus is on the locative information. The shortest answer only echoes the verb *qu*(go) with the polarity in the surface structure.

(164) Q: ni   qi   zixingche qu tushuguan xuexi ma?
         you ride bicycle   go library   study Q
      'Will you go to the library to study by bicycle?'

  a. A: en./ eñ.
         Aff/ Neg
       'Yes./ No.'

  b. A: wo qi   zixingche (bu) qu tushuguan xuexi.
         I   ride bicycle   (not) go library   study
       'Yes, I will go to the library to study by bicycle./ No, I won't go to the library to study by bicycle.'

  c. A: qu.
         go
       'Yes.'

  d. A: bu qu. (wo qi   zixingche qu jiaoshi   xuexi.)
         not go   I   ride bicycle   go classroom study
       'No. (I will go to the classroom to study by bicycle.)'

In example 165, the surface structure of the yes/no question is the same as the surface structures of the yes/no questions in examples 163 and 164. However, the focus of the yes/no question in example 165 is on the purpose of the interlocutor going out. The speaker knows that the interlocutor will go to the library by bicycle. The speaker is questioning whether the interlocutor is going to study in the library. The focus is on the PolP in which the polarity head is to the left of the verb *xuexi*(study). That is, the variable polarity is with the verb *xuexi*(study). In the full sentential answer 165b, the overt negation is to the

left of the verb *xuexi*(study). The shortest answer only echoes the verb *xuexi*(study) with the polarity, as in answers 165c and 165d. The interlocutor can, additionally, answer the full sentential answer with the new information, as in 165d. The new information '*jie yi ben shu*(borrow a book)' confirms that the focus of the yes/no question is the purpose of the interlocutor going out.

(165) Q: ni   qi   zixingche qu tushuguan xuexi ma?
           you ride bicycle   go library   study Q
        'Is it for studying that you will go to the library by bicycle?'

    a. A: en./ eñ.
           Aff/ Neg
        'Yes./ No.'

    b. A: wo qi   zixingche qu tushuguan (bu) xuexi.
           I   ride bicycle   go library   (not) study
        'Yes, I will go to the library by bicycle to study./ No, I won't go to the library by bicycle to study.'

    c. A: xuexi.
           study
        'Yes.'

    d. A: bu xuexi. (wo qi   zixingche qu tushuguan jie   yi ben shu.)
           not study   I   ride bicycle   go library   borrow one CL book
        'No. (I will ride a bicycle to the library to borrow a book.)'

In example 166, the surface structure of the yes/no question is the same as the surface structures of the yes/no questions in examples 163, 164 and 165. However, it is not acceptable to echo any verb that appears in the yes/no question alone with the polarity as the echo answer, such as in answers 166d and 166e.

(166) Q: ni   qi   zixingche qu tushuguan xuexi ma?
          you ride bicycle   go library   study Q
       'Is it true that you will ride a bicycle to the library for studying?'

   a. A: en./ eñ.
          Aff/ Neg
       'Yes./ No.'

   b. A: wo (bu) (shi) qi   zixingche qu tushuguan xuexi.
          I   (not) be   ride bicycle   go library   study
       'It is (not) true that I will ride a bicycle to the library to study.'

   c. A: shi./ bu shi.
          be/   not be
       'Yes./ No.'

   d. * A: qi./   qu./ xuexi.
           ride/ go/ study
       'Yes.'

   e. * A: bu qi./   bu qu./ bu xuexi.
           not ride/ not go/ not study
       'No.'

This is because the focus of the yes/no question in example 166 is on the truth value of the entire sentence. That is, the variable polarity is on the entire proposition. The interlocutor is required to judge the truth value of the entire proposition in the yes/no question. In this way, the yes/no question that contains a serial verb construction and is focused on the entire proposition has no echo answer. The question can only be answered using a particle answer, such as in answer 166a, or the full sentential answer, such as in answer 166b.

The yes/no question in example 166 can be answered using *shi*(be) and *bu shi*(not be). The answers '*shi*(be)' and '*bu shi*(not be)' were discussed in the previous chapter as not being particle answers since they contain a lexical word meaning of confirmation. The focus of the

yes/no question in example 166 is on the entire proposition, which requires the interlocutor to judge the truth value of the entire proposition in the yes/no question. Therefore, the verb *shi* with its polarity is in a position higher than the entire serial verb construction to confirm or deny the entire proposition, as in the full sentential answer 166b. Answer 166c is the answer after omission, but it is not an echo answer of the yes/no question, since the verb *shi* does not exist in the yes/no question.

4.2 The Focus Phrase in Answers to Yes/No Questions in Mandarin

The previous part introduced the 'focus', which is the 'centre of attention' according to Holmberg (2016, pp. 32-34, Chap. 2). This thesis proposes that a 'Focus Phrase(abbreviated to FocP)' is essential and necessary in yes/no questions and answers in Mandarin.

(167) Q: ni   qi   zixingche qu tushuguan xuexi ma?
      you ride bicycle   go library   study Q
  'Qa: Will you ride a bicycle to the library to study?'

  'Qb: Will you go to the library to study by bicycle?'

  'Qc: Is it for studying that you will go to the library by bicycle?'

  a. A: wo bu qi   zixingche qu tushuguan xuexi.
       I   not ride bicycle   go library   study
    'No, I won't ride a bicycle to the library to study.'

  b. A: wo qi   zixingche bu qu tushuguan xuexi.
       I   ride bicycle   not go library   study
    'No, I won't go to the library to study by bicycle.'

  c. A: wo qi   zixingche qu tushuguan bu xuexi.
       I   ride bicycle   go library   not study

'No, I won't go to the library by bicycle to study.'

For the example containing a serial verb construction, which is re-listed as example 167 above, the same surface structure of the yes/no question can have three interpretations based on the different focuses of the yes/no questions. The yes/no question feature is on the yes/no question particle *ma*, and based on Holmberg (2016, pp. 32-34, Chap. 2), while the focus of the yes/no question is on the variable polarity of its corresponding constituent. For the first interpretation Qa, the corresponding answer 167a reveals that the focus is on the PolP for the *v*P (or VP) '*qi zixingche*(ride bicycle)' – 'whether the interlocutor will ride a bicycle or not'. Regarding the second interpretation Qb, the corresponding answer 167b indicates that the PolP for the second *v*P (or VP) '*qu tushuguan*(go library)' is the focus of the yes/no question. The overt negative polarity is to the left of the second *v*P (or VP). In the third interpretation Qc, answer 167c implies that the PolP for the third *v*P (or VP) is the focus of the yes/no question since the variable polarity is with '*bu xuexi*(not study)'.

Therefore, in the yes/no question, there should be a focus functional head with a [Focus] feature that checks the unvalued [*u*Focus] on a PolP in the yes/no question. In example 167, there are three PolPs for the three *v*P (or VP), respectively, and the entire serial verb construction together, namely the TP, has a PolP as well. There are four PolPs in the yes/no question. The Focus head checks the unvalued [*u*Focus] on a PolP, marking that PolP as the variable element in this yes/no question.

In this kind of serial verb construction, since the affirmative polarity is covert, the possible positions of the negation in the structure is an indicator where there is a Polarity head. For example 167, the full sentential answers to the question contain the overt negation based on the different interpretations such as 167a, 167b and 167c. In the answers, the negation can occur in three positions which are to the left of *v*P '*qi zixingche*(ride bicycle)', '*qu tushuguan*(go library)', and '*xuexi*(study)'.' However, the negation can only occur in one of these three positions. In 168, the sentences which contain more than one negation in those three positions to the left of *v*P are ungrammatical in Mandarin. If there are actually CPs in this serial verb construction not *v*Ps, the negations negate their own *v*Ps in their own CPs should have no mutual interference. However, it is shown in the example 168

that only one negation in these three positions can occur. In this way, it is *v*Ps that are in the serial verb construction in Mandarin, not CPs.

(168)   a. * A: wo bu qi   zixingche bu qu tushuguan xuexi.
                  I   not ride bicycle   not go library   study
            'No, I will not ride a bicycle and will not go to the library to study.'

        b. * A: wo bu qi   zixingche qu tushuguan bu xuexi.
                  I   not ride bicycle   go library   not study
            'No, I will not ride a bicycle to the library and will not study.'

        c. * A: wo qi   zixingche bu qu tushuguan bu xuexi.
                  I   ride bicycle   not go library   not study
            'No, I will not go to the library by bicycle and will not study.'

        d. * A: wo bu qi   zixingche bu qu tushuguan bu xuexi.
                  I   not ride bicycle   not go library   not study
            'No, I will not ride a bicycle and will not go to the library and will not study.'

The derivation for the serial verb construction in 167 is shown in 169. The negation can only occur in one PolP head. That is, $PolP_1$, $PolP_2$ and $PolP_3$ in the derivation are three possible polarity positions, but only one position is allowed to be existed in a sentence. When the chosen PolP has an affirmative polarity head, it is spelt out covertly. If it is negation that takes the polarity head, it is overtly spelt out as 167.

(169)

```
        PolP₁
        /    \
     Pol₁    vP₁
            /    \
          v₁    PolP₂
                /    \
             Pol₂    vP₂
                    /    \
                  v₂    PolP₃
                        /    \
                     Pol₃    vP₃
```

(169) tree:
- PolP_1
  - Pol_1
  - $v\text{P}_1$
    - v_1
    - PolP_2
      - Pol_2
      - $v\text{P}_2$
        - v_2
        - PolP_3
          - Pol_3
          - $v\text{P}_3$
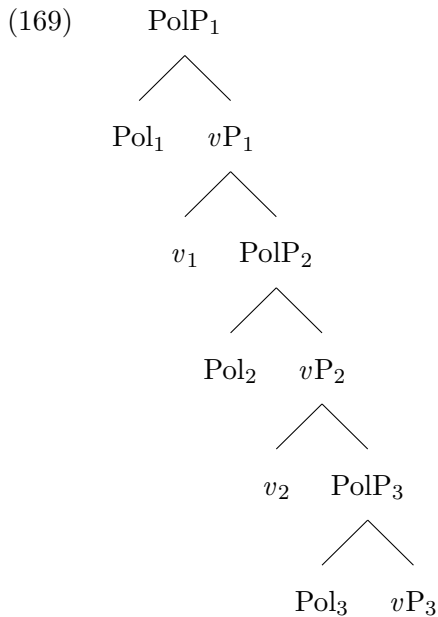
For the second interpretation, the [Focus] feature on the Focus head checks the [uFocus] on the PolP to the left of the second vP (or VP) *qu tushuguan*(go library). In the corresponding answer 167b, the overt negation *bu*(not) is to the left of the second vP (or VP) *qu tushuguan*(go library).

For a yes/no question, the yes/no question particle *ma* marks the sentence type as a yes/no question, and the checked [Focus] on the PolP marks what the yes/no question is asking about. In the answer, the covert affirmation or the overt negation is in the PolP head position with the checked [Focus] feature. In this thesis, the FocP is proposed in the highest position in the domain of the CP. In yes/no questions and full sentential answers, the [Focus] feature on the FocP is weak; it only checks the [uFocus] on a PolP. However, in the echo answers, the [Focus] feature is strong, which not only checks the [uFocus] feature on the PolP but also attracts the PolP to the specifier of the FocP. According to Merchant et al. (2001) and Holmberg (2016), since the deleted part is identical to the corresponding part in the yes/no question, the full sentential answer undergoes several steps of ellipsis to derive the shortest echo answer once the focused PolP is moved to the specifier of the FocP.

(170)   Q: ni   qi   zixingche qu tushuguan xuexi ma?
            you ride bicycle   go library   study Q

'Qa: Will you ride a bicycle to the library to study?'

'Qb: Will you go to the library to study by bicycle?'

'Qc: Is it for studying that you will go to the library by bicycle?'

a. A: qi./   bu qi.
       ride/ not ride
    'Yes(, I will ride a bicycle to the library to study)./ No(, I won't ride a bicycle
    to the library to study).'

b. A: qu./ bu qu.
       go/   not go
    'Yes(, I will go the the library to study by bicycle)./ No(, I won't go to the
    library to study by bicycle).'

c. A: xuexi./ bu xuexi.
       study/ not study
    'Yes(, I will go to study in library by bicycle)./ No(, I won't go to study in the
    library by bicycle).'

The answers in example 170 are the corresponding echo answers to the full sentential an-
swers in example 167. The syntactic derivation of answer 167a is displayed in examples
171 and 172. In the full sentential answer, the [Focus] is a weak feature on the Focus head.

(171)

```
                CP
               /  \
              C   FocP
                    \
                    Foc'
                   /    \
                 Foc    TP
                       /   \
                     DP     T'
                      |    /  \
                     wo  T    PolP
                     (I)     /     \
                           Pol      vP
                            |      /   \
                           Neg  <DP>    v'
                            |    |     /   \
                           bu  <wo>  V+v    VP
                          (not)  (I)  |    /   \
                                     qi  DP     V'
                                   (ride) |    /   \
                                    zixingche <V>  vP₄
                                    (bicycle)  |    △
                                             <qi>  ...
                                             (ride)
```

(172)

```
                     vP₄
                    /    \
                 <DP>     v'
                   |     /   \
                 <wo>  V+v     VP
                  (I)   |    /    \
                       qu  DP      V'
                      (go) |      /   \
                     tushuguan <V>    vP
                     (library)  |    /   \
                              <qu> <DP>   v'
                              (go)   |   /  \
                                   <wo> V+v  VP
                                    (I)  |    |
                                       xuexi <V>
                                      (study) |
                                           <xuexi>
                                            (study)
```
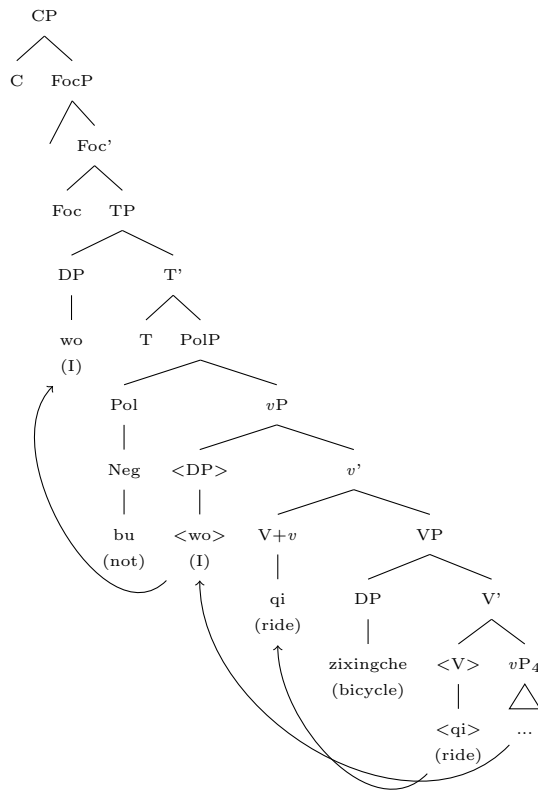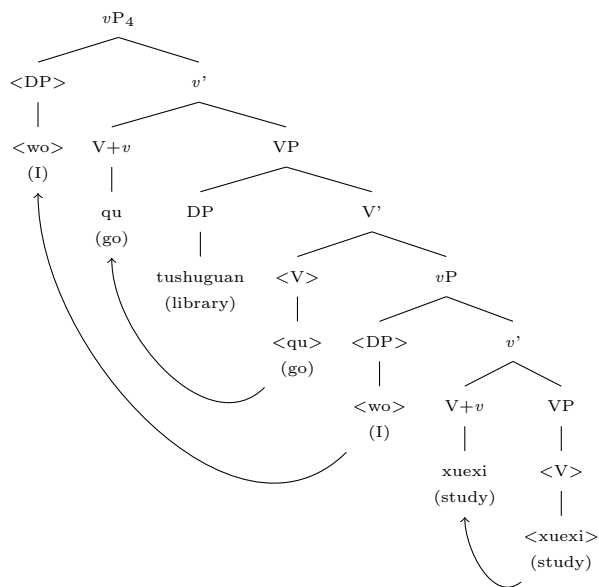
To derive the echo answer 170a, it undergoes the following steps, after which the echo answer *bu qi* (not ride) remains as the answer.

Step 1: The [Focus] feature on the Focus head is strong, which attracts the PolP to the specifier of the FocP.

Step 2: Delete the TP.

Step 3: Delete the highest VP in the PolP.

Regarding the second interpretation, the derivation of the full negative sentential answer 167b is displayed in example 173. The variable polarity is to the left of the second vP qu $tushuguan$(go library). In the echo answer, the [Focus] feature is strong and attracts the PolP to the specifier of the FocP. Then, the TP is deleted. In the PolP, which has moved to the specifier of the FocP, after the highest VP is deleted, only the negation bu(not) and the verb qu(go) remain as the echo answer 170b.

(173)
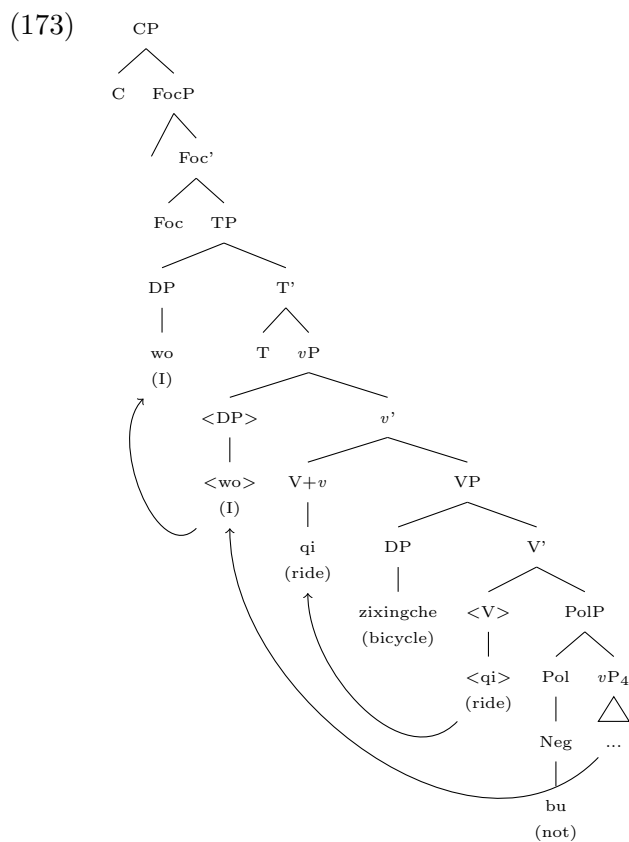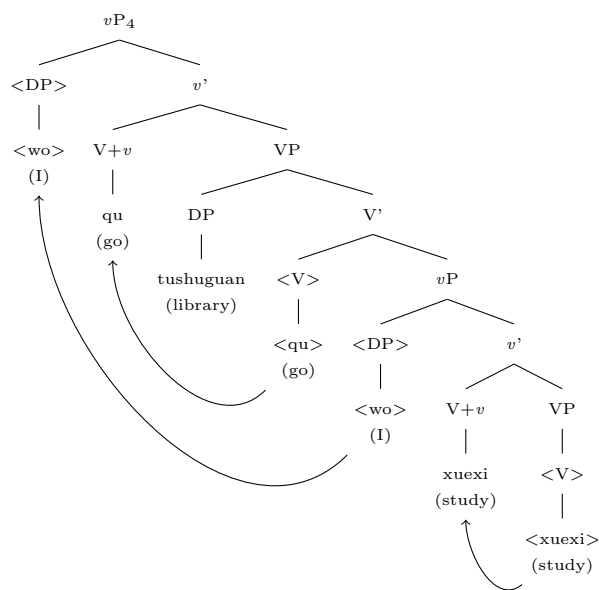
Similarly, in the third interpretation of the yes/no question in example 167, the focus is on the PolP in which the variable polarity head is to the left of the third vP. The echo answer to this interpretation only echoes the verb *xuexi*(study) in the third vP, with the polarity, as in answer 170c. The full negative sentential answer 167c is derived in derivation 174. In the echo answer, the [Focus] feature on the FocP becomes a strong [Focus] feature. The strong [Focus] feature on the Focus head attracts the PolP to the specifier of the FocP. Once the entire TP is deleted, the echo answer *bu xuexi*(not study) remains. If the verb *xuexi*(study) has an object such as *xuexi yuyanxue*(study linguistics), the sentence would further delete the VP in the PolP to obtain the echo answer.

(174)

```
                    CP
                  /    \
                 C     FocP
                       /
                     Foc'
                    /    \
                 Foc      TP
                         /    \
                        DP     T'
                        |     /  \
                        wo   T    vP
                        (I)      /    \
                              <DP>     v'
                               |      /    \
                             <wo>   V+v     VP
                              (I)    |     /    \
                                     qi   DP     V'
                                   (ride) |     /    \
                                    zixingche <V>    vP
                                    (bicycle) |     /   \
                                            <qi>  <DP>    v'
                                           (ride)  |     /   \
                                                 <wo>  V+v    VP
                                                 (I)    |    /    \
                                                       qu   DP     V'
                                                      (go)  |     /    \
                                                         tushuguan <V>  PolP₄
                                                         (library) |    △
                                                                 <qu>  ...
                                                                 (go)
```

$PolP_4$

```
              PolP₄
             /     \
           Pol      vP
            |      /    \
           Neg  <DP>     v'
            |    |      /    \
           bu  <wo>   V+v     VP
          (not) (I)   |      /
                     xuexi  <V>
                    (study)  |
                          <xuexi>
                          (study)
```
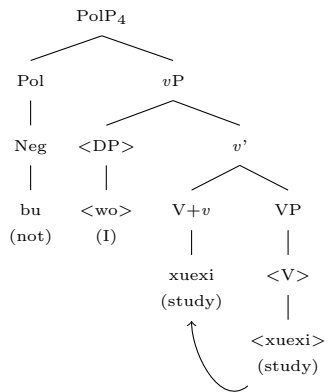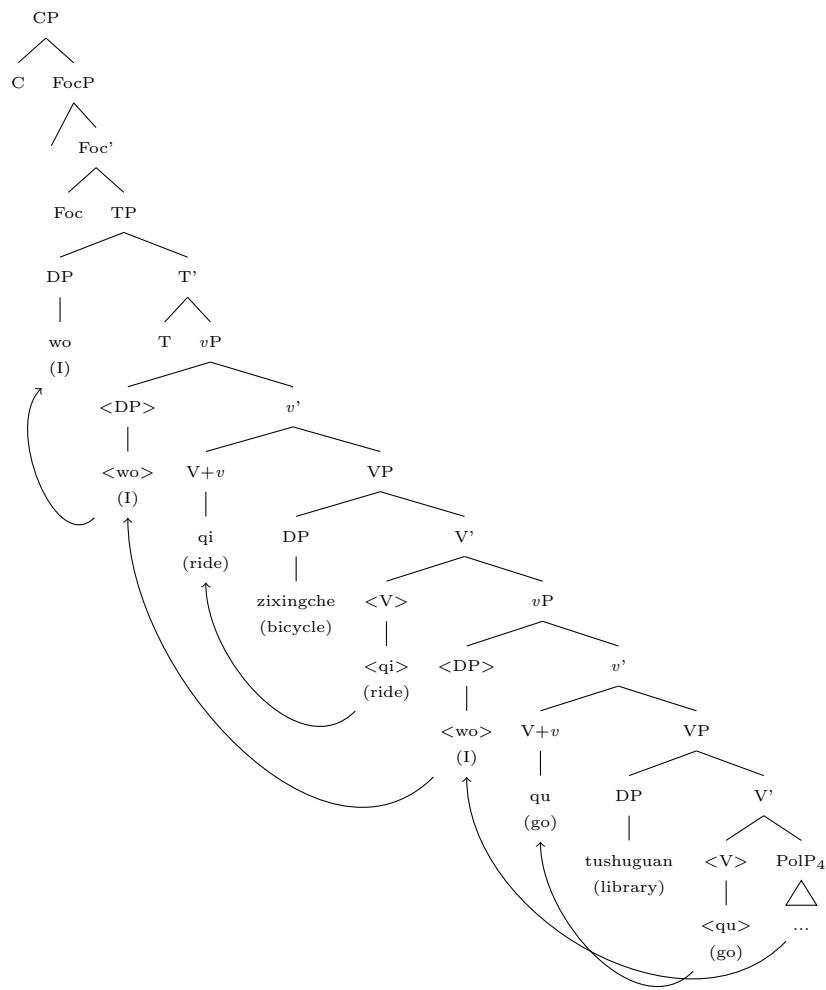
The core proposition is that there is a FocP in the highest position in the domain of the CP, which contains a [Focus] feature that checks the [uFocus] on a PolP in the lower domain. In the yes/no question and the full sentential answer, the [Focus] feature on the FocP is weak;

but in the echo answer, the [Focus] feature becomes a strong feature that not only checks the [uFocus] on the PolP but also attracts the PolP to the specifier of the FocP. Then, the sentence undergoes several steps of deletion to finally obtain the echo answer.

4.3   Summary

The yes/no questions and answers containing serial verb constructions reveal that there is a Focus in the sentence that checks the unvalued [Focus] feature on a PolP. Therefore, this thesis proposes that there is a FocP above the TP and in the highest position in the domain of the CP, and that the Focus head contains a [Focus] feature that checks the [uFocus] on a PolP in the sentence. In the yes/no question and the full sentential answer, the [Focus] feature on the Focus head is weak; but in the echo answer, the [Focus] feature becomes strong, which attracts the PolP with the unvalued [Focus] to the specifier of the FocP to check the unvalued [Focus] feature. Then, the sentence undergoes several ellipses to obtain the echo answer. The next chapter will detailedly derive the echo answers in various conditions.

Chapter 5

The Syntax of Echo Answers

5.1 Literature Review

5.1.1 Huang's analyses: Variables bound by empty topics and VP-ellipsis

Huang (1984) discusses empty pronouns in different positions in a sentence, such as answers 175a to 175d to the yes/no question in example 175.

(175)   Q: Zhangsan kanjian Lisi le   ma?
            Zhangsan see   Lisi ASP Q
         'Did Zhangsan see Lisi?'

    a. ta kanjian ta le.
       he see   he ASP
        'He saw him.'

    b. *e*   kanjian ta le.
       [he] see   he ASP
        '[He] saw him.'

    c. ta kanjian *e*   le.
       he see   [he] ASP
        'He saw [him].'
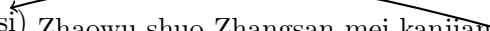
d. *e*   kanjian *e*   le.
 [he] see   [he] ASP
   '[He] saw [him].'

Huang (1984, pp. 549-557) argues that Mandarin allows pro-drop. The structural subject in a sentence is not necessary in Mandarin. The empty pronoun in the subject position can be either a genuine empty pronoun or a variable bound by an empty topic. However, there are no languages that allow a genuine empty object pronoun. According to the principle of Disjoint Reference (a pronoun must be free in its governing category) and the Generalised Control Rule (co-index an empty pronominal with the closest nominal element), the empty pronoun in the object position in Mandarin cannot be a genuine empty pronoun but must be variable bound by an empty topic that refers to a discourse topic (Huang, 1984, pp. 549-572).

(176)   Q: Zhangsan kanjian Lisi le   ma?
         Zhangsan see   Lisi ASP Q
       'Did Zhangsan see Lisi?'

(177)   A: Zhaowu shuo Zhangsan mei kanjian *e*.
         Zhaowu say   Zhangsan not see   *e*
       'Zhaowu says that Zhangsan does not see him.'

For example, in example 177, as an answer to the yes/no question in example 175 repeated as example 176, if the empty object in the embedded sentence is a genuine empty pronoun, it can be bound by the subject of the embedded clause *Zhangsan* and refer to *Zhangsan*. However, this condition is not available in Mandarin. The empty object in the embedded sentence must be a variable and be bound by the empty topic, which can only refer to *Lisi* in the question, as in example 178.

(178)   (Topic-Lisi) Zhaowu shuo Zhangsan mei kanjian *e*.
       (As for Lisi,) Zhaowu says that Zhangsan not see him.

Therefore, in the same way, the empty objects in answers 175c and 175d are variables bound by the empty discourse topic *Lisi* in example 175.

Huang (1991) provides several analyses about the null object. Some analyses continue to focus on the properties of the null object. One analysis discusses the VP instead of only the null object, which is preferred by Huang. He noticed that Mandarin and English share a similarity, in that a null object can occur in a situation in which a VP gap exists. In example 179, the second clause of the English translation places do-support to the INFL position and undergoes a VP-ellipsis. Correspondingly, Huang proposes that Mandarin can undergo the process in a similar manner. That is, the verb in Mandarin is moved to an abstract INFL node in the second clause, and then the empty VP, not the null object, is omitted.

(179)   Zhangsan kanjian-le tade mama, Lisi ye   kanjian-le (tade mama).
        Zhangsan see-ASP   his   mother Lisi also see-ASP   (his   mother)
          'Zhangsan saw his mother, and Lisi did, too.'

(180)   a. Zhangsan kanjian-le tade mama, Lisi ye   kanjian-le (Zhangsan-de mama).
           Zhangsan see-ASP   his   mother Lisi also see-ASP   (Zhangsan's   mother)
             'Zhangsan saw Zhangsan's mother and Lisi saw Zhangsan's mother too.'

        b. Zhangsan kanjian-le tade mama, Lisi ye   kanjian-le (Lisi-de mama).
           Zhangsan see-ASP   his   mother Lisi also see-ASP   (Lisi's   mother)
             'Zhangsan saw Zhangsan's mother and Lisi saw his own mother.'

The ambiguous meanings of the sentence reveal that the null object is a result of VP-ellipsis. For example, example 179 has two interpretations because of the deleted pronoun *tade*(his) in the DP '*tade mama*(his mother)'. One interpretation is the strict interpretation: 180a. Another interpretation is the sloppy interpretation: 180b. Analysed using the lambda expression in Logical Form, the antecedent empty VP can be expressed as in example 181, in which the pronoun *his* refers to *Zhangsan*, corresponding to the first interpretation of the sentence. Furthermore, the antecedent empty VP can be expressed as in example 182,

in which the pronoun *his* is a variable bound by the lambda predicate – either *Zhangsan* or *Lisi* in example 179 – resulting in the second interpretation. If the empty category is the null object, it cannot refer to the lambda predicate, but only to the individual *Zhangsan's mother*. In this condition, the sentence loses the sloppy interpretation. However, if the verb is raised to the INFL position and then the null VP is deleted, these two interpretations will all be kept (Huang, 1991).

(181) $\lambda x(x$ saw his mother)

(182) $\lambda x(x$ saw x's mother)

Huang (1991) notes also that some null objects are definitely not applicable to this VP-ellipsis. This VP-ellipsis analysis can merely be used in some null objects conditions.

5.1.2   Cheng's analysis: Argument ellipsis

Cheng (2011) attempts to prove that Mandarin allows argument ellipsis. Null arguments such as the null subject and the null object in Mandarin are derived by argument ellipsis.

Japanese and Korean have been proven to allow argument ellipsis. Cheng (2011) notes that some constructions in Mandarin share similar behaviours to those in Japanese and Korean. One similarity between Mandarin, Japanese and Korean is the extra discourse interpretation, such as in example 183 (Cheng, 2011, p. 232).

(183)   a. Zhangsan da le   ziji de xiaohai zhidao...
           Zhangsan hit ASP self of child   after
            'After Zhangsan hit his child...'

        b. Lisi haishi bu gan da *e.*
           Lisi still   not dare hit *e*

(184)   a. Lisi still does not dare to hit his (Zhangsan's) child. (strict interpretation)

b. Lisi still does not dare to hit his (Lisi's) child. (sloppy interpretation)

c. Lisi still does not dare to hit Zhangsan. (discourse interpretation)

Example 183b can have three interpretations, as displayed in example 184 (Cheng, 2011, p. 233). In addition to the strict interpretation and the sloppy interpretation, Mandarin, like Korean, can also have the discourse interpretation, which cannot be analysed by VP-ellipsis.

Another similarity between Mandarin, Japanese and Korean is the exclusion of adjuncts, such as in example 185. Since the adjunct is adjoined to the VP, if the null object is derived by VP-ellipsis, the adjunct *henkuaide*(quickly) should also be omitted.

(185)   a. Zhangsan henkuaide chi-wan-le   fan.
          Zhangsan quickly   eat-finish-asp rice
            'Zhangsan finished the rice quickly.'

        b. Lisi ye   chi-wan-le   *e*.
          Lisi also eat-finish-asp *e*
            'Lisi also finished the rice. ($\neq$ Lisi also finished the rice quickly.)'

Cheng (2011) provides two additional pieces of evidence to prove that argument ellipsis is available in Mandarin. The null object is derived by argument ellipsis but not VP-ellipsis.

The first piece of evidence is in the sentence containing the post-verbal duration/frequency phrase. In example 186, 186b has both strict and sloppy interpretations. However, in 186b, the object is null but the post-verbal duration/frequency phrase *liangci*(two times), which is not adjoined to the vP but is inside the VP, still appears in the sentence. If the null object is derived by VP-ellipsis, the post-verbal duration/frequency phrase inside the VP should also be omitted with the VP.

(186)   a. Zhangsan da le   ziji de xiaohai san   ci.
          Zhangsan hit ASP self of child   three time

'Zhangsan hit his child three times.'

b. Lisi zeshi   da le   *e* liang ci.
   Lisi whereas hit ASP *e* two   time
   'Whereas Lisi hit *e* two times.'

The second piece of evidence is displayed in the sentence that contains the double objects
and the dative case. In both examples 187 and 188, quoted from Cheng (2011, p. 235),
the indirect object(or dative) is null, and both 187b and 188b have the strict and sloppy
interpretations. Since both the double objects are inside the VP, if the null indirect object
is derived by VP-ellipsis, there is no reason the direct object would be left, nor why the
sloppy interpretation could be captured.

(187)   a. Zhangsan song ziji de xiaohai Mali de zhaopian.
           Zhangsan send self of child   Mary of photo
             'Zhangsan sent his child Mary's photo.'

        b. Lisi zeshi   song *e* Xiaomei de zhaopian.
           Lisi whereas send *e* Xiaomei of photo
             'Whereas Lisi sent *e* Xiaomei's picture.'

(188)   a. Zhangsan song ziji de zhaopian gei Mali.
           Zhangsan send self of photo   to Mary
             'Zhangsan sent his photo to Mary.'

        b. Lisi zeshi   song *e* gei Xiaomei.
           Lisi whereas send *e* to Xiaomei
             'Whereas Lisi sent *e* to Xiaomei.'

5.1.3 Holmberg's analyses: Big ellipsis or pro-drop and VP-ellipsis

Holmberg (2016) fully discusses the syntax of yes/no questions and answers, especially fo-
cusing on the answers to yes/no questions.

There is a difference between languages concerning the form of answers to yes/no questions; namely, answering with a particle such as *yes* or *no* in English or answering by echoing the finite verb in the questions such as in Mandarin (Holmberg, 2012, 2016). Examples 189 and 190 are the same yes/no question, and its answers, in which we can clearly see that English conveys the affirmative answer via the affirmative particle *yes*; whereas, Mandarin affirmatively answers the yes/no question by echoing the finite verb *hui*(can).

(189)   Q: Can you swim?
        A: Yes.

(190)   Q: ni   hui youyong ma?
           you can swim   Q
          'Can you swim?'

        A: hui.
           can
          'Yes.'

Furthermore, answering with only one particle or one echoed verb is not the only available answer to yes/no questions. As discussed previously, all the answers in example 192 can be the answer to the question in example 191. English, also, can answer the question in example 193 with any of the answers in 194.

(191)   Q: ni   you shijian ma?
           you have time   Q
          'Do you have time?'

(192)   a. wo you shijian.
             I   have time
              'I have time.'

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b. you   shijian.
   have time
      '[I] have time.'

c. wo you.
   I   have
      'I have [time].'

d. you.
   have
      '[I] have [time].'

(193)   Q: Do you have time?

(194)   a. A: Yes.

      b. A: I do.

      c. A: Yes, I do.

      d. A: I have time.

      e. A: Yes, I have time.

The leading idea in Holmberg (2016) is that answers to yes/no questions, no matter what form they take, are all derived by ellipsis from their full sentential expressions.

Generally, the affirmative answer *yes* in example 195 is derived from the complete answer, 'Yes. She is beautiful.' Since the clause is identical to the clause in the question, it is elided.

(195) Q: Is she beautiful?

    A: Yes. /No.

Regarding languages in which yes/no questions are answered by echoing finite verbs in the questions, the verb-echo answer is also derived from the full sentence structure by ellipsis. Answers in a language in which verbs have inflection clearly display that the inflection of the echoed verb is related to the other elements in its full sentence (Holmberg, 2016). For example, in the Finnish example, 196, the echoed verb keeps the inflection of the past tense and the agreement with the third-person subject, which implies that the sentence, including the subject and the TP, existed in the answer but has been deleted (Holmberg, 2016, p. 3, Chap. 1).

(196) Q: Tul-i-vat-ko   lapset   kotiin?
        come-PAST-3SL-Q children home

    'Did the children come home?'

    A: Tul-i-vat.
        come-PAST-3SL

    'Yes.'

Regarding the process of ellipsis, Holmberg (2016, pp. 73-79, Chap. 3) suggests that the verb-echo answer is derived by either big ellipsis or pro-drop and VP-ellipsis. The test for judging which derivation a language employs is the indefinite subject test: if a yes/no question with an indefinite subject can be answered using an echoed verb in a language, then, the verb-echo answer is derived by big ellipsis, because an indefinite pronoun cannot be pro-dropped.

The basic idea for big ellipsis is that the subject is omitted with the rest after the verb moves out of the elided constituent that contains the subject. There are two cases for big ellipsis. One case is that the verb moves to the I position while the subject remains in the position, where it is merged in the vP. Then, the vP containing the subject is omitted, such

as the derivation in 197 (Holmberg, 2016, pp. 76-79, Chap. 3).

(197)

```
              CP
             /  \
            C    IP
                /  \
         [V+v]+I    vP
              /    /  \
             /   Subj   v'
            /         /  \
           /      <V+v>    VP
          /          /    /  \
         /          /   <V>   Obj
          _____/_____/
```
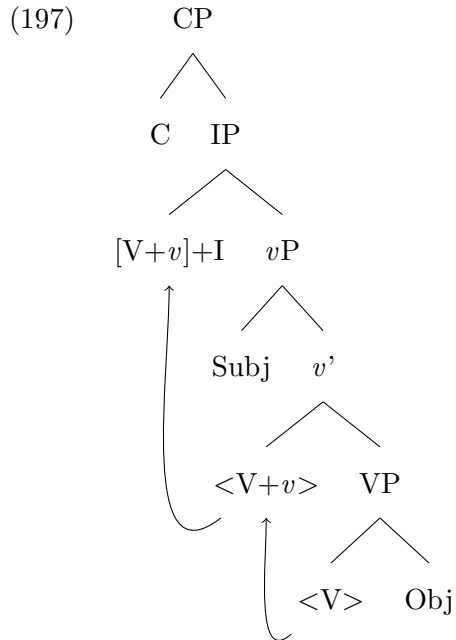
Welsh is a language in which the verb-echo answer is derived by vP-ellipsis, as in 197. Another case of big ellipsis occurs in languages such as Finnish, which is IP-ellipsis. Once the verb moves to the I, the subject moves to the specifier of the IP, but then, the verb with the I further moves to the C. Then, the entire IP undergoes ellipsis (Holmberg, 2016, pp. 76-79, Chap. 3). The derivation is displayed in 198.

(198)

```
                    CP
                   /  \
            V+I+C      IP
                      /  \
                   Subj   I'
                         /  \
                    <V+I>    VP
                            /  \
                        <V>    Obj
```
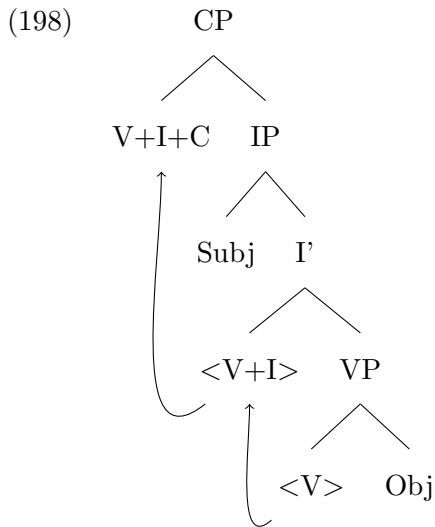
The other derivation proposed by Holmberg (2016, pp. 73-76, Chap. 3) is pro-drop and VP-ellipsis. The basic idea for pro-drop and VP-ellipsis is that the verb moves out of the elided constituent. That is, the verb moves out of the VP(or vP) to the I or some functional head, and then the rest of the VP(or vP) is omitted. This verb-stranding VP-ellipsis occurs in many languages. Then, if the language allows subject pro-drop, then the subject is omitted as well (Holmberg, 2016, pp. 73-76, Chap. 3).

(199)

```
                    IP
                   /  \
               DP       I'
               |       /  \
           subject    I     VP
                     / \   / \
                    V   I <verb> ...
                    |
                  verb
```
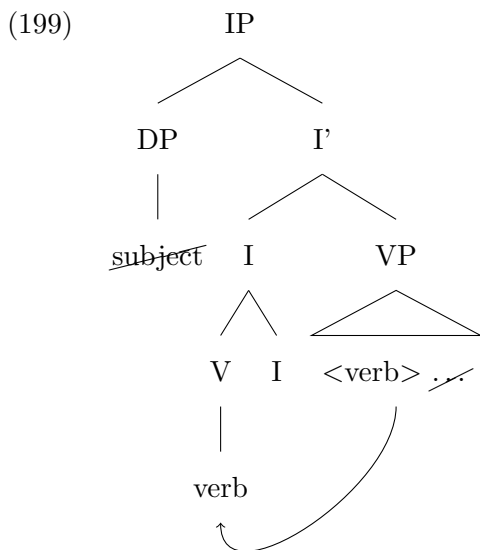
English, as illustrated in example 194, can use an answer such as the one in example 200

to answer yes/no questions. However, it is not the verb-stranding VP-ellipsis. The verb remains in the VP(or vP) and the VP(or vP) is omitted. Moreover, a subject is indispensable for English, and the subject and the auxiliary in the I position are left to form the answer.

(200) Q: Can you close the window for me?
       A: I can (close the window for you).

Regarding Mandarin, Holmberg (2016, pp. 191-197, Chap. 4) mentions that yes/no questions in Mandarin can be answered using both particles and echoed verbs. Moreover, the verb-echo answer is derived by pro-drop and VP-ellipsis. However, Holmberg (2016, pp. 191-197, Chap. 4) does not provide a detailed analysis in Mandarin and neglects some phenomena of yes/no questions in Mandarin. Therefore, this chapter discusses echo answers to yes/no questions in Mandarin in detail based on the analysis by Holmberg.

Considering the test proposed by Holmberg (2016, pp. 79-90, Chap. 3), a question with a subject that is indefinite in Mandarin cannot be answered using a bare verb, such as in answer 201a. Correspondingly, big ellipsis cannot be applied to the derivation of the answers to yes/no questions in Mandarin. In example 201, if the interlocutor knows who has come to the classroom, the interlocutor always points out the name or identity of that person, as in answer 201b. However if the interlocutor has no idea about who the specific person is, but only knows someone did come, the answer should contain some constituents to indicate the indefinite person, such as in answer 201c.

(201) Q: shui zuotian   lai   guo jiaoshi   ma?
           who yesterday come ASP classroom Q
        'Did someone come to the classroom yesterday?'

       a. *A: lai   guo.
              'come ASP'

       b. A: Zhangbing lai   guo.
             Zhangbing come ASP

'Zhangbing came.'

c. A: you ren   lai   guo.
      have person come ASP
   'Someone came.'

Thus, according to Holmberg (2016, pp. 79-90, Chap. 3), the derivation of the verb-echo answer in Mandarin should be derived by pro-drop and VP-ellipsis. The answer in example 202 is a verb-echo answer derived by ellipsis from the full sentence answer in example 203, which is derived in 204. Based on Holmberg, the full sentential answer undergoes VP-ellipsis, deleting the DP 'wenxue(literature)', and undergoes pro-drop, deleting the subject 'wo(I)'. Then, the main verb xihuan(like) is left as the echoed answer.

(202) Q: ni   xihuan wenxue   ma?
           you like   literature Q
       'Do you like literature?'

       A: xihuan.
          like

       'Yes.'

(203) A: wo xihuan wenxue.
          I   like   literature
       'Yes.'

(204)

```
                    CP
                   /  \
                  C    TP
                      /  \
                   DP      T'
                    |      / \
                   wo     T   vP
                   (I)       /  \
                        <DP>      v'
                          |      /  \
                       <wo>   V + v      VP
                        (I)    |        /  \
                            xihuan  <V>      DP
                            (like)   |      / \
                                 <xihuan>  wenxue
                                  (like)  (literature)
```
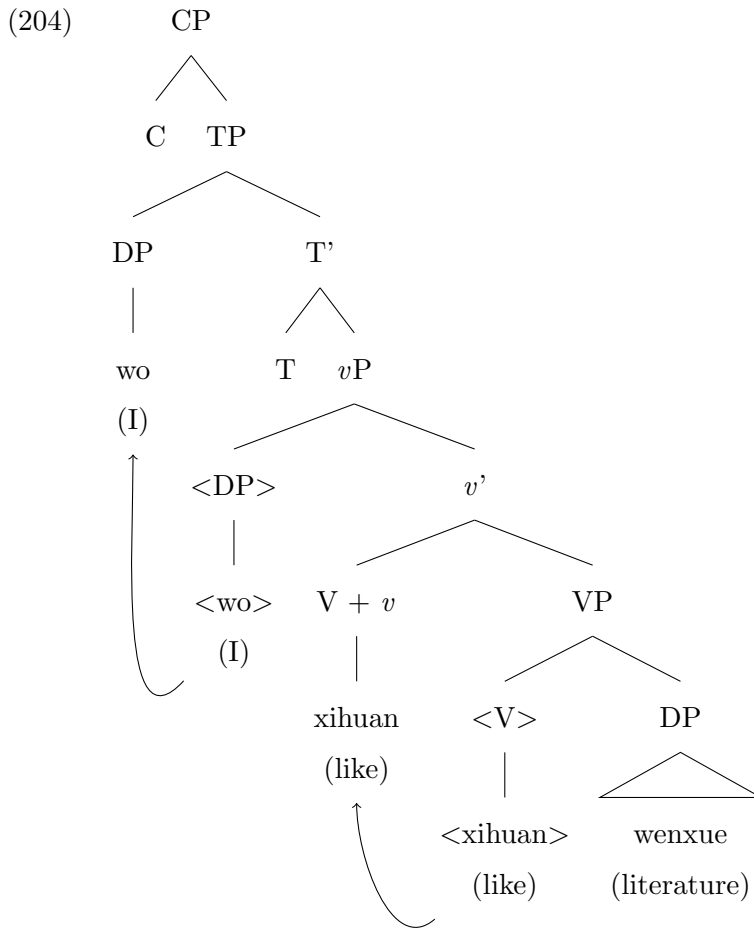
5.2   The Problems of Holmberg's Analyses Regarding Mandarin

Regarding echo answers, Holmberg (2016, pp. 191-197, Chap. 4) only discusses the modal verb-echo answer and the verb-echo answer. However, in Mandarin, a sentence does not have to contain a verb. Therefore, for a yes/no question that does not have a verb in the question, the echo answer echoes another word with the polarity as the echo answer. Regarding verb-echo answers, for some examples with basic structures in Mandarin, it is logical to derive the echo answer using Holmberg's analysis, as in example 203. However, there are many cases that cannot employ the pro-drop and VP(vP)-ellipsis to derive the echo answer.

5.2.1 Serial verb construction

Mandarin, as described above, allows more than one verb in a simple sentence, namely, the serial verb construction, such as in examples 205 and 206.

(205) Q: ni   mingtian qu Morrisons mai shuiguo ma?
        you tomorrow go Morrisons buy fruit   Q
    'Will you go to Morrisons to buy fruit tomorrow?'

     a. A: wo mingtian qu Morrisons mai shuiguo.
           I   tomorrow go Morrisons buy fruit
       'Yes, I will go to Morrisons to buy fruit tomorrow.'

     b. A: qu.
           go
       'Yes.'

     c. A: wo mingtian bu qu Morrisons mai shuiguo.
           I   tomorrow bu go Morrisons buy fruit
       'No, I won't go to Morrisons to buy fruit tomorrow.'

     d. A: bu qu.
           not go
       'No.'

The yes/no question in example 205 contains two verb phrases strung together. The speaker knows that the interlocutor will go somewhere to buy fruit. What the speaker is asking is whether the interlocutor will go to Morrisons to buy fruit. That is, the focus is on the PolP for the first verb phrase '*qu Morrisons*(go Morrisons)'. The full sentential answers are 205a and 205c. The negative full sentential answer, 205c, clearly indicates that the variable polarity is to the left of the verb *qu*(go). The shortest echo answers only echo the verb *qu*(go) with the polarity, as in 205b and 205d.

(206) Q: ni   mingtian qu Morrisons mai shuiguo ma?
       you tomorrow go Morrisons buy fruit   Q
       'Will you buy fruit in Morrisons tomorrow?'

   a. A: wo mingtian qu Morrisons mai shuiguo.
          I   tomorrow go Morrisons buy fruit
       'Yes, I will buy fruit in Morrisons tomorrow.'

   b. A: mai.
          buy
       'Yes.'

   c. A: wo mingtian qu Morrisons bu mai shuiguo.
          I   tomorrow go Morrisons not buy fruit
       'No, I won't buy fruit in Morrisons tomorrow.'

   d. A: bu mai.
          not buy
       'No.'

The surface structure of the yes/no question in example 206 is the same as the surface structure of the yes/no question in example 205. However, the first verb phrase '*qu Morrisons*(go Morrisons)' is the known information in example 206. The speaker is asking whether the interlocutor will buy fruit when the interlocutor goes to Morrisons tomorrow. Therefore, the focus is on the PolP for the second verb phrase '*mai shuiguo*(buy fruit)'. The variable polarity is to the left of the second verb *mai*(buy), such as in the negative full sentential answer 206c, the structure of which is displayed in example 207. In 206c, the two verb phrases are strung together and *mingtian*(tomorrow) is adjoined to the VP.

(207)   A: [$_{TP}$ wo [$_{v}$P mingtian [$_{v}$P qu Morrisons [$_{v}$P bu mai shuiguo]]]].
           I   tomorrow   go Morrisons   not buy fruit
        'No, I won't buy fruit in Morrisons tomorrow.'

The negation *bu*(not) in answer 206c cannot be the sentential PolP head, namely, the middle negation based on Holmberg (2016, pp. 152-165, Chap. 4). According to Holmberg's analysis, the echo answer in Mandarin remains after deleting the VP(*v*P) and the subject. However, the full sentential answer cannot leave the negative polarity *bu*(not) and the verb *mai*(buy) only undergoing the pro-drop and VP(*v*P)-ellipsis.

5.2.2 *ba*(把) structure and *bei*(被) structure

There are two structures that are commonly used in Mandarin: the *ba*(把) structure and the *bei*(被) structure.

The *ba*(把) structure in Mandarin is used in sentences that contain a transitive verb with its object(s). Examples 208 and 209 have the transitive verb *song*(give) with the indirect object *ta*(him) and the direct object '*yi ge shengdan liwu*(a Christmas present)'. In example 210 with the *ba* structure, the *ba* attracts the direct object to the position to the left of the transitive verb and following the *ba* without changing the meaning of the sentence. In example 211, the transitive verb *da*(hit) only has one indirect object *ta*(him). The *ba* attracts the indirect object *ta*(him) to the left of the transitive verb in example 212.

(208) wo yao song ta   yi ge shengdan liwu.
       I   will give him one CL Christmas present
       'I will give him a Christmas present.'

(209) wo yao song yi ge shengdan liwu   gei ta.
       I   will give one CL Christmas present to him
       'I will give him a Christmas present.'

(210) wo yao ba yi ge shengdan liwu   song gei ta.
       I   will BA one CL Christmas present give to him
       'I will give him a Christmas present.'

(211)   wo da le   ta.
        I   hit ASP him

           'I hit him.'

(212)   wo ba ta   da le.
        I   BA him hit ASP

           'I hit him.'

The *ba* attracts an object to the position following the *ba* and to the left of the transitive verb. Sybesma (2013, pp. 131-182, Chap. 6) discusses the *ba* structure in Mandarin in detail and establishes the derivation of the *ba* structure as in 213 (Sybesma, 2013, p. 180, Chap. 6). The *ba* is the head of a Causative Phrase above the VP.

(213)   CAUSP

        NP1   CAUSP

            CAUS   VP

               NP2   VP

                  V   XP

                  VP3   X
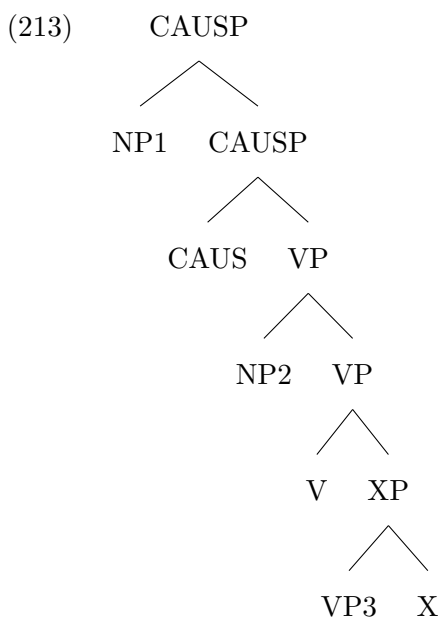
This thesis does not further discuss the syntactic derivation of the *ba* structure. Both the analysis of Sybesma (2013, pp. 131-182, Chap. 6) and the surface structure of the *ba* examples demonstrate that the *ba* and the proposed object are to the left of the verb.

The yes/no question in example 214 contains the *ba* structure, which attracts the direct object *qian*(money) to the left of the verb *huan*(return). The full sentential answer is answer

214a. If the full sentential answer follows the pro-drop and VP(*v*P)-ellipsis, '*ba qian*(BA money)' would remain with the main verb to be echoed. However, the shortest affirmative echo answer only echoes the main verb *huan*.

(214) Q: ni   ba qian   huan gei Emma le   ma?
          you BA money return to Emma ASP Q
       'Did you return the money to Emma?'

      a. A: wo ba qian   huan   gei Emma le.
          I   BA money return to Emma ASP
       'Yes, I returned the money to Emma.'

      b. A: huan   le.
          return ASP
       'Yes.'

(215) A: [$_{TP}$ wo [$_{BaP}$ ba [$_{vP}$ qian$_i$ huan   <qian>$_i$ [$_{PP}$ gei Emma] le]]].
      I   BA   money return money   to Emma ASP
   'Yes, I returned the money to Emma.'

A similar structure in Mandarin is the *bei*(被) structure. *Bei* is in the position to the left of the transitive verb and it attracts the theme to the subject position. The yes/no question in example 217 has the *bei* structure. The yes/no question in example 216 is the corresponding yes/no question that does not contain the *bei* structure. The *bei* is in the position above the *v*P domain and attracts the theme *ni*(you) out of the *v*P to the position as the subject of the sentence.

(216) Q: wenzi   yao ni le   ma?
          mosquito bite you ASP Q
       'Did a mosquito bite you?'

(217) Q: ni   bei wenzi   yao le   ma?
          you BEI mosquito bite ASP Q

'Were you bitten by a mosquito?'

    a. A: wo bei   wenzi   yao le.
            I   BEI mosquito bite ASP
       'Yes, I was bitten by a mosquito.'

    b. A: yao le.
           bite ASP
       'Yes.'

The full sentential answer is 217a. The *bei* is to the left of the main verb *yao*(bite), and the object *wo*(I) is moved out of the *v*P to the subject position. The DP *wenzi*(mosquito) remains the specifier of the *v*P. If the full sentential answer undergoes pro-drop and VP (or *v*P)-ellipsis, it is impossible to obtain the echo answer 217b.

(218)   A: [$_{TP}$ wo$_i$ [$_{BeiP}$ <wo>$_i$ bei [$_{v}$P wenzi   yao le   <wo>$_i$]]].
             I   I   BEI   mosquito bite ASP   I
      'Yes, I was bitten by a mosquito.'

5.2.3   *de*(得) structure

Yes/no questions and answers with the *de*(得) structure were described in the previous chapter. For example 219, the full sentential answer to the yes/no question is answer 219a, which contains the verb *pao*(run) and an adjective *lei*(tired). According to Holmberg (2016, pp. 73-79, Chap. 3), after the pro-drop and VP-ellipsis, the shortest echo answer would echo the verb *pao*(run) with the polarity, as in answer 219c. However, answer 219c echoing the verb *pao*(run) with the polarity is not grammatical in Mandarin. The echo answer would echo the adjective *lei*(tired) with the polarity, as in answer 219b.

(219)   Q: ni   pao de lei   ma?
        you run DE tired Q

'Are you tired because of running?'

a. A: wo pao de lei./   wo pao de bu lei.
      I   run DE tired/ I   run DE not tired
   'Yes, I am tired because of running./ No, I am not tired because of running.'

b. A: lei./   bu lei.
      tired/ not tired
   'Yes./ No.'

c. * A: pao./ bu pao.
       run/ not run
   'Yes./ No.'

The yes/no question in example 220 also has the *de* structure. The verb-echo answer '*chuan*(wear)' derived through pro-drop and VP-ellipsis, as in answer 220c, is not grammatical in Mandarin. The shortest echo answer should echo the '*chuan de xia*(wear DE down)' together with the polarity, as in answer 220b.

(220) Q: ni   chuan de xia   zheme xiao-de maoyi   ma?
          you wear   DE down such   small   sweater Q
       'Can you wear such a small sweater?'

a. A: wo chuan de   xia   zheme xiao-de maoyi.
      I   wear   DE down such   small   sweater
   'Yes, I can wear such a small sweater.'

b. A: chuan de   xia.
      wear   DE down
   'Yes.'

c. * A: chuan.
        wear

135

'Yes.'

5.3   Modal Verb-Echo Answers to Yes/No Questions in Mandarin

Mandarin has modal verbs like English, such as *yuanyi*(will), *neng*(can) and *yinggai*(should). The modal verb, as a type of auxiliary verb, conveys meanings such as obligation, possibility, permission and futurity (Adger, 2003, p. 126, Chap. 5).

(221)   Q: ni   neng jie   wo dian qian   ma?
            you can   lend me some money Q
        'Can you lend me some money?'

    a.   A: neng./ bu   neng.
        can/   not can
      'Yes./ No.'

    b.   A: wo neng jie   ni   dian qian.
        I   can   lend you some money
      'Yes, I can lend you some money.'

    c.   A: wo bu   neng jie   ni   dian qian.
        I   not can   lend you some money
      'No, I can't lend you some money.'

In example 221, the echo answer 221a is derived from the full sentence answers 221b and 221c. The full sentence answer contains both the modal verb *neng*(can) and the main verb *jie*(lend), but the shortest answer, 221a, only echoes the modal verb *neng*(can) with the polarity as the answer. In the sentence structure, the modal verb occurs in the left position before the main verb, that is, in a position outside the *v*P (Adger, 2003, pp. 125-129, Chap. 5). Therefore, the derivation of the full sentence answer in 221b is as in derivation 222.

In the echo answer, the Focus has a strong [Focus] feature that attracts the PolP to the specifier of the FocP. The TP undergoes the first ellipsis, following the second ellipsis of the vP in the PolP, which has moved to the specifier of the FocP. After the two ellipsis, the modal verb *neng*(can) and the polarity in the PolP in the position of the specifier of the FocP remain as echo answer 221a.

(222)

```
                          CP
                         /  \
                        C    FocP
                            /  \
                              Foc'
                             /  \
                          Foc    TP
                                /  \
                              DP    T'
                              |    /  \
                             wo   T    PolP
                             (I)      /  \
                                   Pol    ModP
                                    |     /  \
                               Aff/Neg  Mod    vP
                                  |      |    /  \
                                 ∅/bu   neng <DP>   v'
                                 ∅/not  (can)  |    /  \
                                            <wo>  V + v   VP
                                            (I)    |     /  \
                                                  jie   DP    V'
                                                (lend)  |    /  \
                                                       ni  <V>   DP
                                                     (you)  |    /\
                                                          <jie> dian qian
                                                          (lend) (some money)
```
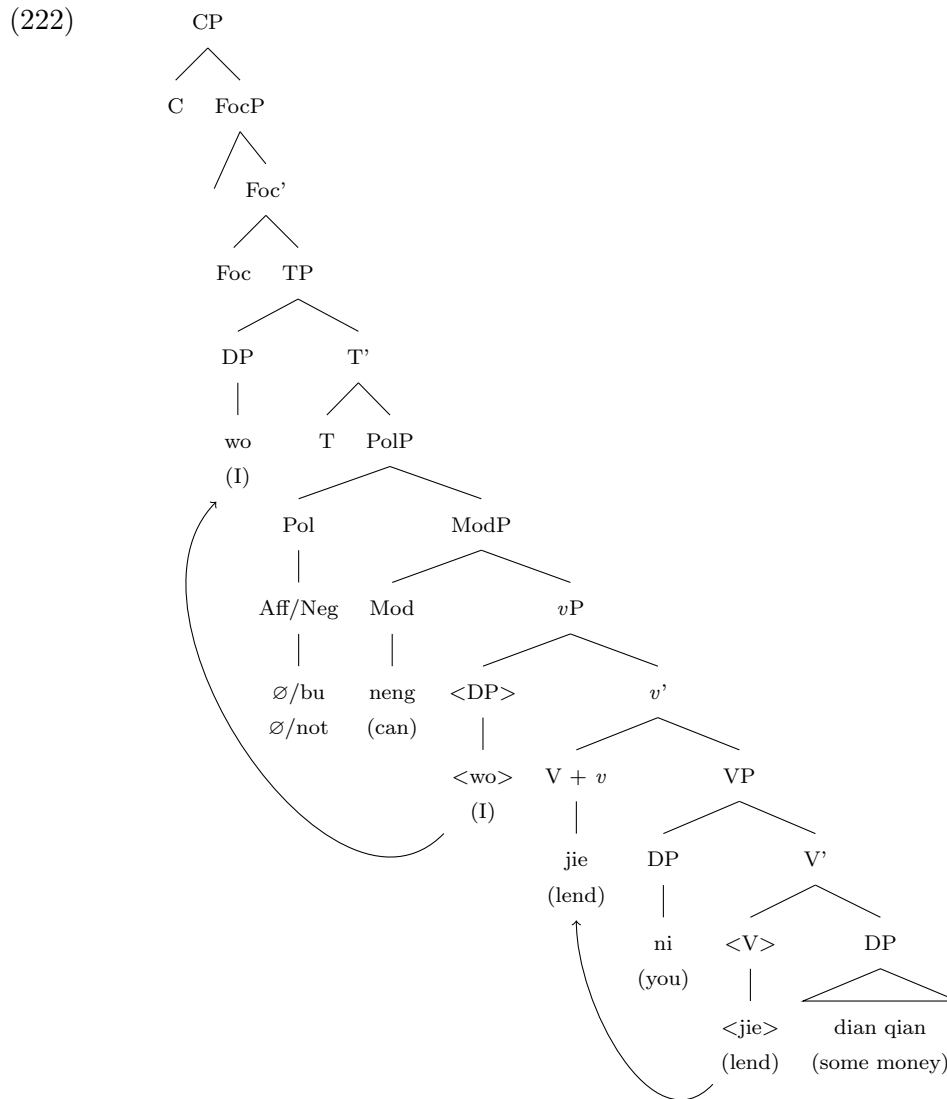
The yes/no question in example 223 contains a modal verb, *yuanyi*(will), an adjunct expressing time, *mingtian*(tomorrow), and the *ba* construction. The negative echo answer 223b only echoes the modal verb *yuanyi*(will) with the negation *bu*(not). The full negative

sentential answer 223a is derived in 224.

(223) Q: ni   yuanyi mingtian ba diannao   bang wo xiu hao   ma?
　　　　 you will   tomorrow BA computer help I   fix good
　　　　'Would you like to fix the computer for me tomorrow?'

　　　a. A: wo bu yuanyi mingtian ba diannao   bang ni   xiu hao.
　　　　　　 I   not will   tomorrow BA computer help you fix good
　　　　　'No, I don't want to fix the computer for you tomorrow.'

　　　b. A: bu yuanyi.
　　　　　 not will
　　　　　'No.'

(224)
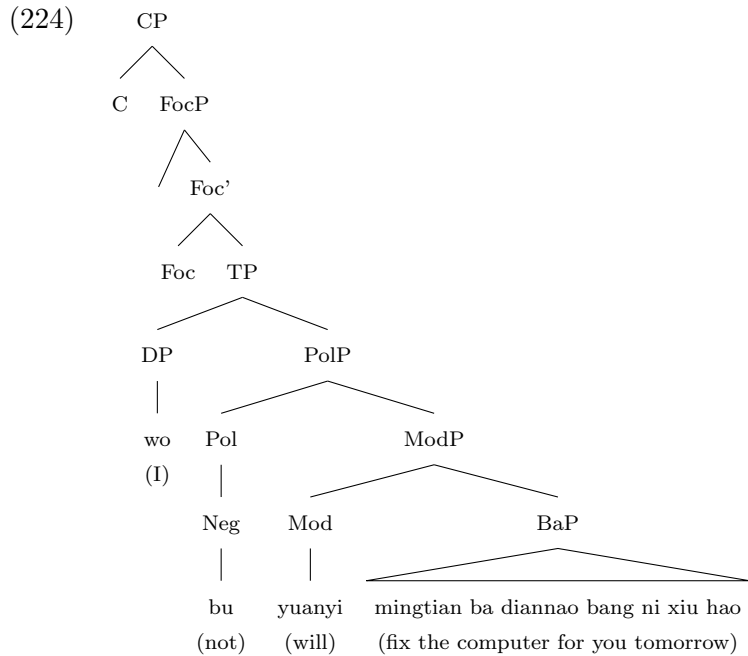
In the echo answer, the [Focus] feature on the Focus head becomes strong, and it attracts the PolP to the specifier of the FocP, as in 225. Then, the sentence undergoes several ellipsis. First, the TP is deleted. Second, the BaP is deleted. Then, only the negation *bu*(not) and the modal verb *yuanyi*(will) in the domain of the PolP on the specifier of the

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FocP remain as the echo answer.

(225)

```
                              CP
                          ╱      ╲
                         C      FocP
                       ╱              ╲
                    PolP              Foc'
                  ╱    ╲            ╱    ╲
                Pol    ModP       Foc    TP
                 │    ╱    ╲            ╱    ╲
                Neg  Mod    BaP       DP    <PolP>
                 │    │      │         │
                 bu  yuanyi  mingtian ba diannao bang ni xiu hao   wo
               (not) (will)  (fix the computer for you tomorrow)   (I)
```
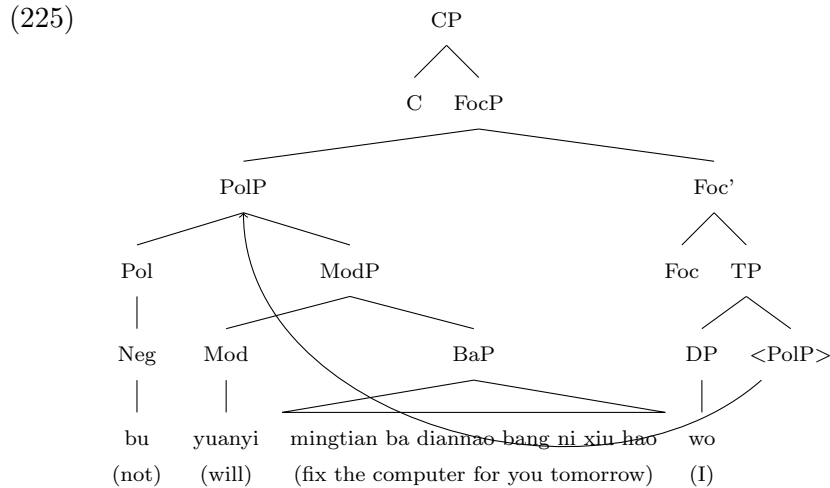
5.4 Verb-Echo Answers to Yes/No Questions in Mandarin

For the majority of basic sentences with verbs, the echo answer echoes the main verb with the polarity, such as in example 226. In the syntactic derivation, 227, the PolP moves to the specifier of the FocP because the [Focus] feature is strong. The TP that contains the subject is deleted. Then, the DP *ni*(you) in the PolP is deleted, which is also supported by the argument ellipsis in Mandarin (Cheng, 2011).

(226)   Q: ni   ai   wo ma?
            you love me Q
         'Do you love me?'

    a. A: wo (bu) ai   ni.
            I   (not) love you
         'Yes, I love you./ No, I don't love you.'

    b. A: ai./   bu ai.
            love/ not love
         'Yes./ No.'

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(227)

```
                    CP
                   /\
                  C  FocP
                     /\
                    /  Foc'
                       /\
                    Foc  TP
                         /\
                       DP   T'
                       |    /\
                      wo   T  PolP
                      (I)     /\
                           Pol   vP
                            |    /\
                           Aff <DP>  v'
                            |   |    /\
                            ∅  <wo> V+v   VP
                               (I)   |   /\
                                    ai <V>  DP
                                 (love) |   |
                                      <ai>  ni
                                     (love) (you)
```
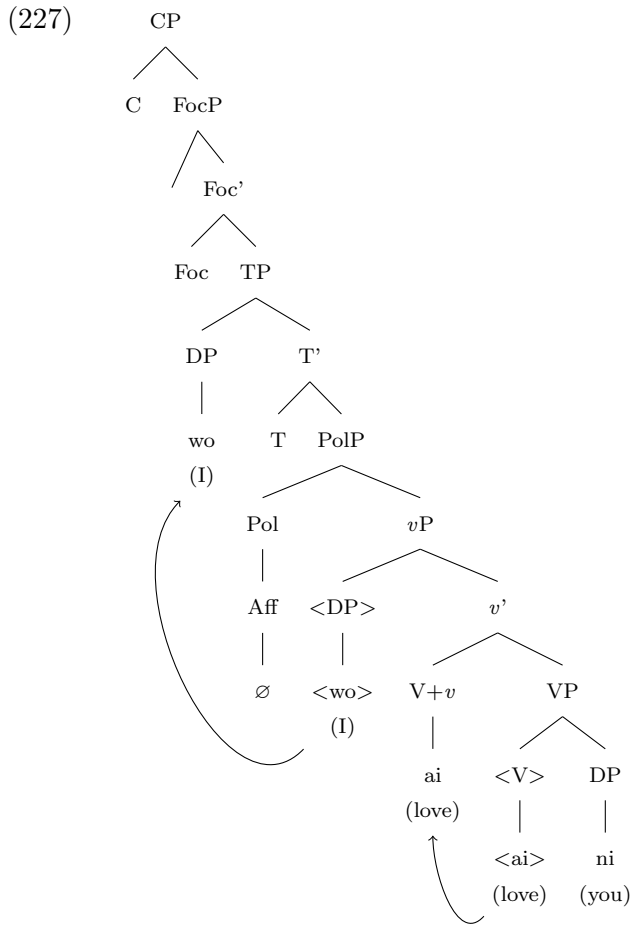
As discussed above, Mandarin allows serial verb constructions in a sentence, such as in example 228, in which there are two verbs, 'xihuan(like)' and 'chi(eat)'. The shortest echo answer only echoes the first verb xihuan(like) with the polarity, as in answer 228c. It is unacceptable to only echo the verb chi(eat) with the polarity in the shortest echo answer, such as in 228d. In the derivation of the affirmative echo answer 229, the full sentential answer has a strong [Focus] feature on the Focus head, which attracts the PolP to the specifier of the FocP. Then, the sentence undergoes TP-ellipsis and VP-ellipsis to obtain the affirmative echo answer xihuan(like).

(228)   Q: ni   xihuan chi riben   liaoli ma?
           you like   eat Japanese food Q
        'Do you like eating Japanese food?'

a. A: wo xihuan chi riben   liaoli.
        I   like   eat Japanese food

    'Yes, I like eating Japanese food.'

b. A: wo bu xihuan chi riben   liaoli.
        I   not like   eat Japanese food

    'No, I don't like eating Japanese food.'

c. A: xihuan./ bu xihuan.
        like/   not like

    'Yes./ No.'

d. * A: chi./ bu chi.
          eat/ not eat

      'Yes./ No.'

(229)

CP

C FocP

Foc'

Foc TP

DP T'

wo
(I)

T PolP

Pol vP

Aff <DP> v'

∅ <wo>
(I)

V+v VP

xihuan
(like)

<V> vP

<xihuan> chi riben liaoli
(like) (eat Japanese food)
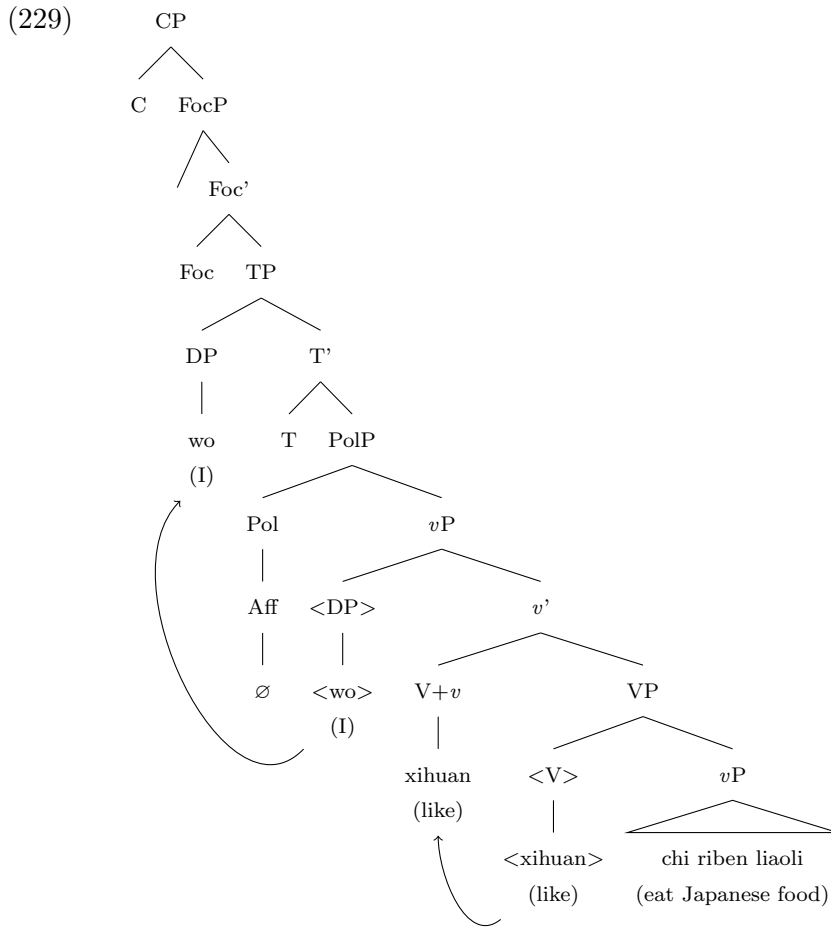
As discussed above, in the serial verb construction, the polarity can be to the left of every verb phrase. In example 230, there are two verb phrases '*chu men*(go out (of the door))' and '*reng laji*(throw out the garbage)' in the yes/no question. The speaker can question the two verb phrases as a whole. The Focus is on the PolP for the serial verb construction, and the PolP is to the left of the entire serial verb construction, as in answer 230c. However, when the first VP '*chu men*(go out)' is the given information for the speaker, the speaker only asks whether the interlocutor will throw out the garbage. The variable polarity is with the second VP '*reng laji*(throw out the garbage)'. The full sentential answer is as in 230a and the echo answer can only echo the second VP '*reng laji*(throw out the garbage)' with the polarity, as in answer 230b.

(230) Q: ni yihuier chu men reng laji ma?
you later go-out door throw garbage Q

'Will you go out later to throw out the garbage?'

a. A: wo yihuier chu   men (bu) reng   laji.
      I   later   go-out door not   throw garbage

   'Yes, I will go out later to throw out the garbage./ No, I will go out but I won't
   throw out the garbage.'

b. A: reng./ bu reng.
      throw/ not throw

   'Yes./ No.'

c. A: wo yihuier (bu) chu   men reng   laji.
      I   later   (not) go-out door throw garbage

   'Yes(/No), I will (not) go out later to throw out the garbage.'

The negative full sentential answer in 230a is derived in 231. In the echo answer, the
strong [Focus] feature on the Focus head attracts the PolP to the specifier of the FocP to
check the [*u*Focus] feature. Once the TP is deleted and the VP in the PolP is deleted, the
bu reng(not throw) remains as the negative echo answer 230b.

(231)

```
                        CP
                      /    \
                    C      FocP
                           /    \
                          Foc'
                         /    \
                       Foc     TP
                      /       /    \
                    DP       T'
                    |       /    \
                    wo     T      vP
                    (I)          /    \
                              Adv      vP
                               |      /    \
                            yihuier  <DP>        v'
                            (later)   |        /    \
                                    <wo>    V+v       VP
                                    (I)      |       /    \
                                            chu     DP       V'
                                          (go-out)  |      /    \
                                                   men   <V>     PolP
                                                  (door)  |      /    \
                                                       <chu>  Pol       vP
                                                     (go-out)  |      /    \
                                                             Neg  <DP>        v'
                                                              |    |        /    \
                                                             bu  <wo>    V+v      VP
                                                            (not) (I)     |      /    \
                                                                        reng  <V>     DP
                                                                       (throw) |      /\
                                                                           <reng>   laji
                                                                           (throw) (garbage)
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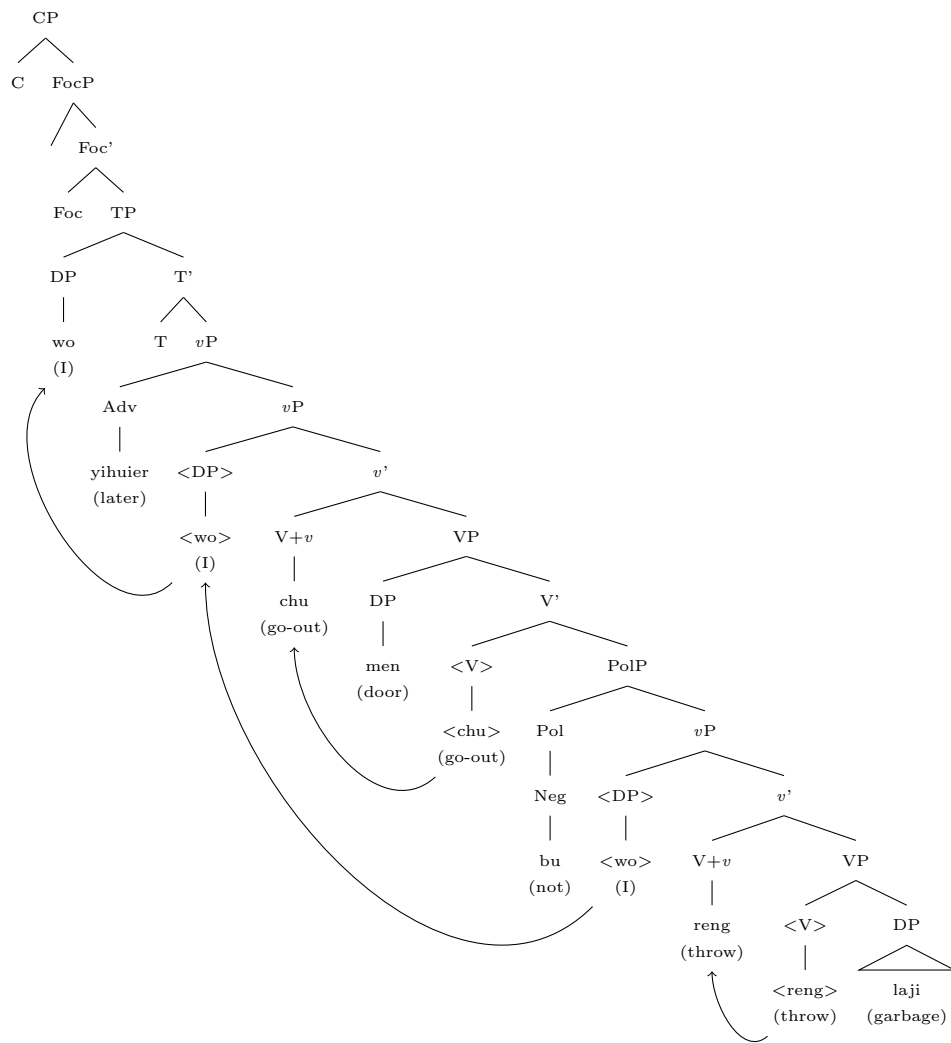
In Mandarin, the passive meaning is expressed by the *bei* construction. In example 232, the theme of the verb '*ni de shouji*(your phone)' that moved to the subject position must be followed by *bei* to express the passive meaning.

(232) Q: ni   de shouji bei tou   le   ma?
          you of phone BEI steal ASP Q

    'Is your phone stolen?'

    A: bei   tou   le./   mei bei   tou.
       BEI steal ASP/ not BEI steal

'Yes./ No.'

(233)   * Q: ni   de shouji tou   le   ma?
              you of phone steal ASP Q
       'Is your phone stolen?'

The passive sentence 233, which does not contain *bei*, is ungrammatical. *bei* has a strong
[Passive] feature that attracts the theme to the specifier of the BeiP to check the [uPassive]
on the DP '*wo de shouji*(my phone)'. The DP keeps moving higher to the specifier of the
TP to satisfy the EPP feature. The negative full sentential answer is derived in 234.

(234)

CP
├─ C
└─ FocP
   └─ Foc'
      ├─ Foc
      └─ TP
         ├─ DP
         │ └─ wo de shouji (my phone)
         └─ T'
            ├─ T
            └─ PolP
               ├─ Pol
               │ └─ Neg
               │   └─ mei (not)
               └─ BeiP
                  ├─ DP
                  │ └─ wo de shouji (my phone)
                  └─ Bei'
                     ├─ Bei
                     │ └─ bei
                     └─ vP
                        ├─ V+v
                        │ └─ tou (steal)
                        └─ VP
                           ├─ <V>
                           │ └─ <tou> (steal)
                           └─ <DP>
                              └─ <wo de shouji> (my phone)
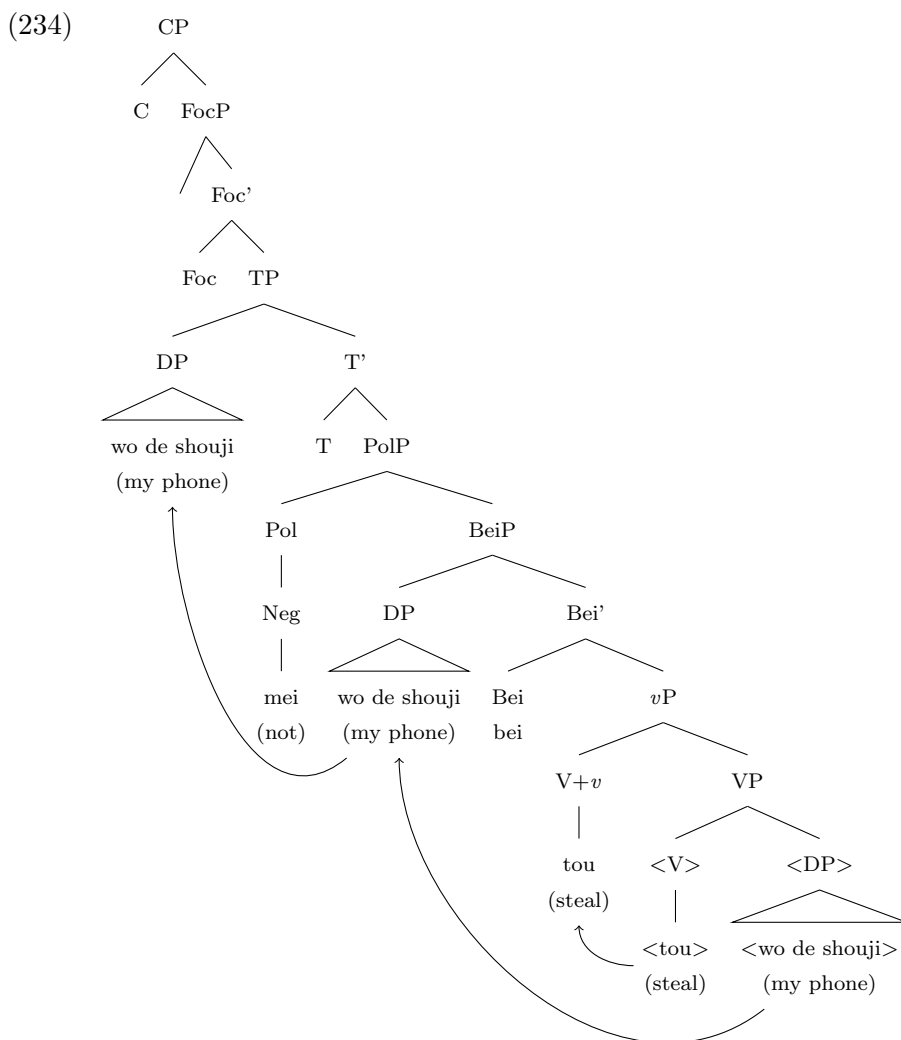
When deriving the echo answer, the Focus head holds a strong [Focus] feature. The PolP, which has the unvalued [*u*Focus] feature, moves to the specifier of the FocP to check the feature. Then the TP is omitted. The *mei bei tou* remains as the negative echo answer.

5.5 Adjective-Echo Answers to Yes/No Questions in Mandarin

As described in the previous chapter, a verb is not necessary to form a grammatical sentence in Mandarin. In the English example 235, the predicate is the adjective *fat*, which has the

subject '*I*' as one argument. However, English must employ the copula *be* in the form of '*is*' to link the subject '*I*' and the predicate *fat*. In Mandarin, a sentence composed of the subject DP *wo*(I) and the predicate adjective *pang*(fat), such as example 236, is grammatical. By adding the yes/no question particle *ma* to the end in the surface structure, the declarative sentence in example 236 turns into a yes/no question in example 237. The echo answer echoes the adjective *pang*(fat) with the polarity as the echo answer.

(235)   I am fat.

(236)   wo pang.
        I   fat
          'I am fat.'

(237)   Q: wo pang ma?
           I   fat   Q
          'Am I fat?'

        a. A: ni   pang./ ni   bu pang.
              you fat/   you not fat
              'Yes, you are fat./ No, you are not fat.'

        b. A: pang./ bu pang.
              fat/   not fat
              'Yes./ No.'

In a simple yes/no question that is composed of an adjective as the predicate and its argument(s), the echo answer echoes the adjective with the polarity as the echo answer. In examples 238 and 239, the adjectives *piaoliang*(beautiful) and *teng*(painful) are the predicates with their DP arguments *zhe tiao qunzi*(this dress) and *ni de shangkou*(your wound), respectively. The echo answers only echo the adjectives with the polarity.

(238) Q: zhe tiao qunzi piaoliang ma?
        this CL   dress beautiful Q
      'Is this dress beautiful?'

      A: piaoliang./ bu   piaoliang.
        beautiful/ not beautiful

      'Yes(, this dress is beautiful)./ No(, this dress is not beautiful).'

(239) Q: ni   de shangkou bu teng   ma?
        you of wound   not painful Q
      'Is your wound not painful?'

      A: teng./   bu   teng.
        painful/ not painful

      'No(, my wound is painful)./ Yes(, my wound is painful).'

According to Holmberg, echo answers are derived from their full sentential answers by deleting; therefore, the affirmative adjective-echo answer in 238 is derived from its full sentential expression in answer 240. The derivation for the full sentence 240 is displayed in 241.

(240) A: zhe tiao qunzi piaoliang.
        this CL   dress beautiful
      'Yes, this dress is beautiful.'

(241)

```
                    CP
                   /  \
                  C    FocP
                        \
                         Foc'
                        /   \
                      Foc    TP
                            /  \
                          DP    T'
                         /__\  /  \
                  zhe tiao qunzi T   PolP
                   (this dress)     /   \
                                  Pol    AdjP
                                   |    /   \
                                  Aff <DP>   Adj'
                                   |  /__\    |
                                   ∅ <zhe tiao qunzi>  Adj
                                      (this dress)    /__\
                                                    piaoliang
                                                   (beautiful)
```
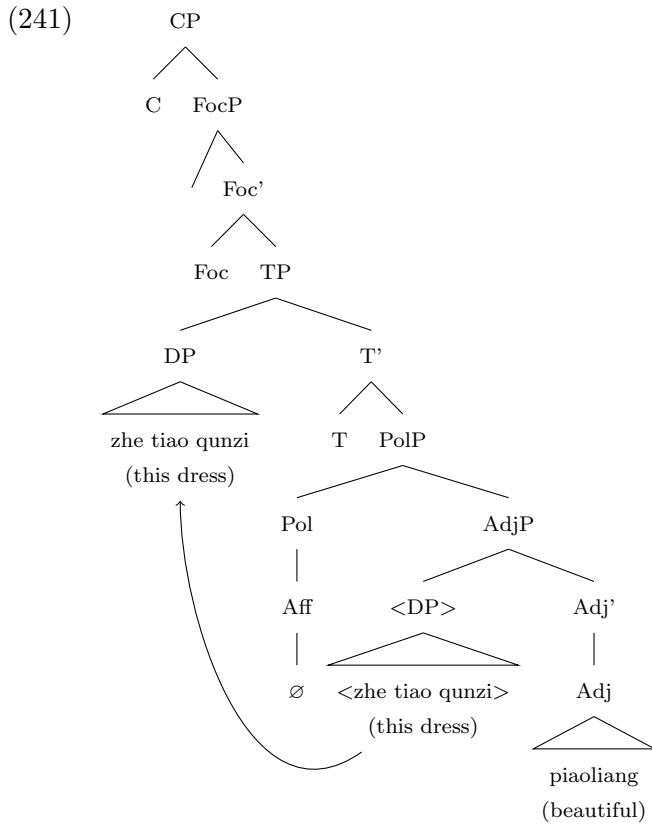
The adjective-echo answer *piaoliang*(beautiful) is derived from the full sentential answer with the derivation of 241, which does not have a VP at all. As introduced in the previous chapter, this type of sentence describes the features or condition of an object, usually using an adjective to describe the subject. In the echo answer, the Focus head has a strong [Focus] feature that attracts the PolP to the specifier of the FocP, followed by the ellipsis of the TP. Then, only the covert affirmative polarity and the adjective *piaoliang*(beautiful) in the PolP, which has moved to the specifier of the FocP, remain as the affirmative echo answer in example 238.

Example 242 is similar to 238 and 239. The DP moves from the specifier of the vP to the specifier of the TP to be the subject. The PolP is attracted by the strong [Focus] feature on the Focus head to the specifier of the FocP. After deleting the TP, the PolP in the specifier remains as displayed in the derivation in 243.

(242) Q: jinwan   de xingxing liang   ma?
        tonight of star   bright Q
     'Are the stars bright tonight?'

     a. A: jinwan   de xingxing liang.
            tonight of star   bright
         'Yes, the stars are bright tonight.'

     b. A: liang.
            bright
         'Yes.'

     c. A: jinwan   de xingxing bu   liang.
            tonight of star   not bright
         'No, the stars are not bright tonight.'

     d. A: bu   liang.
            not bright
         'No.'

(243)

```
                           CP
                          /  \
                         C    FocP
                             /    \
                        PolPⱼ      Foc'
                                  /    \
                                Foc     TP
                                       /   \
                                    DPᵢ      T'
                                   /  \     /  \
                          jinwan de xingxing  T   <PolP>ⱼ
                          (tonight's star)       /      \
                                              Pol        AdjP
                                               |        /    \
                                            Aff/Neg  <DP>ᵢ   Adj'
                                               |              |
                                             ∅/bu            Adj
                                             ∅/not            △
                                                            liang
                                                           (bright)
```
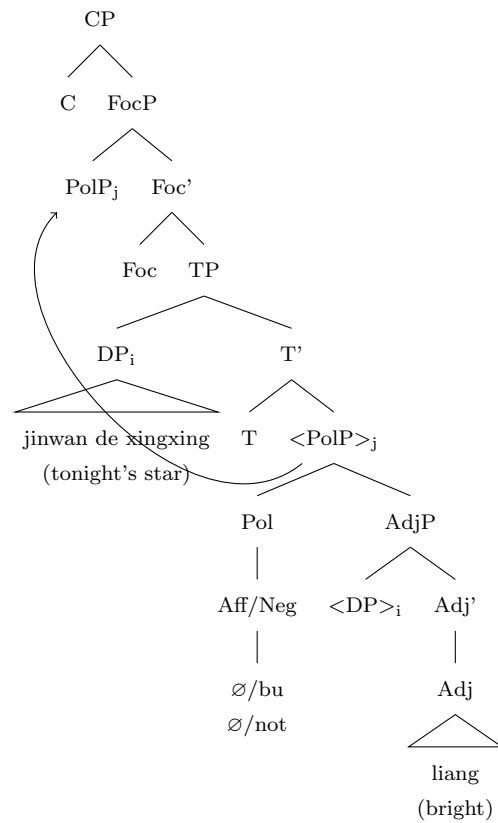
In example 244, the subject in the specifier of the TP position is a clause. In the same way, the TP is omitted once the PolP is moved to the specifier of the FocP, and the adjective with the polarity remains in the answer as the echo answer.

(244) Q: (renmen) zai zhe tiao he   li   youyong weixian   ma?
           (people) at this CL river inside swim   dangerous Q
        'Is it dangerous for people to swim in this river?'

a. A: ~~(renmen) zai zhe tiao he li youyong~~   weixian.
        ~~(people) at this CL river inside swim~~ dangerous
       'Yes(, it is dangerous to swim in this river).'

b. A: ~~(renmen) zai zhe tiao he li youyong~~   bu weixian.
        ~~(people) at this CL river inside swim~~ not dangerous
       'No(, it is not dangerous to swim in this river).'

5.6 Preposition-Echo Answers to Yes/No Questions in Mandarin

A sentence in Mandarin does not have to contain a verb. In addition to the AdjP as the predicate, a preposition phrase can be a predicate also, such as in example 245. In 245, there is no verb in the Mandarin yes/no question; the preposition *zai*(at) is the predicate that takes two DP arguments '*George jiaoshou*(Professor George)' and '*bangongshi*(office)'. In English, the copula *be* in the form of '*is*' must be added to the sentence to link the subject *Professor George* and the PP predicate. The answer to the yes/no question in example 245 is to echo the preposition *zai*(at) with the polarity alone.

(245)   Q: George jiaoshou   zai bangongshi ma?
          George Professor at   office   Q
      'Is Professor George at the office?'

     a.   A: ~~George jiaoshou~~   zai ~~bangongshi~~.
           ~~George Professor~~ at   ~~office~~
       'Yes(, he is at the office).'

     b.   A: ~~George jiaoshou~~   bu   zai ~~bangongshi~~.
           ~~George Professor~~ not at   ~~office~~
       'No(, he is not at the office).'

The negative full sentential answer in 245 is derived in 246. To obtain the preposition-echo answer '*bu zai*(not at)' alone, the PolP moves to the specifier of the FocP because of the strong [Focus] feature on the Focus head, after the DP '*George jiaoshou*(Professor George)' has been moved to the specifier of the TP. Then, the sentence undergoes the ellipsis of the TP first and then the ellipsis of the DP complement *bangongshi*(office) in the PP.

(246)

```
                    CP
                   /  \
                  C   FocP
                       / \
                      /  Foc'
                     /   /  \
                    Foc    TP
                          /    \
                        DP      T'
                       /  \    /  \
               George jiaoshou  T   PolP
              (Professor George)    /    \
                                  Pol     PP
                                   |     /   \
                                  Neg  <DP>    P'
                                   |   /  \   /  \
                                  bu       P    DP
                                 (not)    zai  bangongshi
                                          (at)  (office)
```
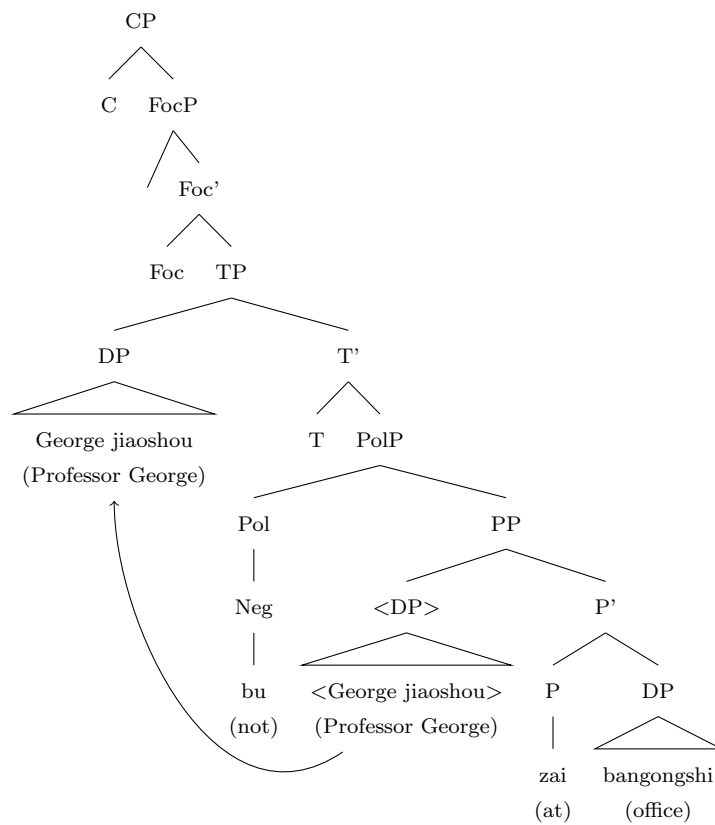
5.7 Adverb-Echo Answers to Yes/No Questions in Mandarin

Example 247 has the main verb *chi*(eat) in the *v*P '*chi shuiguo*(eat fruit)', and it contains also an adverb to modify the *v*P. However, if the answer only echoes the main verb *chi*(eat) with the polarity, as in 247e, it is unacceptable. The echo answer should echo the adverb *jingchang*(often) with the polarity, as in answer 247c. The derivation in 248 is of the negative sentential answer 247b. To derive the echo answer, once the DP *wo*(I) moves to the specifier of the TP to be the subject of the sentence, the PolP moves to the specifier of the FocP, since the [Focus] feature on the Focus head is strong in the echo answer to the yes/no question. The echo answer '*bu jingchang*(not often)' is derived following two more ellipses. First, the TP is deleted. Second, the second *v*P is deleted in the domain of the PolP in the specifier of the FocP.

(247) Q: ni   jingchang chi shuiguo ma?
          you often   eat fruit   Q

'Do you often eat fruit?'

a. A: wo jingchang chi shuiguo.
     I   often   eat fruit
  'Yes, I often eat fruit.'

b. A: wo bu jingchang chi shuiguo.
     I   not often   eat fruit
  'No, I don't eat fruit often.'

c. A: jingchang./ bu jingchang.
    often/   not often
  'Yes./ No.'

d. A: jingchang chi./ bu jingchang chi.
    often   eat/ not often   eat
  'Yes, I do./ No, I don't.'

e. * A: chi./ bu chi.
      eat/ not eat
  'Yes./ No.'

(248)

```
                          CP
                         /  \
                        C   FocP
                             \
                             Foc'
                            /   \
                          Foc    TP
                                /  \
                              DP    T'
                              |    /  \
                              wo  T   PolP
                              (I)    /    \
                                   Pol     vP
                                    |     /  \
                                   Neg  Adv    vP
                                    |    |    /  \
                                   bu  jingchang <DP>   v'
                                 (not) (often)   |     /  \
                                              <wo>  V+v    VP
                                              (I)   chi    /  \
                                                   (eat) <V>   DP
                                                         |      △
                                                       <chi>  shuiguo
                                                       (eat)  (fruit)
```
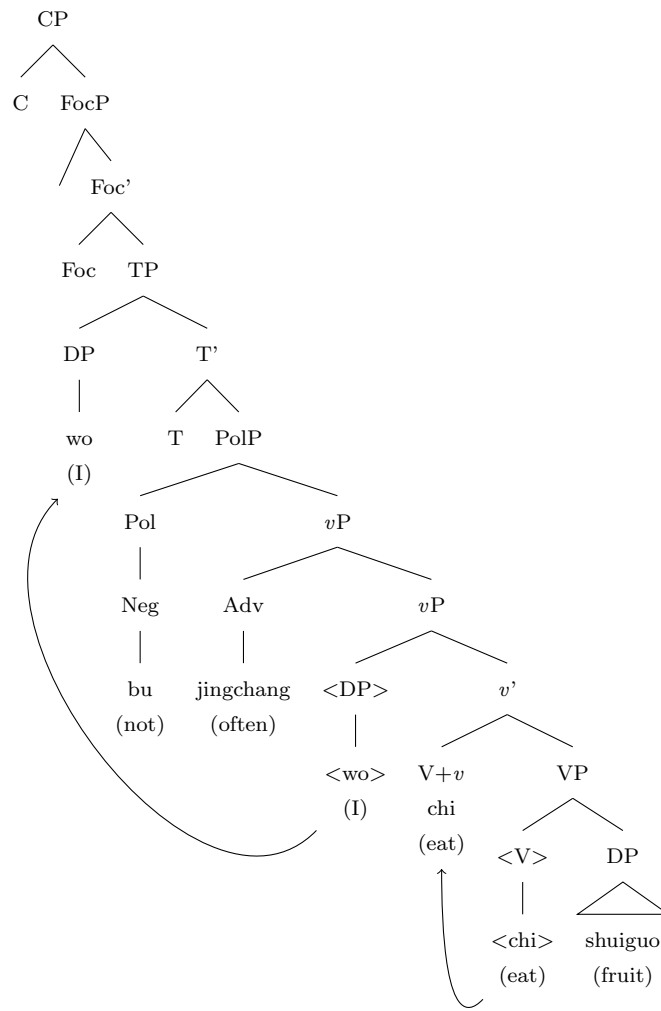
5.8   Summary

Holmberg (2016) proposes a theory about the syntactic derivation of answers to yes/no questions, which is that the answers to yes/no questions are all derived by ellipsis from the full sentential expressions. Mandarin should employ pro-drop and VP(or vP)-ellipsis to derive echo answers.

However, only some yes/no questions and answers with basic structures can be applied to the pro-drop and VP(or vP)-ellipsis to obtain echo answers. In many cases, the answers to yes/no questions in Mandarin cannot be derived by pro-drop and VP(or vP)-ellipsis, such as yes/no questions and answers containing serial verb constructions, the *ba* structure or

the *bei* structure and the *de* structure. The former verb(s) or verb phrase(s) in a serial verb construction, the *ba* structure or the *bei* structure and the *de* structure are in the domain outside of the deleted VP(or *v*P)-ellipsis. If the full sentential answers follow the pro-drop and VP(or *v*P)-ellipsis, these elements would still remain a part of the echo answers.

In addition, Holmberg (2016, pp. 191-197, Chap. 4) only discusses modal verb-echo answers and verb-echo answers. However, a verb is not necessary for a sentence in Mandarin. Therefore, if a yes/no question does not contain a verb, it is impossible for the full sentential answer, which does not have a verb, to derive a verb-echo answer or a modal echo answer by pro-drop and VP(or *v*P)-ellipsis. When a yes/no question does not have a verb, an adjective or a preposition can be the predicate of the sentence, and the echo answer can echo the adjective or the preposition with the polarity as the echo answer. Even when the yes/no question has a verb as the main verb, the answer can echo the adverb, which modifies the verb, as the echo answer with the polarity. Modal verbs, verbs, adjectives, prepositions and adverbs can be echoed with the polarity as the shortest echo answers. Therefore, in an echo answer, the PolP with the uninterpretable [Focus] feature, moves to the specifier of the FocP to check the [*u*Focus] from the strong [Focus] feature on the Focus head. Then, the echo answer is derived through several ellipses.

Chapter 6

The Syntax of Echo Answers to Yes/No Questions Including the '*de*'(得) Structures

Echo answers are generally discussed based on Holmberg's analysis in the previous chapter, in which the examples discussed are mainly simple sentence with basic syntactic derivation. However, there are many complicated structures that also need to be further discussed to check whether they can also be derived according to Holmberg's analysis.

In Mandarin, the '*de*'(得) structure is commonly used, which is a typical structure that afftects the echo answers to its corresponding yes/no questions. Therefore, this chapter focuses on the syntactic derivation of yes/no questions and answers that contain the '*de*'(得) structure.

6.1 The Introduction of '*de*'(得) in Mandarin

There are three '*de*' in Mandarin: *de*(的), *de*(地) and *de*(得) [1].

This first *de*(的) is used to modify nouns, which is the most discussed. There is much

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[1]Each of these three '*de*' has various usages. For easier glossing, '*de*(的)' is glossed as '*of*'; '*de*(地) is glossed as '*PTCL*'; '*de*(得)' is glossed as '*DE*'.

research on this *de*(的). It is in DPs, which are usually structured like 'AdjP/DP + *de*(的) + NP'. The structure 'DP + *de*(的) + NP' realises the possessive relationship, such as the 'of-construction' and the Saxon genitive construction in English. For example, in 249, the *de*(的) links the possessor *Emma* and the possession NP *book*(shu), which corresponds with the Saxon genitive construction in English. Similarly, example 250 is similar to the of-construction in English. The *de*(的) links the DP possessor *zhe tiao qunzi*(this dress) and the NP *yanse*(colour). Example 251 is in the structure 'AdjP + *de*(的) + NP'. Even though *miren*(attractive) is an adjective itself, it cannot modify a noun directly as in English. When an adjective modifies a noun in Mandarin, the *de*(的) should be used between the adjective and the noun.

(249) Emma de shu
       Emma of book
         'Emma's book'

(250) zhe tiao qunzi de yanse
       this CL   dress of colour
         'the colour of this dress'

(251) miren-de fengjing
       attractive scenery
         'attractive scenery'

The second *de*(地) is used to modify verbs. There are many usages for *de*(地). In general, this *de*(地) is usually in the structure 'AdjP/AdvP/VP + *de*(地) + VP' to link the modifier and the verb. In examples 252 to 254, even though the adverbs '*kuaisu*(fast)', '*nanguo*(sadly)' and '*touyebuhui*(head also not turn)' describe the statues or the degrees of the verbs, they cannot directly be followed by the verbs. The *de*(地) is used to connect the adverbs to the verbs.

(252) kuaisu-de pao
       fast   run

'run fast'

(253) ta nanguo-de ku le.
      he sadly   cry ASP
       'He cried sadly.'

(254) ta tou ye bu hui de   zou le.
      he head also not turn PTCL walk ASP
       'He walked away without looking back.'

The third *de*(得) is the one which will be discussed in this chapter. It links verbs or adjectives and the constituents that are used to further describe the degrees or the results of the preceding verbs or adjectives. *De*(得) is usually used in the structure 'VP/AdjP + *de*(得) + XP'.

In example 255, the word *xia*(down) following the *de*(得) describes the result of the verb *chi*(eat), which is to the right of the *de*(得), expressing the meaning that the subject has the ability to do the action to achieve the result. In example 256, the *de*(得) follows a verb *xia*(fall), conveying a meaning of possibility. In example 257, the constituent '*tebie gao*(very high)' following the *de*(得) describes the degree of the height of the previous verb *fei*(fly), which is to the right of the *de*(得).

(255) wo chi de xia   san   wan fan.
      I   eat DE down three CL rice
       'I am able to eat three bowls of rice.'

(256) Q: mingtian xia de liao   yu ma?
         tomorrow fall DE PTCL rain Q
       'Is it possible that tomorrow will rain?'

(257) na   ge re-qi-qiu   fei de tebie gao.
      that CL hot-air-ballon fly DE very high

'That hot air balloon flies very high.'

6.2   Two Types of *de*

The yes/no question in example 258 contains the 'V + *de* + adj' structure, which conveys the degree meaning. The question can only be answered using the adjective *kuai* with the polarity as the echo answer, such as in 258a. The verb *pao*(run) is the main verb of the full sentential answer 258d. However, it is unacceptable to echo the main verb with the polarity as the echo answer, as in 258b. The question can be answered also by using the entire *de* structure with the polarity, namely, the 'V + *de* + adj' structure '*pao de kuai*(run DE fast)', as in answer 258c.

(258)   Q: ta pao de kuai ma?
             he run DE fast Q
          'Is he fast at running?'

    a. A: kuai./ bu kuai.
         fast/   not fast
      'Yes./ No.'

    b. * A: pao./ bu pao.
          run/   not run
      'Yes./ No.'

    c. A: pao de kuai./ pao de bu kuai.
         run DE fast/   run DE not fast
      'Yes, he is./ No, he isn't.'

    d. A: ta pao de kuai./ ta pao de bu kuai.
         he run DE fast/   he run DE not fast
      'Yes, he is fast at running./ No, he isn't fast at running.'

However, a yes/no question with exactly the same surface structure can have another interpretation. In example 259, the surface structure is the same as the yes/no question in example 258. The yes/no question in 259 asks whether the subject has the ability to do the action of the *de* structure. Therefore, the yes/no question '*ta pao de kuai ma?*' expresses the meaning 'is he able to run fast?'. Regarding the echo answers to the yes/no question with the meaning of ability, the shortest echo answer must echo the entire *de* structure with the polarity, that is, '*pao de kuai*(run DE fast)' as in answer 259c. Unlike the echo answer in example 258, the yes/no question with the ability meaning *de* structure does not allow the question to only be answered with the adjective *kuai*(fast) and the polarity, such as in answer 259a. It is not acceptable to only echo the verb *pao*(run) with the polarity as the echo answer either, as in answer 259b.

(259)   Q: ta pao de kuai ma?
            he run DE fast Q
         'Is he able to run fast?'

    a. * A: kuai./ bu kuai.
             fast/   not fast
          'Yes./ No.'

    b. * A: pao./ bu pao.
             run/ not run
          'Yes./ No.'

    c. A: pao de kuai./ pao bu kuai.
            run DE fast/   run not fast
          'Yes, he is./ No, he isn't.'

    d. A: ta pao de kuai./ ta pao bu kuai.
            he run DE fast/   he run not fast
          'Yes, he is able to run fast./ No, he is not able to run fast.'

As displayed above, examples 258 and 259 have the same surface structures of the yes/no

questions and the same surface structures of the affirmative full sentential answers in 258d and 259d. However, the yes/no questions have different echo answers: example 258 only echoes the adjective *kuai*(fast) with the polarity; while example 259 echoes the '*pao de kuai*(run DE fast)' as a whole with the polarity to be the echo answer. According to Holmberg (2016), the echo answer derives from the full sentential answer through movements and ellipses. Therefore, since the echo answers are not the same, the derivations of the two full sentential answers should be different. In the full sentential answers, the other words are notional words. The only possibility to make these different interpretations is via the different usages of the particle *de*. Therefore, this thesis proposes that there are two types of *de*(得): The first '*de*' expresses the degree of something, such as in example 258, and the second '*de*' expresses the ability to do something, as in example 259.

As example 256 illustrated, the *de* in the example conveys the meaning of possibility, since it cannot say that the weather has the ability to rain. Similarly, in example 260, the *de* expresses the meaning of possibility, since the argument *niunai*(milk) of the predicate *huai*(bad) is a non-living object that cannot be interpreted as possessing the ability to do something. That is, the milk does not have the ability to turn bad. According to the entire sentential meaning, the *de* can only convey the possibility, meaning that the milk has the possibility of turning bad.

(260)　ruguo bu　fang zai bingxiang　li, niunai huai de　liao　　ma?
　　　　 if　　　not put　at　refrigerator in milk　　bad　DE PTCL Q
　　　　　'If it is not in the refrigerator, can the milk turn bad?'

However, the meanings of ability and possibility are sometimes ambiguous and difficult to be distinguished. In example 261, the *de* can be interpreted as expressing ability or expressing possibility. The shortest answer echoes the '*ying de liao*(win DE PTCL)' as a whole, no matter which interpretation of the ability or the possibility is conveyed. Therefore, the ability *de* and the possibility *de* are taken as the same category – the potential *de* in this thesis.

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(261) Q: tamen ying de liao   bisai ma?
          they   win DE PTCL game Q

   'Q1: Are they able to win the game?

   Q2: Do they have the possibility of winning the game?'

   A: ying de liao./   ying bu liao.
      win DE PTCL/ win not PTCL

    'Yes./ No.'

6.2.1 '*de*' – degree

The first usage of *de*(得) is for expressing degree. As illustrated above, the part following
de(得) describes the degree of the part in front of the *de*(得). In the 'X + *de* + X' surface
structure, usually, verbs or adjectives are to the left of *de*, and many types of constituents,
such as AdjP., VP. and TP, can follow the *de*; that is, for the usage of the degree *de*, the
surface *de* structure would be like 'V/adj + *de* + XP'.

In example 262, *de* is in the 'V + *de* + adj' surface structure. The degree *de* conveys the
meaning of to what degree – such as being happy, being excited or being sad you played.
Answering using the entire *de* structure is acceptable, but the shortest answer only echoes
the adjective *kaixin*(happy) with the polarity, as in answer 262a.

(262) Q: ni   wan de kaixin ma?
          you play DE happy Q
   'Were you happy while playing?'

   a. A: kaixin./ bu kaixin.
          happy/ not happy
       'Yes./ No.'

   b. A: wan de kaixin./ wan de bu kaixin.
          play DE happy/ play DE not happy

'Yes./ No.'

c. * A: wan./ bu wan.
        play/ not play
    'Yes./ No.'

d. Q: wo wan de kaixin./ wo wan de bu kaixin.
       I   play DE happy/ I   play DE not happy
    'Yes, I was happy while playing./ No, I wasn't happy while playing.'

Example 263 has the degree *de* in the 'adj + *de* + VP' surface structure, meaning whether he has been angry to the degree that he jumps up. The shortest echo answer is the VP constituent to the right of the degree *de* with the polarity, as in answer 263a.

(263) Q: ta qi   de tiao qi lai   le   ma?
          he angry DE jump rise come ASP Q
       'Did he jump up because of being angry?'

a. A: tiao qi lai   le./   mei tiao qi lai.
       jump rise come ASP/ not jump rise come
    'Yes./ No.'

b. * A: qi./   bu qi.
         angry/ not angry
    'Yes./ No.'

c. A: ta qi   de tiao qi lai   le./   ta qi   de mei tiao qi lai.
       he angry DE jump rise come ASP/ he angry DE not jump rise come
    'Yes, he jumped up because of being angry./ No, he didn't jump up because of being angry.'

In example 264, the surface structure of *de* is 'adj + *de* + TP/CP'. The *de* exhibits the degree meaning of the sentence, expressing the meaning of whether the outside is noisy to

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the degree that it affects your sleep. The shortest echo answer only echoes the modal verb in the TP (or CP) which follows the *de*, with the polarity as the echo answer, such as in answer 264a.

(264) Q: waimian chao de ni neng shuizhao ma?
outside noisy DE you can fall-asleep Q
'Can you fall asleep since the outside is noisy?'

    a. A: neng./ bu neng.
        can/ not can
      'Yes./ No.'

    b. * A: chao./ bu chao.
          noisy/ not noisy
      'Yes./ No.'

    c. A: waimian chao de wo neng shuizhao.
        outside noisy DE I can fall-asleep
      'Yes, I can fall asleep even though the outside is noisy.'

    d. A: waimian chao de wo bu neng shuizhao.
        outside noisy DE I not can fall-asleep
      'No, I can't fall asleep since the outside is noisy.'

Regarding the usage of the degree *de*, the part to the left of *de* in the 'V/adj + *de* + XP' structure is the given information, and the XP that follows the degree *de* is the new information or the information being questioned. The focus is on the polarity for the XP to the right of the degree *de*. That is, the variable polarity is in the domain between the degree *de* and the XP. The affirmative polarity is covert. The negative polarity forms the structure as 'V/adj + *de* + negation + XP'. When answering a yes/no question containing the degree *de* structure, the shortest answer only echoes the part following the degree *de* and the polarity.

6.2.2 '*de*' – potential

The second usage of *de*(得) is the potential *de*, which conveys the meaning of ability or possibility. The parts to the left and to the right of the *de*(得) convey the meaning together. The ability *de*(得) conveys the meaning – 'does the subject in the sentence have the ability to do the action conveyed by the words to the left of the ability *de*(得) with the result expressed by the word(s) to the right of the *de*(得)?' Regarding the meaning of possibility, the structure conveys the meaning – 'is it possible for the action to happen to achieve the result?' In the potential usage of the *de* surface structure 'X + *de* + X', the potential *de* follows the predicate which can be a verb, an adjective or a preposition, and is usually followed by a verb phrase or an adjective phrase expressing the result. The potential *de* also has a fixed structure followed by the adverb *liao*.

In example 265c, the potential *de* is in the 'V + de + VP' structure. The verb *na*(carry) to the left of the *de* and the verb *dong*(move) to the right of the *de* are the resultative verb construction. The potential *de* conveys the meaning of ability. The yes/no question asks whether the interlocutor has the ability to carry the heavy box. To answer yes/no questions containing the potential *de*, the potential *de* structure '*na de dong*(carry DE move)' should be answered as a whole with the polarity, such as in answer 265a. It is unacceptable to only echo the verb *na*(carry) to the left of the potential *de*, or to only echo the verb *dong*(move) to the right of the potential *de* as the answer, such as in examples 265c and 265b.

In example 266, the adjective *qingchu*(clear) follows the potential *de*, forming the potential *de* surface structure 'V + *de* + AdjP'. The potential *de* adds a meaning of *neng*(can) to the entire *de* 'V + *de* + AdjP.', conveying the meaning 'whether he has the ability to (or he can) see such small words clearly'. Therefore, the answer must answer the entire potential *de* structure with the polarity, such as in answer 266a. Answers 265c and 266c, which only echo the verb *kan*(see) and *qingchu*(clear) with the polarity, are not acceptable.

(265) Q: ni   na   de dong zheme chen   de xiangzi ma?
          you carry DE move such   heavy of box   Q
        'Are you able to carry such a heavy box?'

a. A: na   de dong./ na   bu dong.
   carry DE move/ carry not move
   'Yes./ No.'

b. * A: dong./ bu dong.
      move/ not move
   'Yes./ No.'

c. * A: na./   bu na.
      carry/ not carry
   'Yes./ No.'

d. A: wo na   de dong zheme chen   de xiangzi.
      I   carry DE move such   heavy of box
   'Yes, I am able to carry such a heavy box.'

e. A: wo na   bu dong zheme chen   de xiangzi.
      I   carry not move such   heavy of box
   'No, I am not able to carry such a heavy box.'

(266) Q: ta kan de qingchu name xiao de zi   ma?
          he see DE clear   such small of word Q
       'Is he able to see such small words clearly?'

   a. A: kan de qingchu./ kan bu qingchu.
         see DE clear/   see not clear
      'Yes./ No.'

   b. * A: kan./ bu kan.
           see/ not see
      'Yes./ No.'

   c. * A: qingchu./ bu qingchu.
           clear/   not clear

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'Yes./ No.'

    d. A: ta kan de qingchu name xiao de zi.
          he see DE clear   such small of word
        'Yes, he is able to see such small words clearly.'

    e. A: ta kan bu qingchu name xiao de zi.
          he see not clear   such small of word
        'No, he is not able to see such small words clearly.'

In potential *de* sentences, there is a fixed potential *de* structure 'X + *de* + *liao*'. The '*de liao*' is combined with a verb, such as in example 267, or an adjective, such as in 268, to convey a meaning of 'ability to accomplish' or 'possibility to do the action'.

In example 267, without the potential *de* structure '*de liao*', the sentence would only describe the action of 'eat chocolate'. By adding the potential *de* structure to the verb *chi*(eat), the sentence expresses the meaning of whether the subject is able to eat the chocolate. Similarly, in example 268, the adjective *hao*(fine) is combined with the *de liao* to form the potential *de* structure, which conveys the meaning of either 'be able to getting well' or 'have the possibility to get well'.

(267) Q: ni chi de liao   zheme duo qiaokeli ma?
        you eat DE PTCL so   much chocolate Q
     'Are you able to eat so much chocolate?'

    a. A: wo chi de/bu liao   zheme duo qiaokeli.
          I   eat DE/not PTCL so   much chocolate
        'Yes(/No), I am (not) able to eat so much chocolate.'

    b. A: chi de/bu liao.
          eat DE/not PTCL
        'Yes./ No.'

(268) Q: ta de bing   hao de liao   ma?
           he of illness well DE PTCL Q

   'Is his illness able to be cured?/

   Does his illness have the possibility of being cured?'

   a. A: ta de bing   hao de/bu   liao.
            he of illness well DE/not PTCL

      'Yes(/No), his illness is (not) able to be cured./

      Yes(/No), his illness has (no) possibility of being cured.'

   b. A: hao de liao./   hao bu liao.
           well DE PTCL/ well not PTCL

      'Yes./ No.'

6.3 The Syntactic Derivation of the Degree '*de*' Structure in Yes/No Questions and Answers

6.3.1 Literature review of Sybesma's analysis on the Degree *de*(得) structure

When discussing the meaning of the *de* structure, the existing research only discusses the meaning of the degree type. Huang (1988) mentions two constructions, displayed in examples 269 and 270 (Huang, 1988, p. 274). Example 269 is the descriptive complement construction, and example 270 is the resultative complement construction. Huang (1988) focuses on the relation between the two verbs: the first action verb *pao*(run) and the second stative verb or adjective *kuai*(fast) in example 269, or the first verb *tiao*(jump) and the second adjective *lei*(tired). However, this thesis takes these two constructions to be the same expression, since both convey the degree meaning. In both these constructions, the adjectives are used to describe how much the actions have affected the subjects. For example, in example 269, the sentence means 'how fast I run'. I run 'not slow', 'not normal', not 'just fast'; I run very fast. In the same way, the adjective *lei*(tired) describes how much they played. That is, in these two examples 269 and 270, the adjective phrases following the *de* express the degree of the verbs to the left of the *de*.

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(269) wo pao de hen kuai.
       I   run DE very fast
         'I run very fast.'

(270) tamen tiao   de hen lei.
       they   jump DE very tired
         'They jumped till they got very tired.'

In Mandarin, some sentences are ambiguous in meaning since they can be interpreted as conveying a result or expressing the degree. In example 271 cited from Sybesma (2013, p. 19, Chap. 2), the resultative sentence 271a and the *de* structure sentence 271b have the same interpretation.

(271)   a. Zhang San ku shi le   shoujuan.
            Zhang San cry wet ASP handkerchief
              'Zhang San cried the handkerchief wet.'

         b. Zhang San ku de shoujuan   shi le.
            Zhang San cry DE handkerchief wet ASP
              'Zhang San cried the handkerchief wet.'

Sybesma (2013, pp. 18-26, Chap. 2) takes the sentence 271a as a cluster resultative sentence and the *de* structure in the sentence 271b as a degree structure. The small clause, *shi le shoupa*(handkerchief wet), is a result-denoting complement to the main verb *ku*(cry) of the sentence, which conveys the meaning that the result of the action 'Zhang San cried' is that the handkerchief is wet.

In sentence 271b, the small clause '*shi le shoupa*(handkerchief wet)' conveys to what degree Zhang San cried. Zhang San did not cry a little; he cried so much that his handkerchief was wet. Sybesma (2013, pp. 26-58, Chap. 2) proposes that there is an Extent Phrase(abbreviated to ExtP) expressing degree in the domain between the VP and the

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small clause. The *de* is in the head of the ExtP, and the basic syntactic derivation is as in 272. Since the *de* is a dummy *de* which does not affect the semantic meaning, it is vague in semantics to distinguish the resultative sentence 271a and the degree-expressing sentence 271b. The result-denoting meaning and the degree-expressing meaning should be interpreted from the perspective of pragmatics.

(272)

```
                    CP
                   /  \
                  C    TP
                      /  \
                    DP    T'
                    |    /  \
              Zhang San  T   VP
             (Zhang San)    /  \
                           V    ExtP
                           |    /   \
                          ku  Ext    SC
                         (cry)  |    / \
                               de  shoujuan shi le
                                  (handkerchief wet ASP)
```
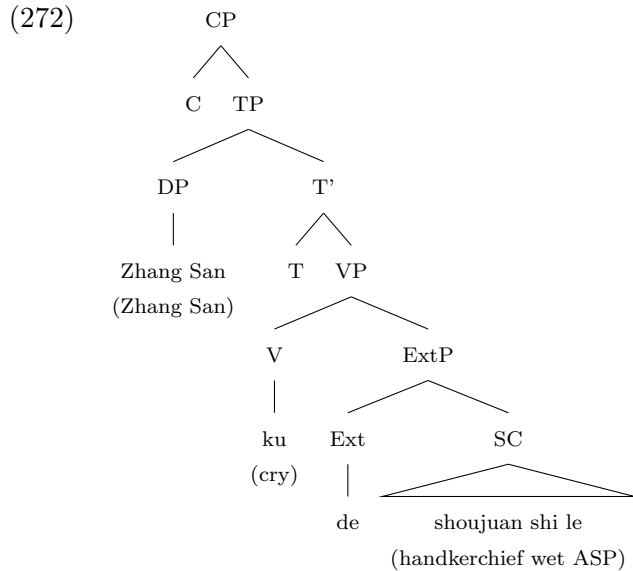
6.3.2 The syntactic derivation of answers to yes/no questions containing the degree *de*

According to Sybesma (2013, pp. 18-58, Chap. 2), the derivation for the full sentential answers 273a and 273b to the yes/no question in example 273 is like example 274 in which the 'ExtP' head is renamed as 'DeP' (and all 'ExtP' is renamed as 'DeP' in the following examples and discussion). The yes/no question can be answered also by the omitted answer 273c.

(273) Q: ta ku de yanjing hong le   ma?
         she cry DE eyes   red   ASP Q
      'Does she cry to the extent that her eyes turn red?'

      a. A: ta   ku de yanjing hong le.
            she cry DE eyes   red   ASP

'Yes, she cries to the extent that her eyes turn red.'

b. A: ta   ku de yanjing mei   hong.
       she cry DE eyes   not-have red

   'No, she doesn't cry to the extent that her eyes turn red.'

c. A: yanjing hong le./   yanjing mei   hong.
       eyes   red   ASP/ eyes   not-have red

   'Yes./ No.'

d. A: hong le./   mei hong.
       red   ASP/ not red

   'Yes./ No.'

(274)

```
            CP
           /  \
          C   FocP
              /  \
             /   Foc'
                 /  \
               Foc   TP
                    /   \
                  DP      T'
                  |      /  \
                 ta     T    vP
                (she)       /   \
                        <DP>      v'
                         |       /  \
                       <ta>   V+v     VP
                       (she)   |     /   \
                               ku  <V>    DeP
                              (cry) |     /  \
                                  <ku>  de   SC
                                  (cry)      /|\
                                          yanjing Pol red
                                          (eye Aff/not red)
```
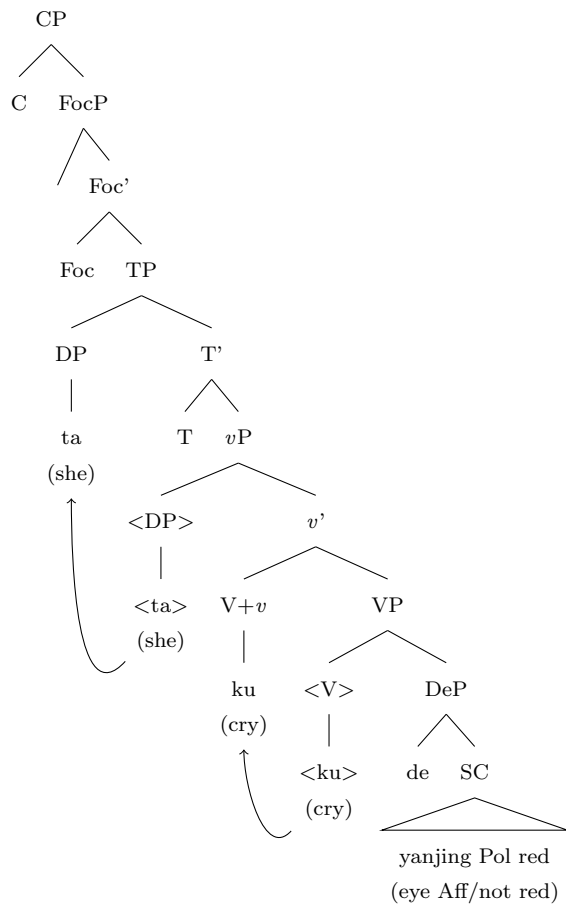
In the yes/no question, the variable polarity is with the adjective *hong*(red) in the small clause. In the echo answer, the Focus head has a strong [Focus] feature. The small clause containing the variable polarity can move to the specifier of the FocP, and then the TP is deleted. Following the first ellipsis, the small clause remains on the specifier of the FocP to be the omitted answer, as in 273c. Then, it can further undergo the pro-drop to delete the subject of the small clause to derive the shortest echo answer 273d.

Sybesma (2013, pp. 18-58, Chap. 2) only discusses the degree *de* structure that is followed by a small clause. A small clause is composed of a subject and a predicate. Functional phrases can be in the small clause also. However, the degree *de* can be followed by a complete sentence, such as in examples 275 and 276.

In example 275, the clause following the degree *de* expresses how rich the subject is. It is a degree-expressing sentence. However, the degree-expressing clause contains a modal verb *neng*(can) and a verb *mai*(buy), which clearly illustrates that the clause is not a small clause but a TP or a CP. Similarly, in example 276, there are two verbs *xiang*(wang) and *shuohua*(talk) in the degree-expressing clause.

(275)   ta fu   de neng mai ji   ge xiao dao.
        he rich DE can   buy several CL small island
           'He is rich enough to buy several small islands.'

(276)   ni   fan   de wo bu xiang shuohua.
        you bother DE I   not want talk
           'You bother me so much that I don't want to talk.'

If the declarative sentence in example 275 turns into a yes/no question by adding a yes/no question particle, the yes/no question and the answer would be as in example 277. The declarative sentence in example 275 is the full affirmative sentential answer 277a. The question can be answered also by the reduced answers as in 277b to 277d and the shortest echo answer 277d.

(277) Q: ta fu   de neng mai ji   ge xiao dao   ma?
         he rich DE can   buy several CL small island Q
      'Is he rich enough to buy several small islands?'

   a. A: ta fu   de (bu) neng mai ji   ge xiao dao.
          he rich DE (not) can   buy several CL small island
       'Yes(/No), he is (not) rich enough to buy several small islands.'

   b. A: (bu) neng mai ji   ge xiao dao.
          (not) can   buy several CL small island
       'Yes(/No), he is (not) rich enough to buy several small islands.'

   c. A: (bu) neng mai.
          (not) can   buy
       'Yes./ No.'

   d. A: (bu) neng.
          (not) can
       'Yes./ No.'

In example 277, the variable polarity is with the modal verb *neng*(can) in the degree-expressing clause. The acceptable reduced answers in 277b to 277d are all in the domain of the PolP. Regarding the matrix sentence, the focus is on the PolP for the degree-expressing clause. As the degree-expressing clause which is a complete sentence, there should be a Focus also to further derive the echo answer in the degree-expressing clause, such as in answers 277c and 277d. As proposed in the previous chapter, the FocP is in the highest position in the domain of the CP. Therefore, the degree-expressing clause is proposed to be a CP, and the derivation of the full sentential answer 277a would be like 278.

In the echo answer, the Focus head in the highest position in the matrix CP domain has a strong [Focus] feature, which attracts the variable polarity in the sentence. Since the variable polarity is in the degree-expressing CP, the PolP cannot move out of the CP. Therefore, the Focus head attracts the entire subclause to the specifier of the FocP, as in step 1 in 279.

Then, the TP in the matrix CP is deleted, as in step 2 in 280. The subclause CP in the specifier of the FocP remains, and the omitted answer 277b is derived. In the subclause CP, there is also a FocP in the highest position in the CP domain, which further attracts the variable polarity to the specifier of the Focus in the subclause. The derivation of this step 3 is illustrated in 281. Then, the TP in the subclause is deleted, as in step 4 in 282. Then, the sentence undergoes the vP-ellipsis to derive the shortest echo answer 277d, as in step 5 in 283.

(278)

CP
C   FocP
        Foc'
    Foc   TP
        DP   T'
        ta$_i$
        (he)   T   AdjP
                DP   Adj'
                ta$_i$
                (he)   Adj   DeP
                        fu   de   CP
                       (rich)   C   FocP
                                          Foc'
                                      Foc   TP
                                          PRO$_i$ T'
                                                 T   PolP
                                              Pol   ModP
                                           ∅/not   Mod   vP
                                          (Aff/Neg) neng   V+v VP
                                                    (can) mai   V   DP
                                                          (buy)   mai   ji ge xiao dao
                                                                 (buy) (several small island)
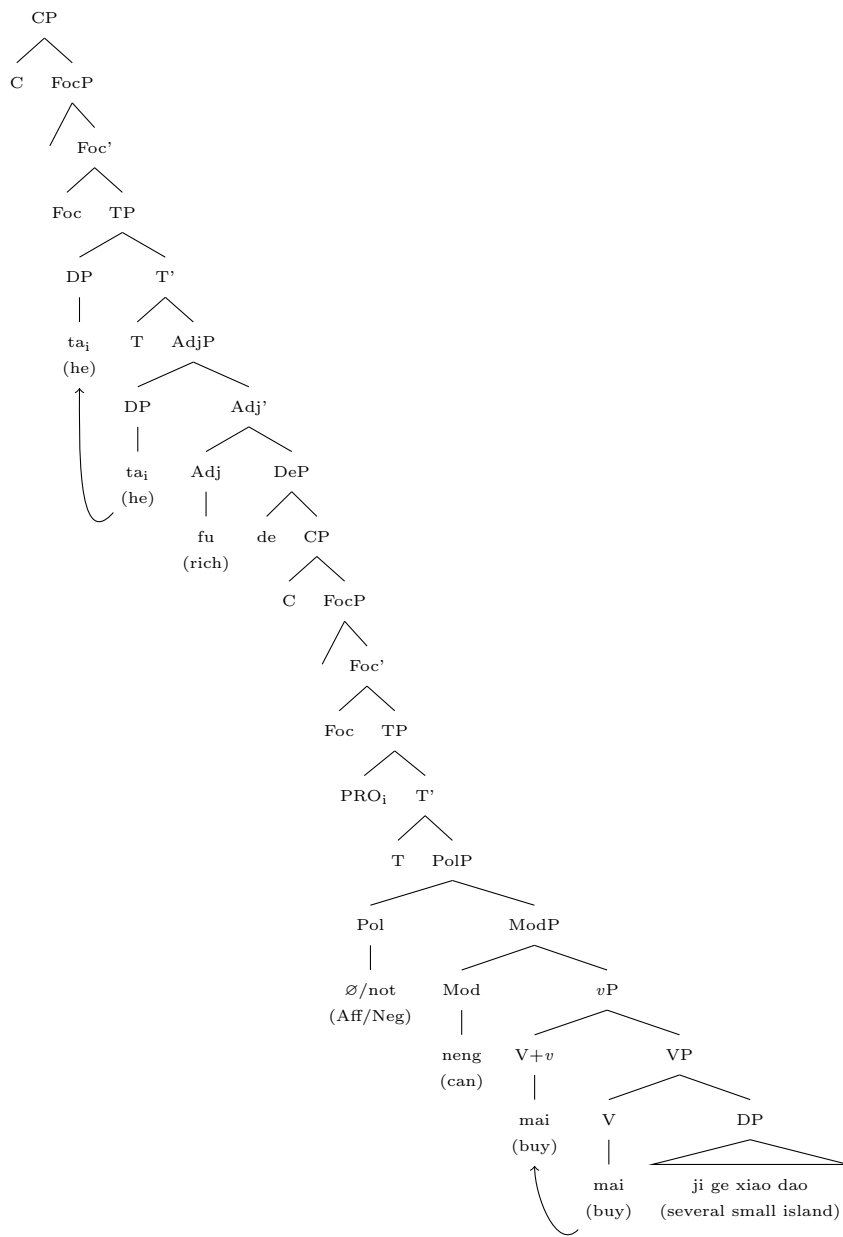
Step 1: Moving the subclause CP to the specifier of the FocP in the matrix clause.

176

(279)
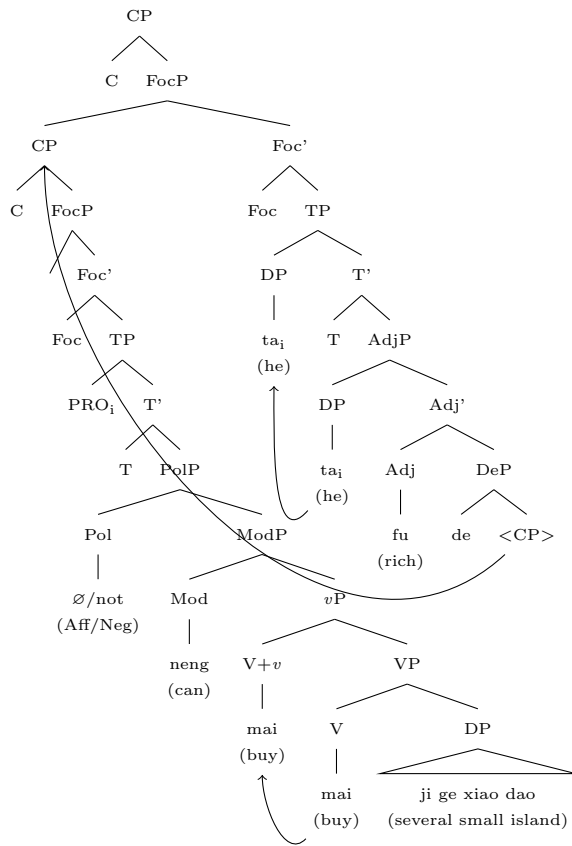
Step 2: Deleting the TP in the matrix clause.

(280)

```
                    CP
                   /  \
                  C    FocP
                      /    \
                    CP      Foc'
                   /  \       |
                  C    FocP   Foc
                      /   \
                        Foc'
                       /    \
                     Foc     TP
                            /   \
                         PRO_i   T'
                                /  \
                               T    PolP
                                   /    \
                                 Pol    ModP
                                  |     /    \
                             ∅/not   Mod      vP
                             (Aff/Neg) |      /   \
                                   neng   V+v     VP
                                   (can)   |     /   \
                                         mai    V     DP
                                         (buy)  |    /  \
                                               mai  ji ge xiao dao
                                               (buy) (several small island)
```
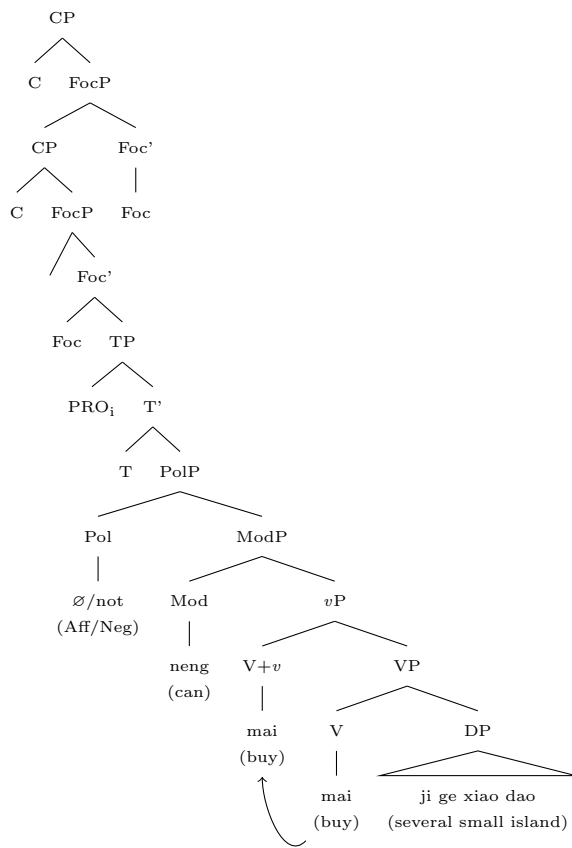
Step 3: Moving the PolP to the specifier of the FocP in the subclause CP.

178

(281)
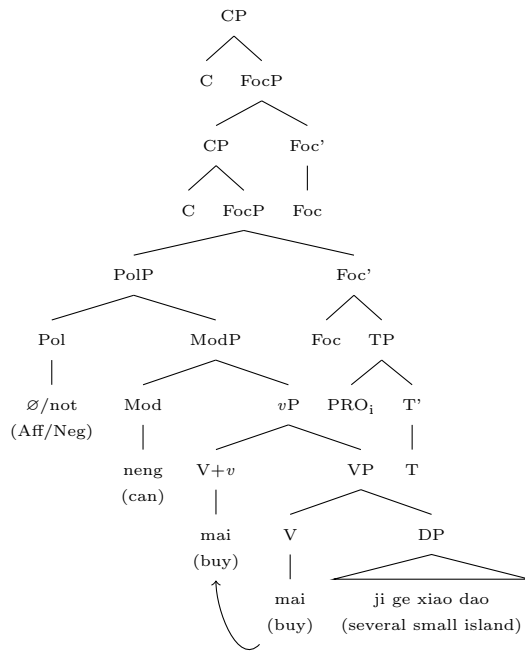
Step 4: Deleting the TP in the subclause CP.

(282)
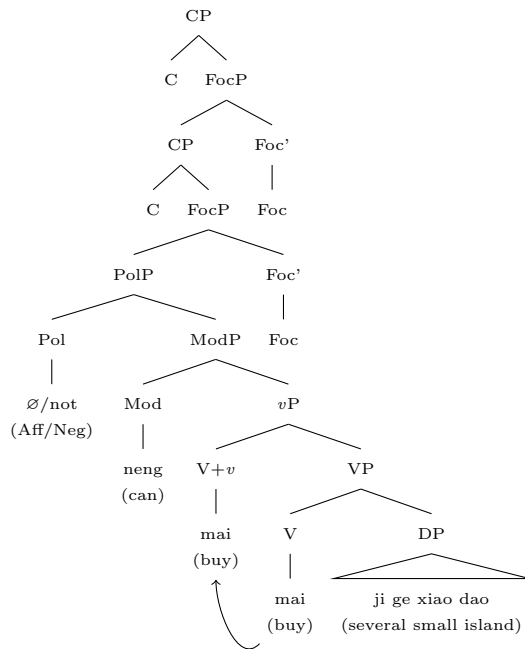
Step 5: Deleting the *v*P in the PolP.

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(283)

```
                          CP
                        /    \
                       C     FocP
                            /    \
                          CP      Foc'
                        /    \      |
                       C     FocP  Foc
                            /    \
                         PolP     Foc'
                        /    \      |
                      Pol    ModP  Foc
                       |      |
                    ∅/not    Mod
                   (Aff/Neg)  |
                            neng
                            (can)
```
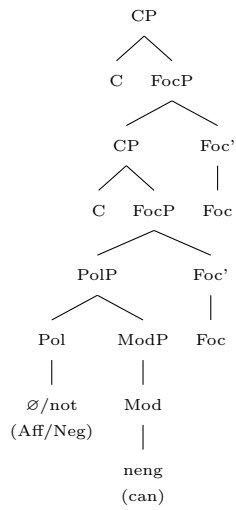
Following step 4 in 282, if the sentence further undergoes the VP-ellipsis, answer 277c is derived as the derivation in 284.

(284)

```
                          CP
                        /    \
                       C     FocP
                            /    \
                          CP      Foc'
                        /    \      |
                       C     FocP  Foc
                            /    \
                         PolP     Foc'
                        /    \      |
                      Pol    ModP  Foc
                       |     /   \
                    ∅/not   Mod   vP
                   (Aff/Neg) |     |
                           neng   V+v
                           (can)   |
                                  mai
                                 (buy)
```
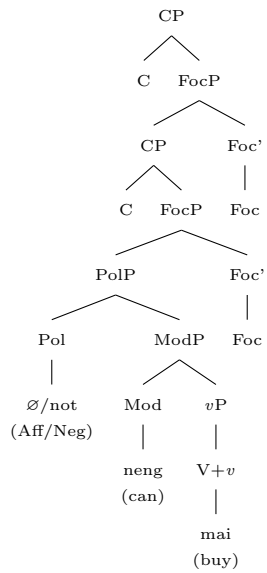
In the previous chapter, it was demonstrated that a verb is not necessary to form a sentence in Mandarin, such as in example 285 and its derivation in 286.

(285) zhe dao cai   haochi.
       this CL dish delicious
          'This dish is delicious.'

(286)

```
                    CP
                   /  \
                  C    TP
                      /  \
                    DP    T'
                   / \   / \
          zhe dao cai  T   AdjP
          (this dish)     /   \
                      <DP>    Adj
                               |
                            haochi
                          (delicious)
```
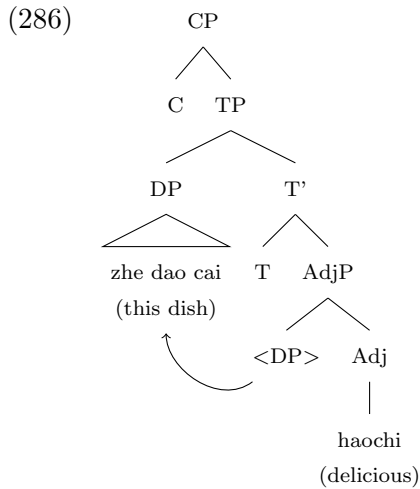
Therefore, the degree-expressing small clause can be taken as a CP also. For example 273, which is re-presented as example 287 below, the degree-expressing clause contains a DP *yanjign*(eyes) as the subject and an adjective *hong-le*(red ASP) as the predicate, in which the particle *le* marks the tense. The variable polarity is with the AdjP in the subclause, namely, the degree-expressing CP. The strong Focus feature in the matrix clause attracts the variable polarity to the specifier of the FocP. Since the PolP cannot move out of the degree-expressing CP, the entire subclause moves to the specifier of the FocP. Then, the TP in the matrix clause is deleted. In the specifier of the FocP, the degree-expressing CP contains a FocP also, and the strong [Focus] feature attracts the variable PolP to the specifier of the FocP in the domain of the degree-expressing CP. Then, the TP containing the subject *yanjing*(eyes) in the degree-expressing CP is deleted. Only the variable polarity and the adjective *hong*(red) remain as the echo answer.

(287) Q: ta ku de yanjing hong le   ma?
           she cry DE eyes   red   ASP Q
       'Does she cry to the extent that her eyes turn red?'

   a. A: ta ku de yanjing hong le.
          she cry DE eyes   red   ASP
      'Yes, she cries to the extent that her eyes turn red.'

   b. A: ta ku de yanjing mei   hong.
          she cry DE eyes   not-have red

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'No, she doesn't cry to the extent that her eyes turn red.'

c. A: hong le./   mei hong.
     red   ASP/ not red

  'Yes./ No.'

(288)

```
                    CP
                  /    \
                 C     FocP
                        \
                        Foc'
                       /   \
                     Foc    TP
                           /   \
                         DP     T'
                          |    /  \
                         ta   T    vP
                        (she)     /  \
                              <DP>    v'
                               |     /  \
                             <ta>  V+v    VP
                             (she)  |    /  \
                                   ku  <V>   DeP
                                  (cry) |   /   \
                                     <ku>  de    CP
                                     (cry)      /  \
                                               C    FocP
                                                     \
                                                     Foc'
                                                    /   \
                                                  Foc    TP
                                                        /   \
                                                      DP     T'
                                                       |    /  \
                                                   yanjing  T   PolP
                                                   (eyes)      /   \
                                                             Pol    AdjP
                                                              |    /   \
                                                            ∅/bu <DP>   Adj
                                                           (Aff/not) |    |
                                                              <yanjing> hong-le
                                                               (eyes)   (red)
```

182
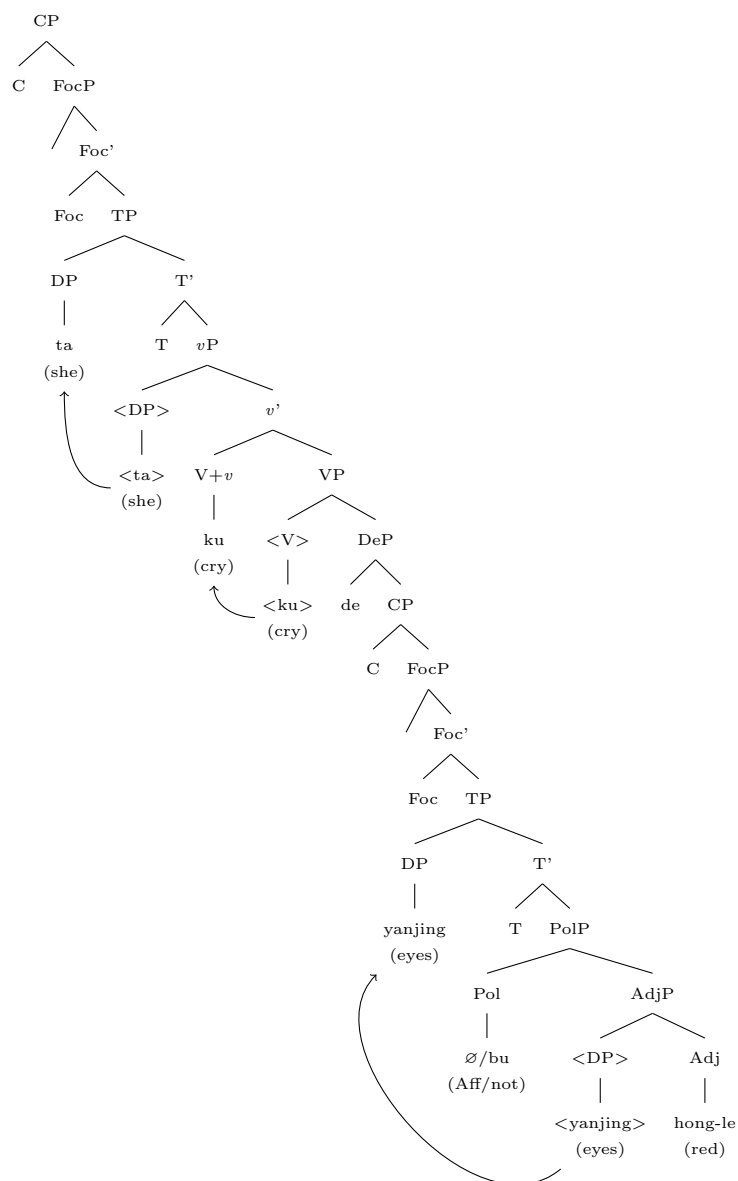
6.4 The Syntactic Derivation of the Potential '*de*' Structure in Yes/No Questions and Answers

6.4.1 Defining the potential *de*

Example 289 contains the potential *de* structure *pa de shang qu*(climb DE up go) which conveys the meaning of 'being able to climb up'.

(289) women pa   de shang qu na   zuo shan   ma?
      we   climb DE up   go that CL mountain Q
      'Are we able to climb up that mountain?'

The potential *de* structure is in the affirmative polarity. Normally, the affirmative polarity would be covert in the head of the PolP to the left of the main verb *pa*(climb). The overt negative yes/no question would be as in 290, but it is ungrammatical in Mandarin.

(290) * women bu pa   de shang qu na   zuo shan   ma?
         we   not climb DE up   go that CL mountain Q
         'Aren't we able to climb up that mountain?'

The corresponding negative yes/no question would be as in example 291. The overt negation *bu*(not) is between the main verb *climb* and the result-expressing words '*shang qu*(up go)', replacing the position of the potential *de* in the affirmative yes/no question. However, the structure '*pa bu shang qu*(climb not up go)' continues to convey the ability meaning, which indicates that the potential meaning is not conveyed by the word *de* but by the structure or this specific functional position in syntax. If the affirmative polarity is covert as usual, such as in example 292, the sentence loses the potential meaning of ability. Therefore, the affirmative polarity must be spelt out to mark the potential meaning.

(291) women pa   bu shang qu na   zuo shan   ma?
      we   climb not up   go that CL mountain Q
      'Aren't we able to climb up that mountain?'

(292) women pa   ∅ shang qu na   zuo shan   ma?
      we   climb ∅ up   go that CL mountain Q
        'Do we climb up that mountain?'

The structure 'X + *de/bu* + X' in this type of examples 289 and 291, conveys a meaning of potential. The potential *de* is the affirmative polarity in this potential-expressing structure, even the affirmative polarity for the entire sentence. The corresponding negative polarity is spelt out as *bu*(not) in the potential-expressing structure. To be distinguished from the degree *de*, I would keep the name of the affirmative potential spelt-out *de* as the potential *de*.

6.4.2   Literature review of the resultative structure

Hoekstra (1988) – The result denoting small clause

In the research of Hoekstra (1988, 1992), the resultative constructions are proposed as being composed of non-stative verbs and the denoting-result part. In example 293, the part '*wall colourful*' denotes the result of the action conveyed by the main verb *paint*. Hoekstra (1988, 1992) argues that the denoting-result part is a small clause that merges with the verb phrase as the complement.

(293)   We painted the wall colourful.

Mandarin also uses resultative sentences, such as examples 271a and 295. In 295, the state of the window being open results from the activity of 'he pushing'. Sybesma (2013, pp. 9-58, Chap. 2) agrees with the resultative syntactic structure proposed by Hoekstra (1988), as in 294. The result-denoting small clause merges with the VP as the complement. The predicate in the small clause raises to be with the verb in the VP to compose the cluster resultative. The syntactic derivation of 295 would be as in 296.

(294)   *Result structure*
        NP [$_{VP}$ V [$_{SC}$ NP XP]]

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(295) ta tui   kai   chuanghu.
       he push open window
          'He pushed the window open.'

(296)

```
                        CP
                       /  \
                      C    TP
                          /  \
                        DP    T'
                        |    /  \
                        ta  T    vP
                       (he)     /  \
                          <DP>      v'
                           |       /  \
                         <ta>   V+v    VP
                         (he)    |    /  \
                               tui  <V>   SC
                              (push) |   /  \
                               <tui+<kai>>  chuanghu <kai>
                               (push open)  (window <open>)
```
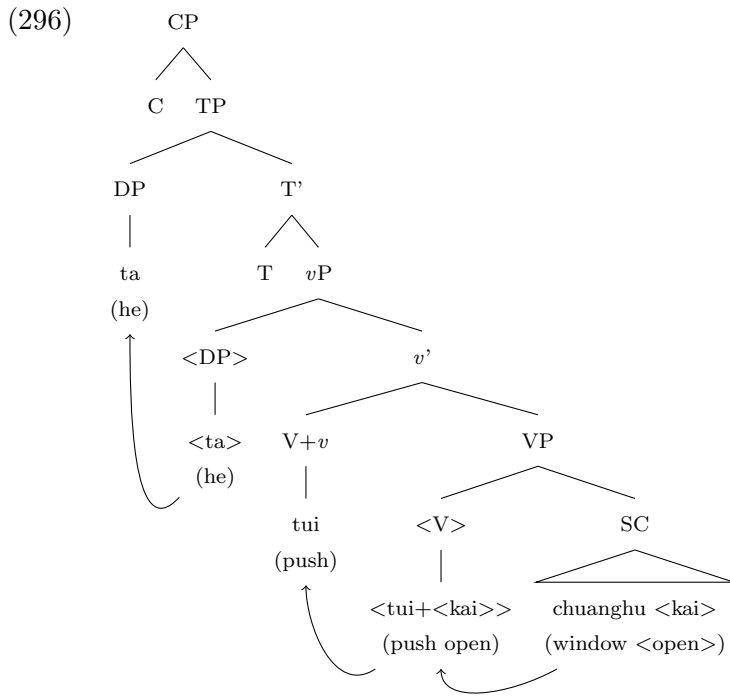
However, in Hoekstra (1988) and Sybesma (2013, pp. 9-58, Chap. 2), the small clause
is taken as an XP composed of a subject and a predicate and, possibly, some functional
phrase, but not a TP.

As described in the previous chapters, verbs are not necessary in a sentence in Mandarin,
such as in example 297. In addition, a sentence without a verb can also contain tense, as in
example 298. In 298, the particle *le* marks a tense indicating completion, which conveys
the meaning of 'getting the adjective predicate'. Therefore, the result-denoting part in the
'DP AdjP' structure which is treated as a small clause, can be treated as a TP as well, such
as in example 271a which is re-listed as 299 below (Sybesma, 2013, p. 19, Chap. 2). If the
result-denoting small clause is actually a TP, the derivation of the result-denoting sentence
needs to be further considered.

(297)   ta gao.
        he tall
          'He is tall.'

(298)   ta gao le.
        he tall ASP
          'He is getting taller.'

(299)   Zhang San ku shi le   shoujuan.
        Zhang San cry wet ASP handkerchief
          'Zhang San cried the handkerchief wet.'

In some sentences in Mandarin, the result-denoting word is a verb itself. In example 300, the result-denoting clause, 'this stone moved', results from the activity 'I carry'. The derivation of the sentence is supposed to be as displayed in 301, based on Hoekstra (1988) and Sybesma (2013, pp. 9-58, Chap. 2). However, the result-denoting word *dong*(move) is a verb itself, and the aspect denoting word *le*(PAST) is in the result-denoting sentence as well, which indicates that the result-denoting sentence cannot be a small clause.

(300)   wo ban   dong le   zhe kuai da shitou.
        I   carry move ASP this CL   big stone
          'I moved this big stone.'

(301)

```
                        CP
                       /  \
                      C    TP
                          /  \
                        DP    T'
                        |    /  \
                       wo   T    vP
                       (I)      /  \
                            <DP>    v'
                             |     /  \
                          <wo>  V+v    VP
                           (I)   |    /  \
                               ban  <V>    SC
                             (carry) |    /  \
                                 <ban+<dong le>>  zhe kuai da shi tou <dong le>
                                 (carry moved)    (this big stone <moved>)
```
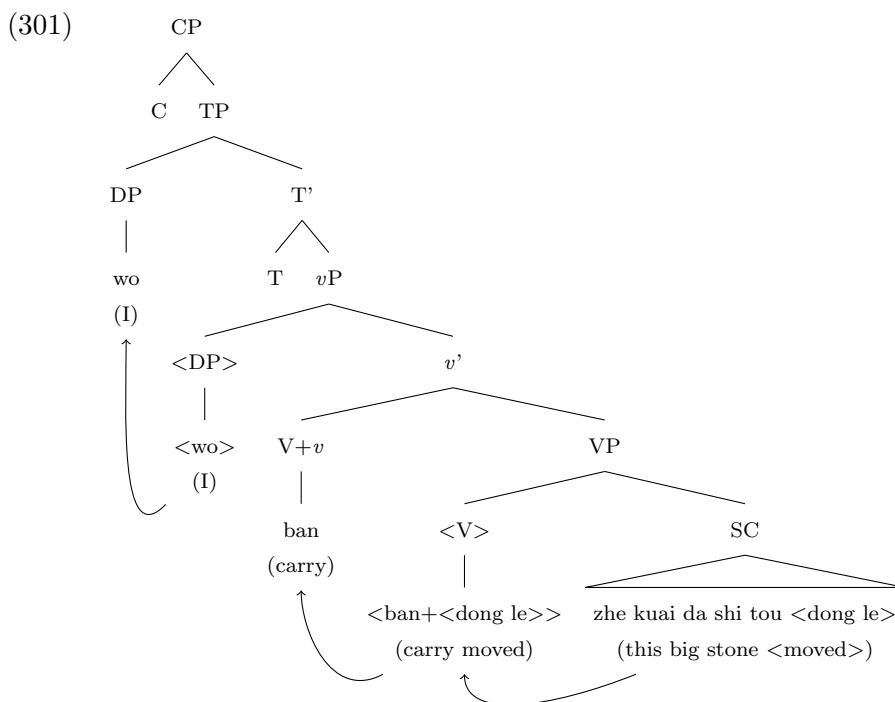
In addition, Mandarin can employ compound verbs to express a result meaning, such as the word '*zhao dao*(find)' in example 302. In this example, the word *find* in English can express the activity '*looking for*' as well as the result '*reaching the goal*' by itself. That is, in English, the verb *find* in the sentence '*I found the lost key*' can convey the meaning 'I was looking for the lost key and I successfully located the key by finding it'. However, in Mandarin, it takes a compound verb *zhao dao* to realise the same meaning. The verb *zhao*(find) only expresses the activity '*looking for*', and it must combine the particle *dao*(reach) to convey the result-denoting meaning.

(302) wo zhao   dao   le   diushide yaoshi.
       I   look-for reach ASP lost   key
        'I found the lost key.'

In example 303, the compound verb *ting dong*(hear understand) consists of two verbs *ting*(hear) and *dong*(understand), which conveys the meaning that 'I heard what the teacher said and I understood what the teacher said'. Regarding the action-expressing verb *ting*(hear), it has two arguments: the agent DP *wo*(I) and the theme DP *laoshi shuo de hua*(what the
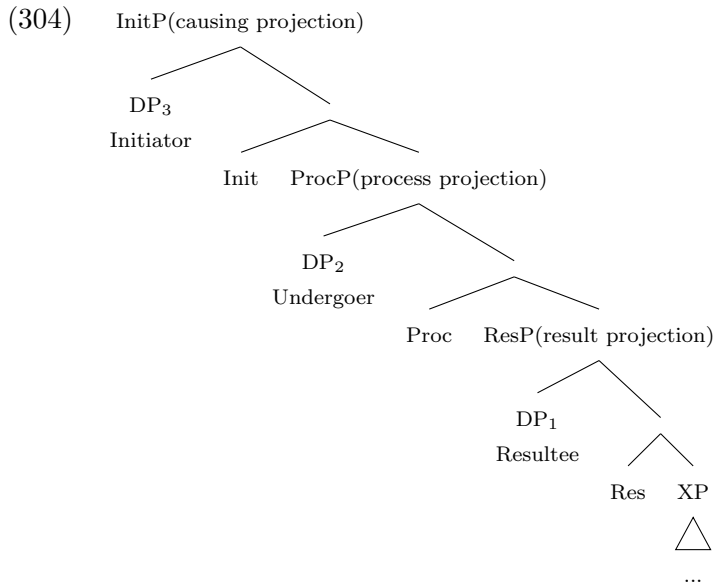
teacher said). Regarding the result-expressing verb *dong*(understand), it likewise has two arguments: the agent DP *wo*(I) and the theme DP *laoshi shuo de hua*(what the teacher said). Therefore, the result-expressing word *dong*(understand) cannot be with the DP *laoshi shuo de hua*(what the teacher said) in a small clause to be the complement of the action-expressing verb *ting*(hear).

(303) wo ting dong   laoshi shuo de hua   le.
       I   hear understand teacher say   of words ASP
         'I understood what the teacher said.'

In short, Hoekstra (1988)'s analysis of the result-denoting small clause does not work for the resultative-expressing phenomena in Mandarin.

Ramchand (2008) – Initiation-process-result verbs

Ramchand (2008, pp. 63-110, Chap. 4) decomposes different natural classes of verbs in English in syntax and proposes an intriguing constructionist structure. Essentially, an event has a cause, a process and a result. These three components of an event have their own respective projections in syntax that map on to the initiation phrase (the causing projection), the process phrase (the process projection) and the result phrase (the result projection), such as the derivation in 304.

(304)

InitP(causing projection)

DP₃ Initiator

Init   ProcP(process projection)

DP₂ Undergoer

Proc   ResP(result projection)

DP₁ Resultee

Res   XP

...

In English, example 305 quoted from Ramchand (2008, p. 75, Chap. 4) is derived as in 306. The verb *break* identifies the sub-events of the cause, the process and the result. The DP *Katherine* is the subject of the cause as the initiator. The DP *the stick* is the resultee as well as the undergoer.

(305)   Katherine broke the stick in pieces.

(306)

InitP

Katherine   Init'

Init
break   ProcP

the stick   Proc'

Proc
<break>   ResP

<the stick>   Res'

Res   PP
<break>   in pieces
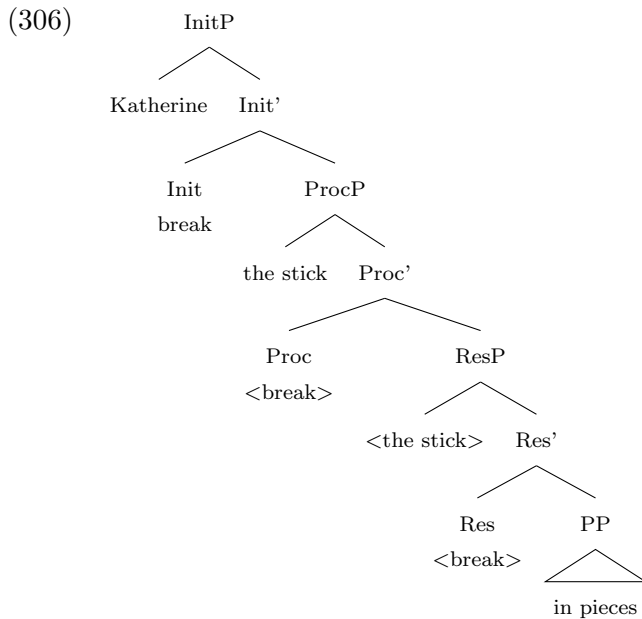
Chen (2016) – The result structure of the verbs and the Potential *de*(得)

Based on the theory of Ramchand (2008, pp. 63-110, Chap. 4), Chen (2016) revises the structure as in 307 to be in line with the surface word order in Mandarin. In addition, she proposes an IAspP that conveys the telicity in the verb structure, and a RealiseP that is for the aspect marker *le*. The verb in the VP keeps undergoing several head movements to higher positions and is incorporated with other heads to reach the *v*.

(307)

```
        vP(initP)
        /       \
  initiator      v'
              /      \
            v         IAspP
          Init       /      \
                  IAsp      RealiseP
                          /         \
                     Realise         ResP
                                  /        \
                            resultee        Res'
                                          /      \
                                       Res        VP(procP)
                                                  /        \
                                            undergoer        V
```
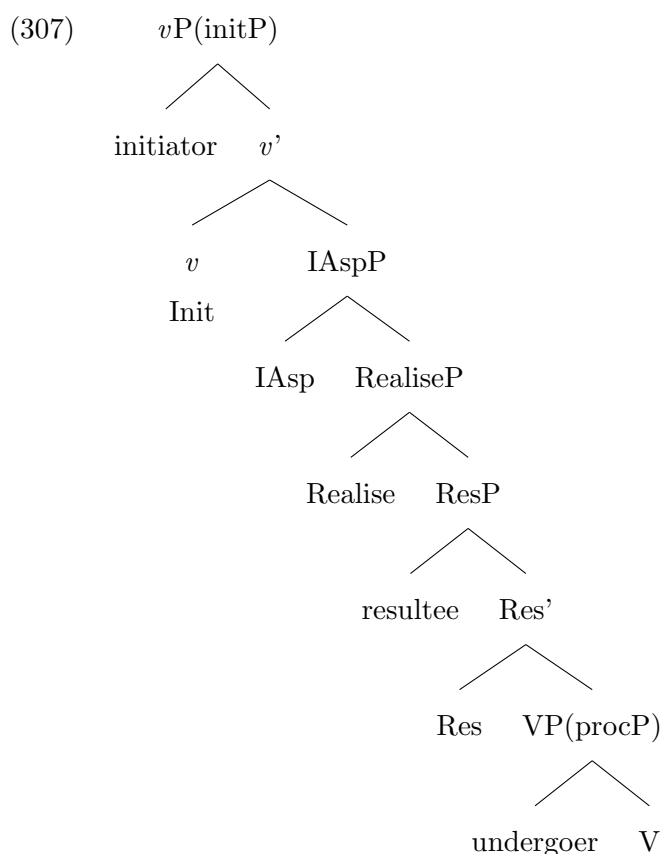
According to Chen (2016), the sentence in example 308 is derived as in 309. The result-expressing word *huai*(broken) is merged into the head of the ResP, and the action verb *yao*(bite) is the head of the VP (namely the ProcP). The verb *yao*(bite), which is the head of the VP, moves to the head of the ResP and combines with the head *huai*(broken) as a cluster to move together to the head of the RealiseP. The aspect *le* on the head of the RealiseP adjoins the cluster *yao huai*(bite broken) as a whole, which keeps moving higher

to the IAsp head, finally moving to the *v* head.

(308) ni   de gou yao huai   le   ditan.
       you of dog bit broken ASP carpet

  'Your dog bit the carpet and broke it.'

(309)
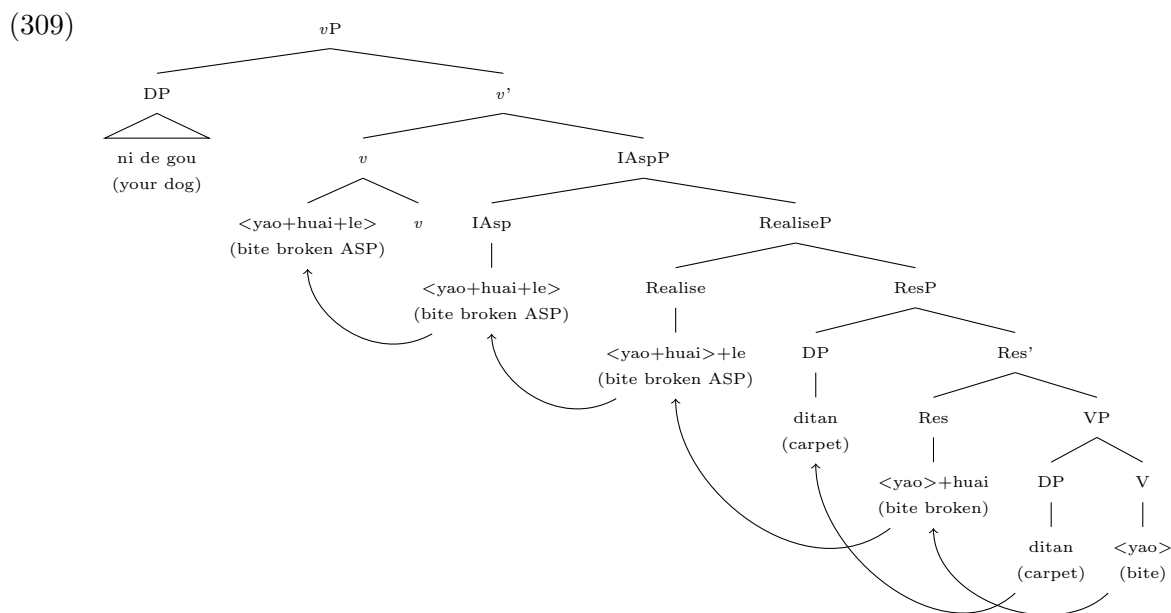
6.4.3   The syntactic derivation of answers to yes/no questions containing the ability *de*

I adopt Chen (2016)'s theory regarding the syntactic derivation of verbs in this thesis. Chen (2016) also discusses the *de/bu* in her research. In Chen (2016, pp. 248, 287-289, Chap. 4), *de/bu* are taken as potential morphemes. She also proposes that there is a functional projection PotentialP, the head of which is *de/bu*. The functional projection PotentialP is merged between the ResP and the VP (Chen, 2016, pp. 248, 287-289, Chap. 4). Then, according to Chen (2016, pp. 248, 287-289, Chap. 4), the derivation of the potential *de* in the verb construction in Mandarin would be as in 310.

(310)

```
        vP(initP)
        /      \
   initiator    v'
              /    \
             v     IAspP
            Init   /    \
                 IAsp   RealiseP
                        /      \
                   Realise     ResP
                              /     \
                         resultee   Res'
                                   /    \
                                 Res   PotentialP
                                       /        \
                                 Potential    VP(procP)
                                     |          /      \
                                   de/bu    undergoer   V
```
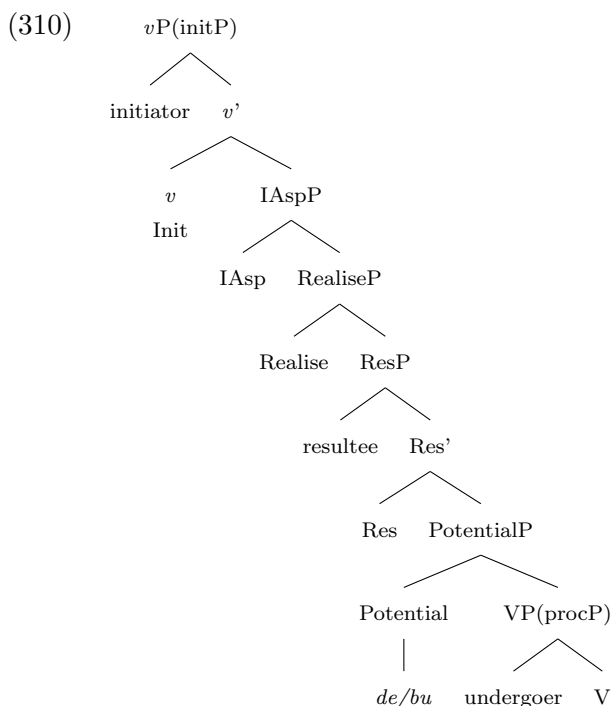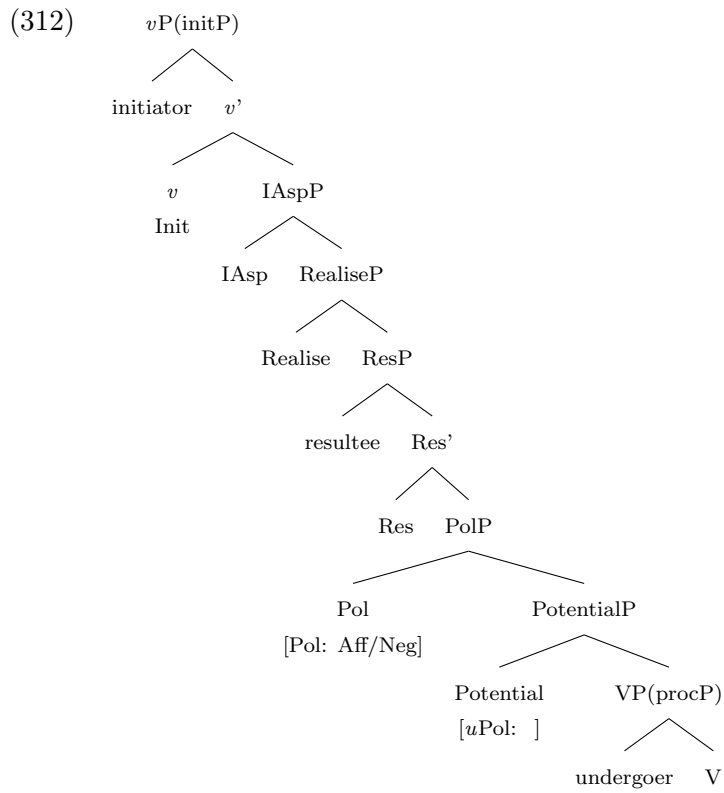
However, it is clearly displayed that the *de* in the potential position is for the affirmative expression, and the negation *bu* is for the negative expression of the potential meaning. They are the polarities in the sentences, such as in example 311. The shortest echo answer 311b echoes the '*ban de/bu dong*(carry DE/not move)' ('v + *de/bu* + v') as a whole. The focus of a yes/no question is the variable polarity, and in the yes/no question in 311, the variable polarity is combined with the potential, that is, the ability to carry the very heavy box.

(311) Q: ni   ban   de dong zheme chen-de xiangzi ma?
           you carry DE move very   heavy   box   Q
        'Are you able to carry this very heavy box?'

   a. A: wo ban   de/bu   dong zheme chen-de xiangzi.
          I   carry DE/not move very   heavy   box
        'Yes(/No), I am (not) able to carry this very heavy box.'

   b. A: ban   de dong./ ban   bu dong.
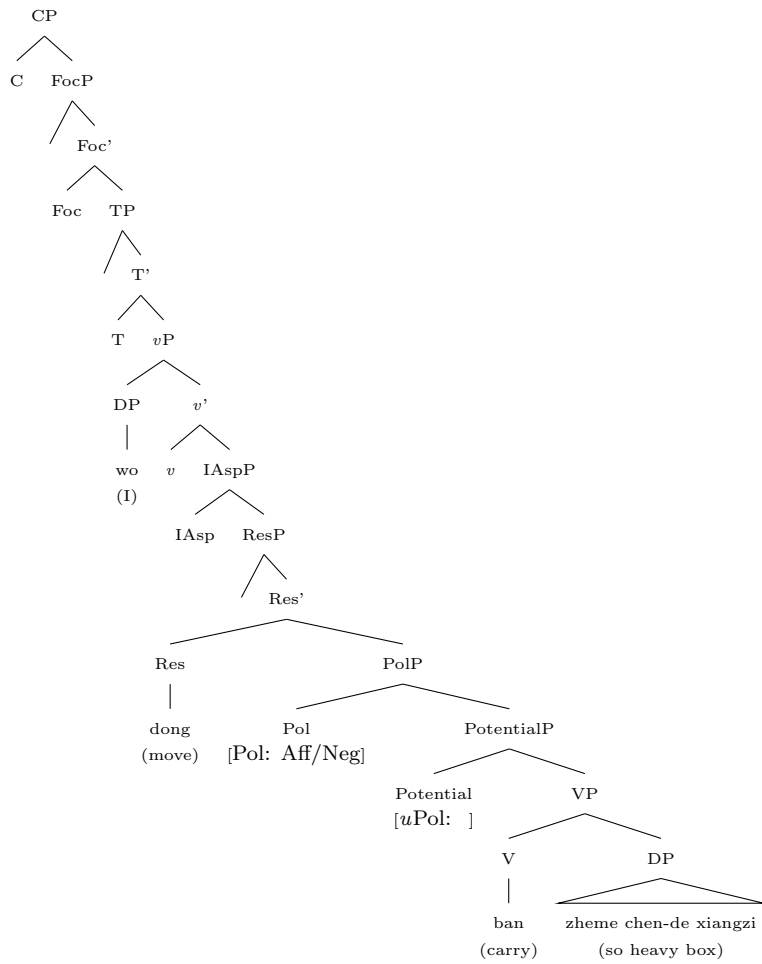   carry DE move/ carry not move
        'Yes./ No.'

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c. * A: dong./ bu dong.
        move/ not move
  'Yes./ No.'

d. * A: ban./ bu ban.
        carry/ not carry
  'Yes./ No.'

The affirmative spelt-out *de* and the negative spelt-out *bu* indicate that there is a PolP in the potential-expressing structure. Based on Chen (2016), I propose that there is a polarity projection in the domain higher than the PotentialP, such as the derivation in 312. Since it is expressing that whether the subject has the ability or the possibility, the potential should be in the domain of the polarity projection. In addition, I propose that the head of the PotentialP has an unvalued polarity feature [uPol:]. The PolP head has a valued polarity feature [Pol: Aff/Neg], which checks the unvalued polarity feature on the Potential head, and the [Pol: Aff/Neg] feature is weak. The potential head does not need to be moved to check the unvalued polarity feature. When the [uPol:] feature on the Potential head is valued as affirmative [uPol: Aff], the affirmative *de* is spelt out on the Potential head to convey the meaning of having ability or possibility. When the [uPol:] feature on the Potential head is valued as negative [uPol: Neg], the negation *bu*(not) is spelt out on the Potential head to convey the meaning of having no ability or possibility.

(312)

```
              vP(initP)
              /      \
       initiator      v'
                     /  \
                    v    IAspP
                   Init  /   \
                      IAsp    RealiseP
                             /      \
                        Realise      ResP
                                    /    \
                              resultee    Res'
                                         /   \
                                       Res    PolP
                                             /    \
                                           Pol     PotentialP
                                      [Pol: Aff/Neg]  /      \
                                               Potential     VP(procP)
                                               [uPol:  ]     /    \
                                                       undergoer   V
```

Regarding the full sentential answer 311a, the basic derivation is as in 313, which is followed by several steps to obtain the final derivation.
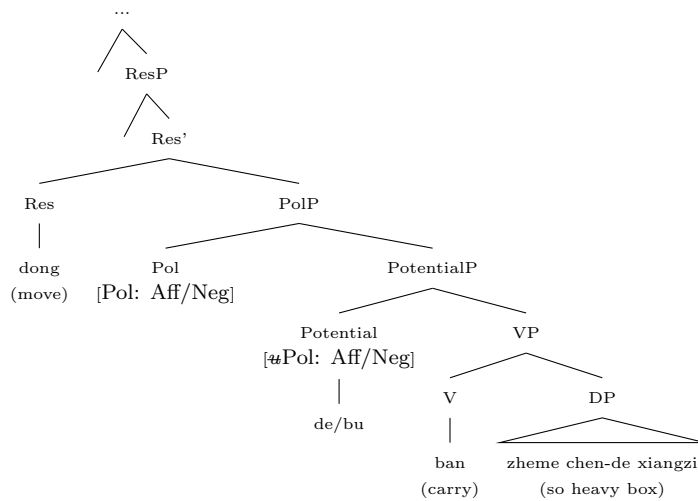
(313)

```
                    CP
                   /  \
                  C    FocP
                        \
                        Foc'
                       /   \
                     Foc    TP
                             \
                              T'
                             /  \
                            T    vP
                                /  \
                              DP    v'
                              |    /  \
                              wo  v    IAspP
                              (I)      /    \
                                     IAsp    ResP
                                              \
                                              Res'
                                             /    \
                                           Res     PolP
                                            |      /    \
                                          dong    Pol    PotentialP
                                         (move)  [Pol: Aff/Neg]  /    \
                                                          Potential    VP
                                                          [uPol:  ]   /  \
                                                                      V    DP
                                                                      |   /    \
                                                                    ban  zheme chen-de xiangzi
                                                                   (carry)  (so heavy box)
```

Step 1: Valuing the [uPol:] feature on the Potential head and spelt out, as in 314.

As proposed, there is an unvalued polarity feature on the head of the PotentialP that needs to be valued. The Pol head contains the [Aff] or [Neg] feature of the polarity, which can check the [uPol:] on Potential. The [uPol: Aff] is spelt out as *de*, and the [uPol: Neg] is spelt out as *bu*(not) on the head of the PotentialP.

(314)

ResP

Res'

Res
|
dong
(move)

PolP

Pol
[Pol: Aff/Neg]

PotentialP

Potential
[*u*Pol: Aff/Neg]
|
de/bu

VP

V
|
ban
(carry)

DP

zheme chen-de xiangzi
(so heavy box)

Step 2: The syntactic derivation undergoes several movements like the derivation in 315.

In the vP domain, the activity verb *ban*(carry) undergoes head movement to the Potential head and is combined with *de/bu* to move higher to the head of the ResP. The result-expressing verb *dong*(move) on the Res head is adjoined to the cluster '*ban de*' as '*ban de dong*', which moves to the IAspP head and further moves to the head of the vP. The DP *wo*, which is merged as specifier of the vP, moves to the specifier of the TP to satisfy the EPP feature. The DP *zheme chen-de xiangzi*(very heavy box), which is an argument of the action verb *ban*(carry), is merged into the VP as the role of the undergoer. The DP *zheme chen-de xiangzi*(very heavy box) serves also the role of the resultee as an argument of the result-expressing verb *dong*. In Ramchand (2008, p. 71, Chap. 4), it is acceptable for a DP to takes more than one roles. Therefore, the DP *zheme chen-de xiangzi*(very heavy box) moves to the specifier of the ResP to take the resultee role.

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(315)
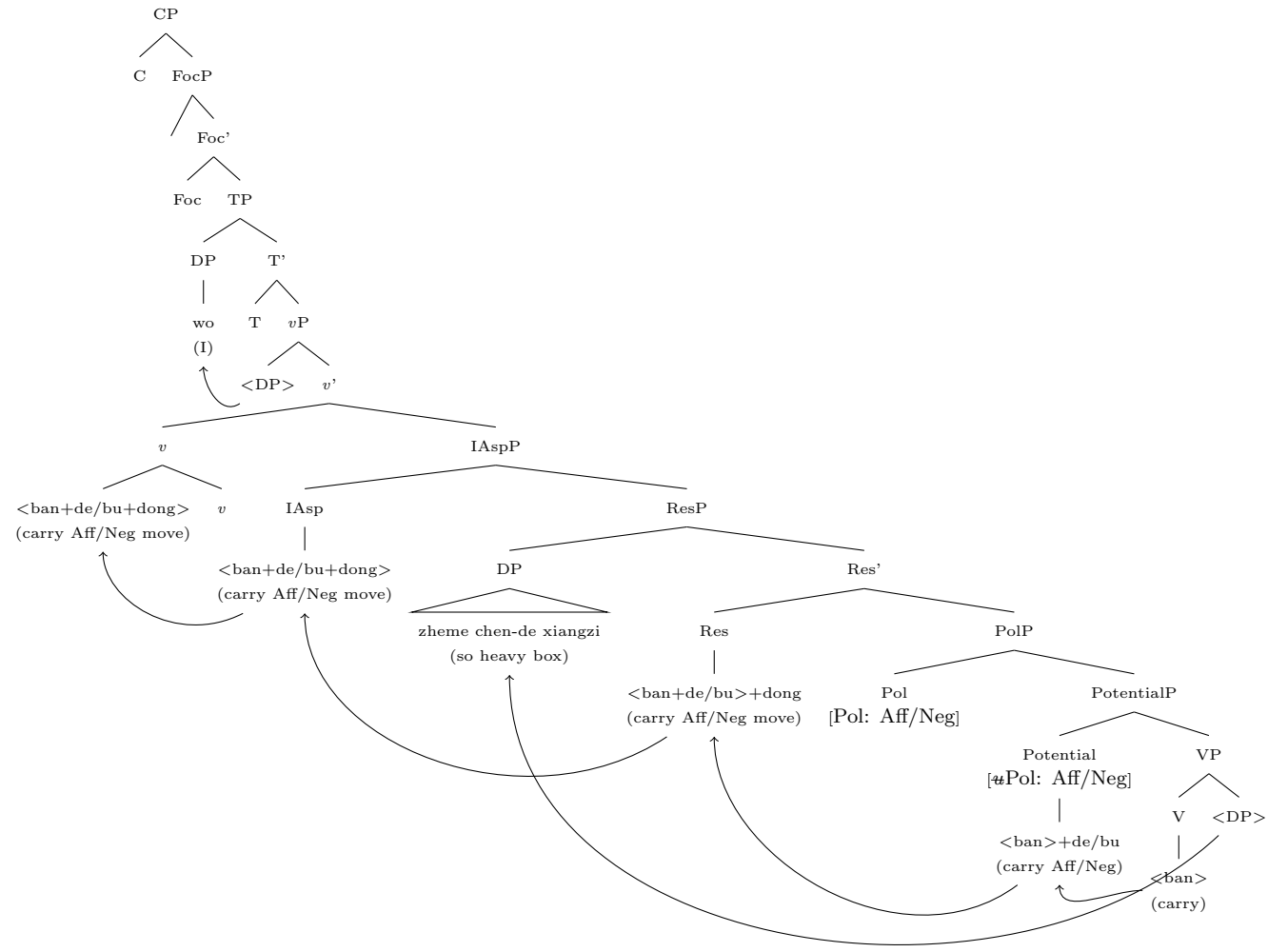
Following the two steps, the derivation in 315 is the derivation for the full sentential answer 311a. Based on the full sentential answer, echo answer 311b can be further derived, as in the following steps.

Step 3: Moving the verb cluster that contains the valued polarity feature to the specifier of the FocP, as in 316.

In the echo answer, the [Focus] feature on the FocP head is strong, and it attracts the PolP in the sentence to the specifier of the FocP to check the uninterpretable focus feature [uFocus:] on the polarity. However, in the potential structure, the polarity feature is spelt out on the potential head as the affirmative *de* or the negative *bu*, and the polarity potential head is combined with the verb cluster. Thus, the strong focus feature attracts the verb cluster that contains the polarity as a whole to the specifier of the FocP.

(316)
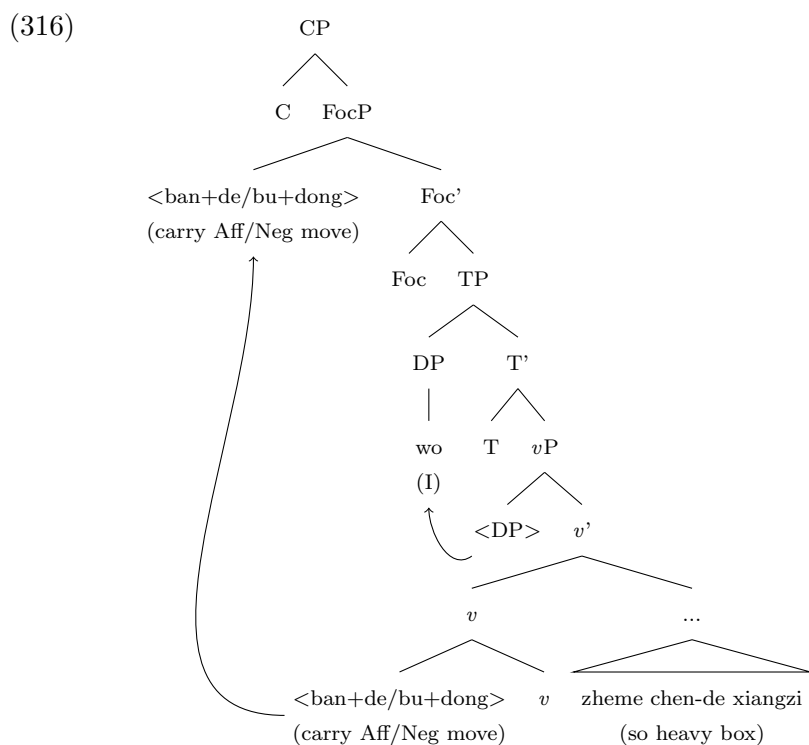
Step 4: Deleting the TP. After moving the focused polarity to the specifier of the FocP, as in the derivation in 316, the TP is deleted to form the echo answer.

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The potential *de/bu* structure usually used in the verb cluster contains the result expression. In example 317, the potential *de* is to the right of the action verb *da*(fight) and is followed by a verb *ying*(win) expressing the result. If there is no result-expressing verb *ying*(win), such as in example 317, the sentence is ungrammatical in Mandarin.

(317) tamen da   de ying zhe chang zhanzheng ma?
       they   fight DE win this CL   war   Q
         'Are they able to win this war?'

(318) * tamen da   de zhe chang zhanzheng ma?
         they   fight DE this CL   war   Q
         'Are they able to win this war?'

However, some action words can be in the potential structure as well. In example 319, the main verb *du*(read) expresses the action 'read four books' in the sentence. The main verb *du*(read) can also be in the potential structure to convey an ability meaning, such as in example 320. In the surface structure of 320, the action verb *du*(read) is followed by the potential affirmative spelt-out *de* which is followed by the adverb *liao*, to form the 'X + *de/bu* + X' structure. The potential structure '*du de liao*(read DE PTCL)' conveys the potential meaning of 'has the ability to read 4 books'.

(319) ta mei   ge yue   du 4   ben shu.
       he every CL month read four CL book
         'He reads four books every month.'

(320) ta mei   ge yue   du de liao   4   ben shu.
       he every CL month read DE PTCL four CL book
         'He is able to read four books every month.'

In example 321, the yes/no question does not contain a verb. The predicate is an adjective *nuanhe*(warm) which can be followed by '*de liao*' to form the potential structure, conveying

the meaning of the possibility.

(321)   zhoumo nuanhe de liao   ma?
        weekend warm   DE PTCL Q
           'Is it possible that it will be warm this weekend?'

Chen (2016, p. 252, Chap. 4) attributes the existence of *liao* to phonological reasons. Since the potential *de/bu* cannot be directly followed by arguments, some dummy words, such as the *liao*, are inserted into the head of the ResP as a last resort to form the potential structure 'X + *de/bu* + X' in the surface structure. I agree with Chen (2016), but there is one point that needs to be supplemented for the usages of *liao* in the potential structure 'X + *de/bu* + *liao*'.

In examples 322 and 323, both the potential structures are in '*chi de liao*'(eat DE PTCL), but they have different meanings.

(322)   ni   chi de liao   zheme bing-de dangao ma?
        you eat DE PTCL such   iced   cake   Q
           'Are you able to eat such an iced cake?'

(323)   ni   chi de liao   zheme da-de dangao ma?
        you eat DE PTCL such   big   cake   Q
           'Are you able to finish such a big cake?'

In example 322, the verb cluster with the affirmative potential only conveys the meaning of 'is able to eat'. The action *chi*(eat) retains the activity meaning and the *de* provides the affirmative ability meaning to the potential structure. *liao* is the dummy word, which does not contribute to the meaning of the potential structure. However, in example 323, the potential structure '*chi de liao*' conveys the meaning of 'is able to eat and finish the cake', which contains a finished meaning as the resultative expression. Also, *liao* in Mandarin can be a verb expressing the meaning of finish and end.

Therefore, there are two *liao* in the potential structure. One *liao* is a dummy word which is to form the potential structure 'X + *de/bu* + *liao*' but does not affect the meaning, such as the *liao* in 322. For some phonological reasons, the dummy *liao* is inserted into the head of the ResP. The other *liao* is a verb that expresses the meaning of finishing and ending, which is merged into the head of the ResP. This verb *liao* contributes the resultative expression to the verb cluster '*chi de liao*' which conveys the meaning 'be able to eat and finish (the cake)'.

The derivation for the potential structure '*chi+de+liao*' is as in example 324, which works for both usages of *liao*.

(324)
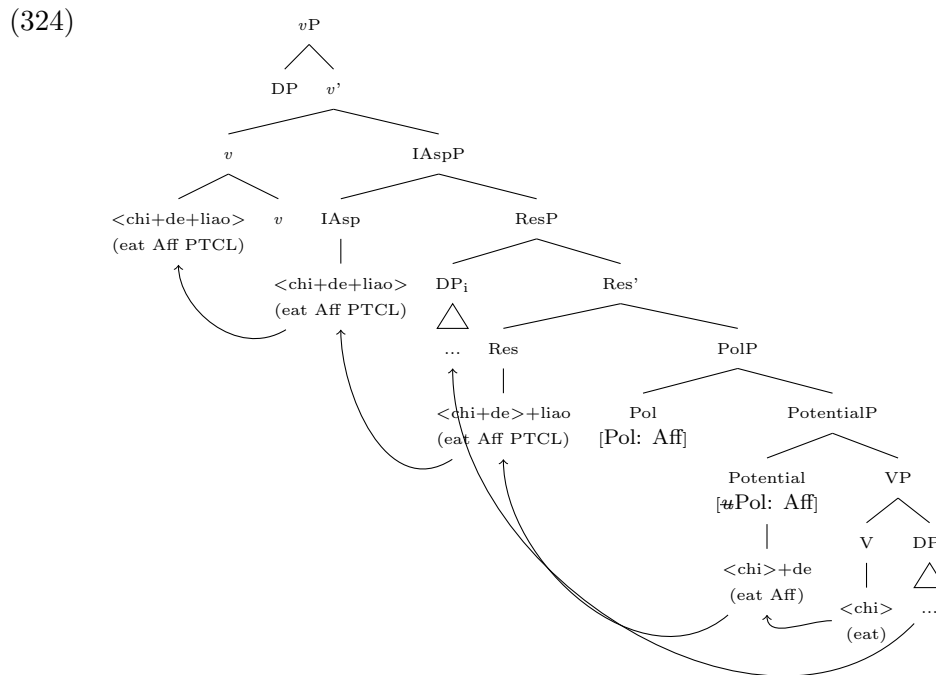
6.5 Summary

This chapter focused on the *de*(得) structure, which is a common phenomenon in Mandarin. The usages and the structures of the *de*(得) in a sentence affect the echo answers and their derivation in yes/no questions and answers.

There are two *de*(得), based on the meanings that they denote: one *de* is for expressing degree, and the other *de* is for expressing potential (ability or possibility). The surface structures of the yes/no questions in examples 325 and 326 are exactly the same. In oral language, there are the phonological differences, such as the stress and intonation, between these two yes/no questions. However, in written form, people only distinguish these two yes/no questions with the same surface structure by their answers.

(325)   Q: na   ge zang panzi, ta xi   de ganjing ma?
            that CL dirty dish   she wash DE clean   Q
        'Is that dirty dish clean because of her washing?'

        a. A: na   ge zang panzi, ta xi   de (bu) ganjing.
               that CL dirty dish   she wash DE (not) clean
            'That dirty dish is (not) clean because of her washing.'

        b. A: ganjing./ bu ganjing.
               clean/   not clean
            'Yes./ No.'

(326)   Q: na   ge zang panzi, ta xi   de ganjing ma?
            that CL dirty dish   she wash DE clean   Q
        'Is she able to wash that dirty dish clean?'

        a. A: na   ge zang panzi, ta xi   de/bu   ganjing.
               that CL dirty dish   she wash Aff/Neg clean
            'She is (not) able to wash that dirty dish clean.'

        b. A: xi   de/bu   ganjing.
               wash Aff/Neg clean
            'Yes./ No.'

One of the main ideas of this thesis is that the shortest answer to the yes/no question is the focus of the yes/no question. Echo answer 325b in example 325 only echoes the adjective

ganjing(clean) with the polarity, which describes the degree of the action from some perspectives. The derivation of echo answer 325b to the yes/no question containing the degree *de* structure is as in derivation 328. The degree-expressing *de* has its own projection DeP which is a complement of the verb or the adjective predicate in the matrix clause. A CP is merged with the DeP, as the complement of De. That is, the DeP intervenes between the verb or the adjective of the matrix clause and the degree-denoting clause. The CP following the *de* describes 'to what extent the verb or the adjective in the matrix clause works'. Based on the proposition of this thesis, there is a Focus phrase that is in the highest position in the domain of the CP in a yes/no question and its answer. In the echo answer, the Focus head holds a strong [Focus] feature that attracts the variable polarity PolP to the specifier of the FocP. Regarding the degree-expressing *de* yes/no questions, the Focus is on the degree-expressing subclause. However, since the degree-expressing subclause is a CP, the PolP inside cannot move out the CP. Therefore, the entire degree-expressing CP moves to the specifier of the FocP in the matrix clause. The TP in the matrix clause is then deleted. In the degree-expressing CP, there is a FocP in the highest position of the CP as well. The strong [Focus] feature attracts the variable polarity to the specifier of the FocP of the degree-expressing CP. Similarly, the TP is deleted. Based on the sentence structure, a few more ellipses are adopted to derive the echo answer.

The yes/no question in example 326 contains the potential expression. The affirmative polarity *de* or the negative polarity *bu* is spelt out at the head of the PotentialP which is in the domain between the ResP and the VP. The adjective *ganjing*(clean) indicates the result of the action *xi*(wash), which is merged into the head of the ResP. The action-expressing verb *xi*(clean) on the VP head undergoes several steps of head movement in which the verb *xi*(wash) is combined with the potential head *de/bu* and the result head *ganjing*(clean) as the cluster. The cluster '*xi de/bu ganjing*(wash Aff/Neg clean)' finally moves to the head of the *v*P. In the echo answer, the strong [Focus] feature in the highest position in the CP attracts the cluster *xi de/bu ganjing*(wash Aff/Neg clean) to the specifier of the FocP, since the cluster contains the polarity which has the unvalued Focus feature needing to be checked. Once the TP is deleted, echo answer 326b is derived.

In the degree *de* structure, the complement of the VP must be the DeP which is followed
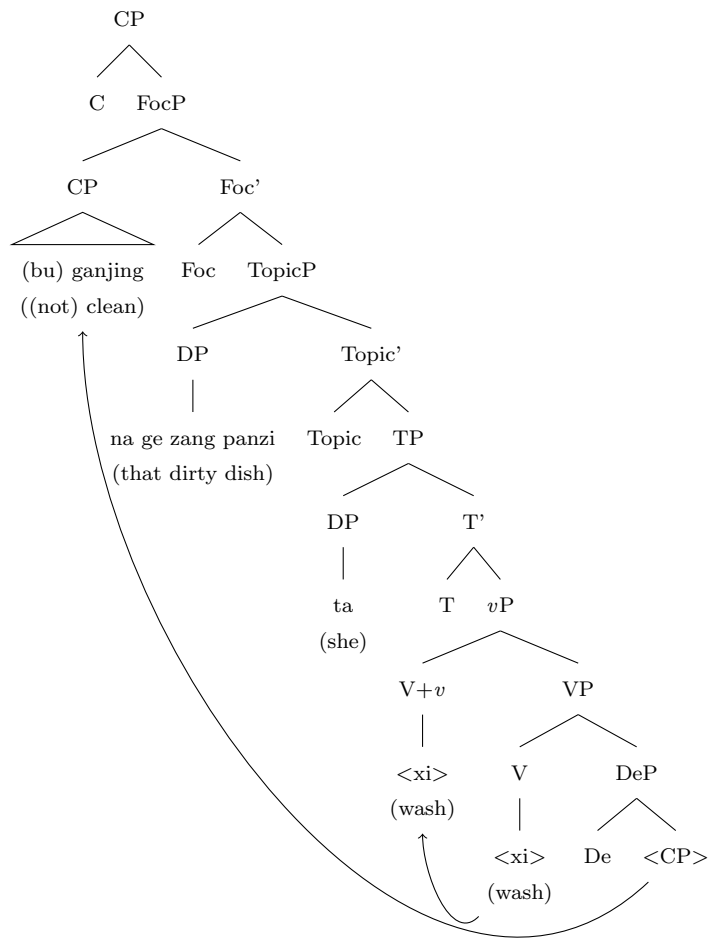
by the degree-expressing CP. Therefore, the argument *na ge zang panzi*(that dirty dish) of the verb *xi*(wash) cannot merge into the complement of the VP. Thus, it is merged with the TopicP in 325. The yes/no question containing the *de* structure in example 327, can only convey the potential meaning. The DP *na ge zang panzi*(that dirty dish) argument is merged with the VP. The DP could be moved to the specifier of the TopicP to form the surface structure in example 326. The focuses and the echo answers are the same in examples 326 and 327. The derivation of the echo answer to the potential *de* yes/no question is as in 329.

(327)   Q: ta   xi   de ganjing na   ge zang panzi ma?
            she wash DE clean   that CL dirty dish   Q
        'Is she able to wash that dirty dish clean?'
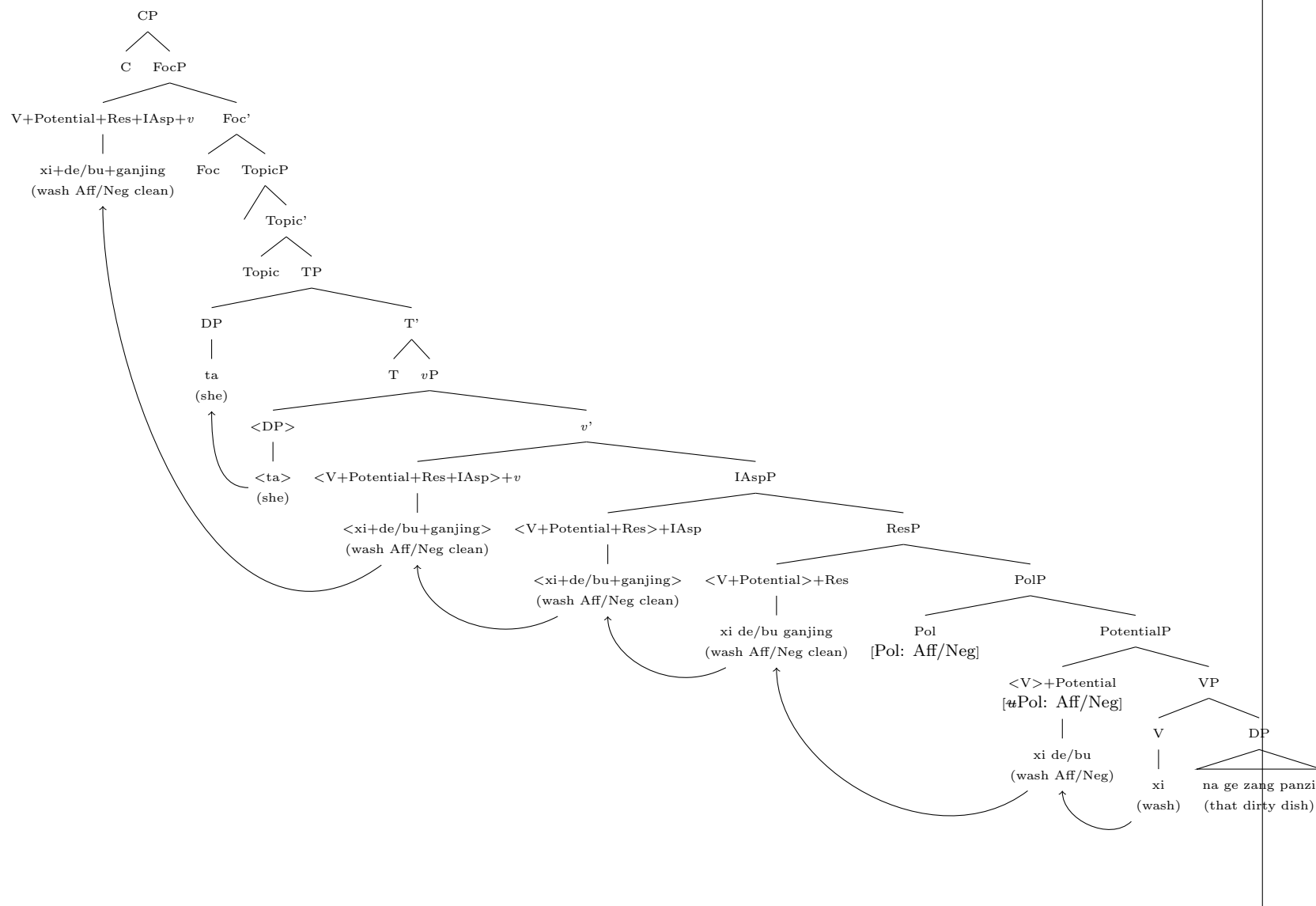

    a. A: ta   xi   de/bu   ganjing na   ge zang panzi.
           she wash Aff/Neg clean   that CL dirty dish
        'She is (not) able to wash that dirty dish clean.'

    b. A: xi   de/bu   ganjing.
           wash Aff/Neg clean
        'Yes./ No.'

(328)

CP
├─ C
└─ FocP
   ├─ CP
   │ └─ (bu) ganjing
   │   ((not) clean)
   └─ Foc'
      ├─ Foc
      └─ TopicP
         ├─ DP
         │ └─ na ge zang panzi
         │   (that dirty dish)
         └─ Topic'
            ├─ Topic
            └─ TP
               ├─ DP
               │ └─ ta
               │   (she)
               └─ T'
                  ├─ T
                  └─ vP
                     ├─ V+v
                     │ └─ <xi>
                     │   (wash)
                     └─ VP
                        ├─ V
                        │ └─ <xi>
                        │   (wash)
                        └─ DeP
                           ├─ De
                           └─ <CP>

(329)

CP
- C
- FocP
  - V+Potential+Res+IAsp+*v*
    - xi+de/bu+ganjing
    - (wash Aff/Neg clean)
  - Foc'
    - Foc
    - TopicP
      - Topic'
        - Topic
        - TP
          - DP
            - ta
            - (she)
          - T'
            - T
            - *v*P
              - \<DP\>
                - \<ta\>
                - (she)
              - *v*'
                - \<V+Potential+Res+IAsp\>+*v*
                  - \<xi+de/bu+ganjing\>
                  - (wash Aff/Neg clean)
                - IAspP
                  - \<V+Potential+Res\>+IAsp
                    - \<xi+de/bu+ganjing\>
                    - (wash Aff/Neg clean)
                  - ResP
                    - \<V+Potential\>+Res
                      - xi de/bu ganjing
                      - (wash Aff/Neg clean)
                    - PolP
                      - Pol
                        [Pol: Aff/Neg]
                      - PotentialP
                        - \<V\>+Potential
                          [*u*Pol: Aff/Neg]
                          - xi de/bu
                          - (wash Aff/Neg)
                        - VP
                          - V
                            - xi
                            - (wash)
                          - DP
                            - na ge zang panzi
                            - (that dirty dish)

Chapter 7

The Syntax of the Particle Answers

7.1 Literature Review of Holmberg's Theory on Particle Answers

7.1.1 Particle answers in English

As with the echo answers, particle answers are derived from the full sentential answers after ellipses also. Holmberg (2012, 2016) discusses the syntactic derivation of particle answers to yes/no questions in English.

For example 330 and its derivation 331, in the yes/no question, the [Q] feature at the C marks that this is a question and that there is a variable element in the sentence. For a yes/no question, the variable element is restricted to the polarity. In the answer, a valued polarity feature is merged on the specifier of the FocP, and the affirmative polarity feature [+Pol] is spelt out as *yes*, and the negative feature [-Pol] is spelt out as *no* in English. The valued polarity feature checks the unvalued polarity feature on the Pol head. Since the PolP in the full sentential answer is identical to the PolP in the yes/no question, the PolP undergoes ellipsis and the particle remains as the particle answer.
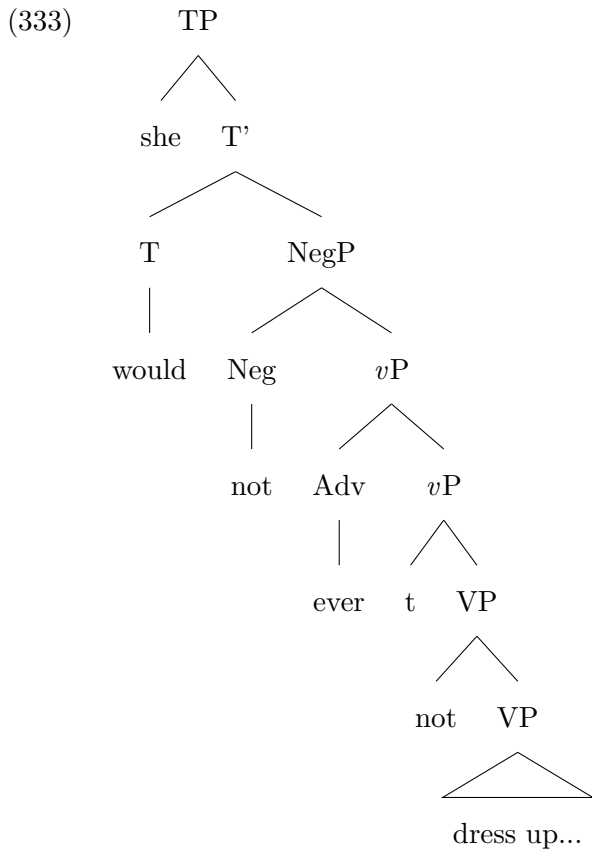
(330)   Q: Do you like drawing?

      a.   A1: Yes, ~~I like drawing~~.

b. A2: No, ~~I don't like drawing~~.

(331)
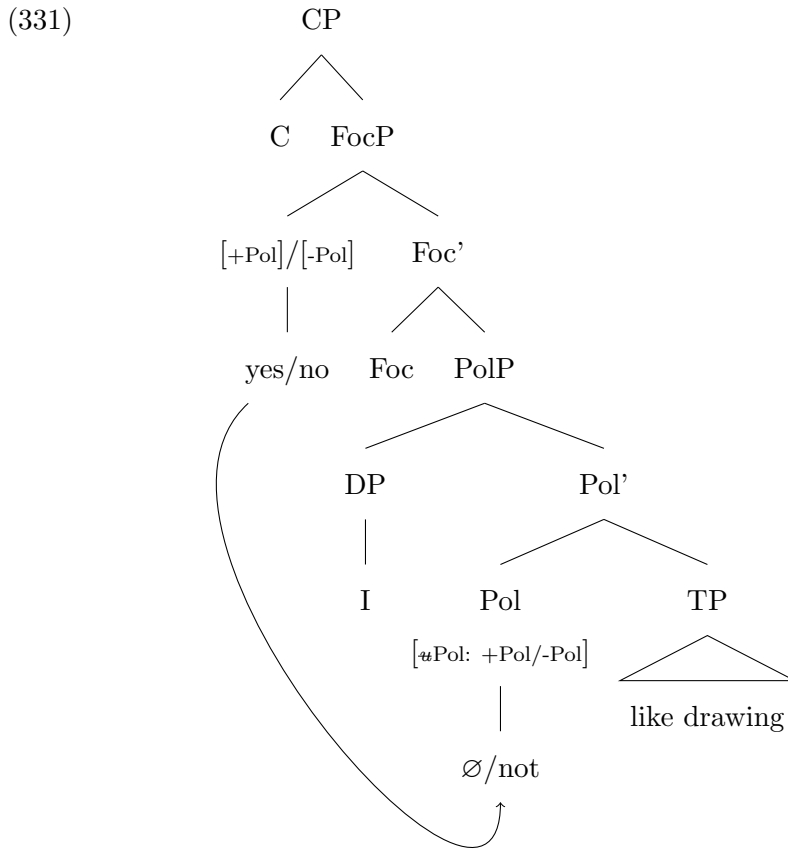
In English, a sentence can have many positions for the negation, such as in example 332. As displayed in derivation 333, which is quoted from Holmberg (2016, p. 156, Chap. 4), the *not* in the higher domain of the VP takes the sentential scope and is treated as the middle negation, while the *not* adjoined to the VP, that is, to the right of the word *ever*, is treated as the low negation. The different domains of negations differentiate the answers to yes/no questions.

(332)   She would not ever not dress up for an occasion like that.

(333)

```
                    TP
                   /\
                she   T'
                     /\
                   T    NegP
                   |     /\
                would  Neg    vP
                       |      /\
                      not   Adv    vP
                            |      /\
                           ever   t   VP
                                     /\
                                   not   VP
                                        /__\
                                     dress up...
```

The particle answers in English employ the polarity-based answer system, in which the polarity of the particle corresponds with the polarity of the following PolP in the full sentential answer. However, in example 334, quoted from Holmberg (2012) and Holmberg (2016, pp. 152-165, Chap. 4), answers 334b and 334c follow the polarity-based answer system, but answers 334a and 334d employ the truth-based answer system.

(334)   Q: Is John not coming?

    a. A1: Yes. ['He is not coming.']

    b. A2: No. ['He is not coming.']
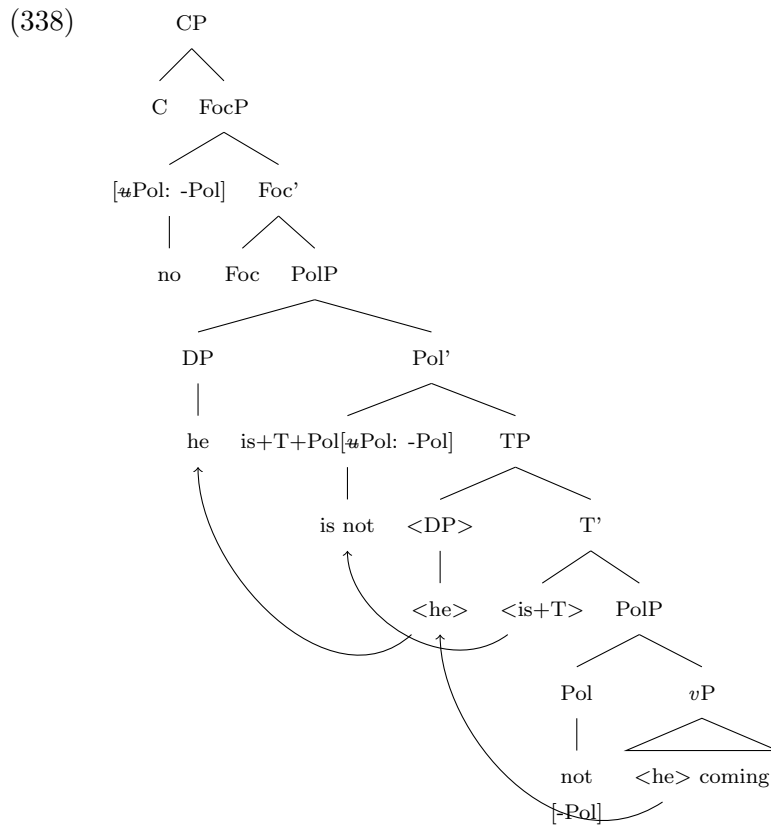
    c. A3: Yes, he is. ['He is coming.']

    d. A4: No, he is. ['He is coming.']

Regarding answer 334a, the full answer expression would be like answer 335, which employs the truth-based answer system. According to Holmberg (2012) and Holmberg (2016, pp. 152-162, Chap. 4), the *not* is a low negation, since the low negation *not* is adjoined to the VP which is too far away to value the unvalued polarity feature on the Pol head. In the answer, a focused affirmative particle *yes* merges with the specifier of the FocP, which assigns the affirmative [+Pol] feature to the head of the PolP and checks the [uPol] feature as [+Pol]. Since the PolP is identical to the PolP in the yes/no question, the PolP is deleted. Only the affirmative particle *yes* remains, as in answer 334a.

(335)   A1: Yes, he is not coming.

(336)
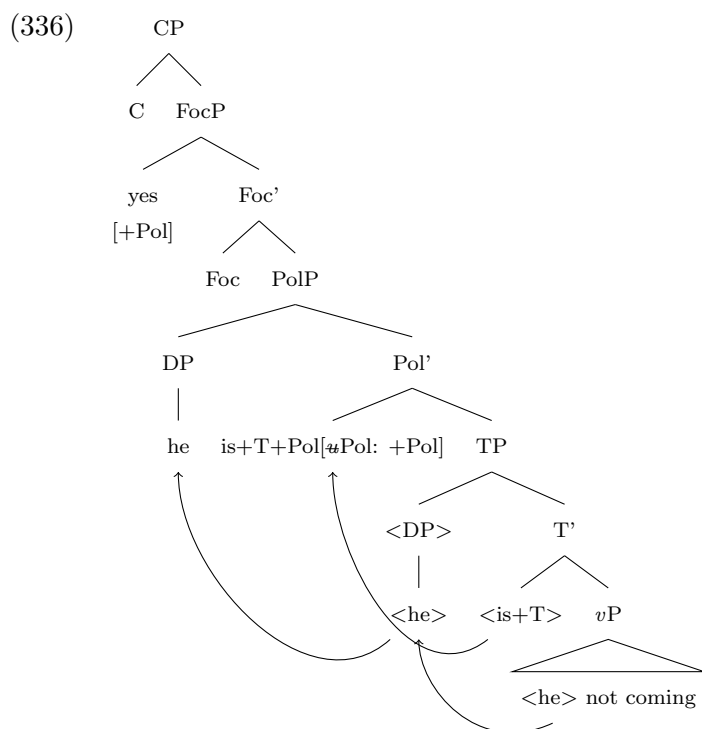
Regarding answer 334b, the full answer expression would be like answer 337, which employs the polarity-based answer system. Holmberg (2016, pp. 162-163, Chap. 4) proposes that there are two types of particle for polarity-based answers. One type of particle answer is with the interpretable polarity feature, which is used when the yes/no question is neutral. The other type of particle answer is with the uninterpretable feature, and it is used when

the yes/no question is negative. In answer 334b and its derivation 338, it is a particle with an unvalued polarity feature that merges with the specifier of the FocP, and the head of the PolP holds an unvalued polarity feature also. The interpretable negation *not* is a middle negation that is merged in the TP domain outside the *v*P. The middle negation *not* with an interpretable [-Pol] feature values the uninterpretable polarity feature on the head of the high polarity phrase as the negative polarity [*u*Pol: -Pol]. The uninterpretable polarity feature in the specifier of the FocP is in agreement with the head of the high PolP. It agrees with the negative polarity feature and it spells out the negative particle *no*. Then, since the PolP of the full sentential answer is the same as the PolP in the yes/no question, the PolP in the answer can be deleted. The negative particle *no* remains, as in answer 334b.

(337)   A2: No, he is not coming.

(338)

Regarding answer 334c, the full answer expression would be like example 339, which em-

ploys the polarity-based answer system. An affirmative focused particle *yes* is merged with the specifier of the FocP in derivation 340. It checks the unvalued polarity feature on the head of the high polarity phrase. Since the VP is identical with that in the question, the VP can be omitted, and 'yes, he is' remains, as in answer 334c.

(339)   A3: Yes, he is coming.

(340)
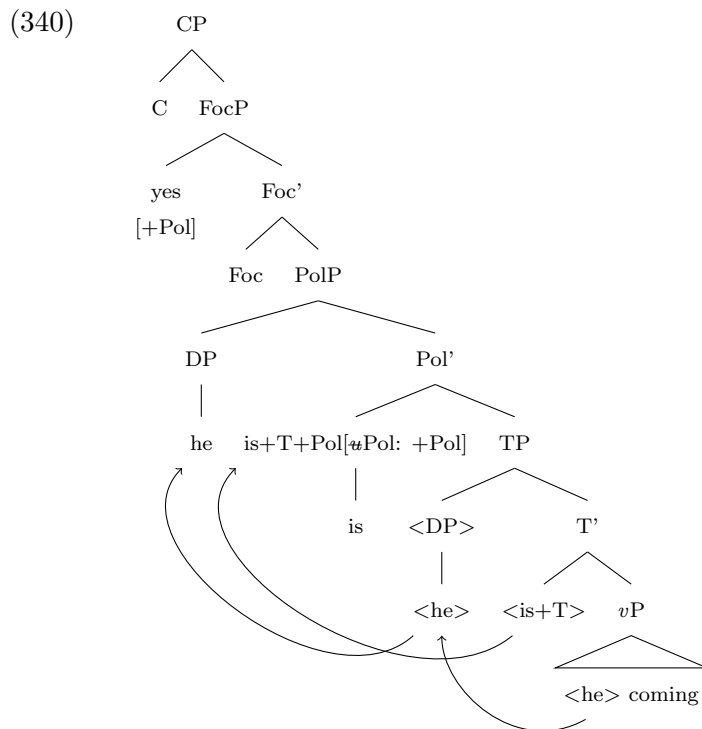
Regarding answer 334d, which employs the truth-based answer system, the full sentential expression is like example 341. Holmberg (2016, pp. 163-165, Chap. 4) argues that it is composed of two full sentential expressions, that is, two CPs. The first CP undergoes the ellipses and only the negative particle *no* remains. The second CP undergoes the ellipses also, leaving 'he is', which combines with the negative particle *no* remaining in the first CP to be the answer 334d.

(341)   No, he is coming.

The full sentential expression of the first CP is like answer 342 and its derivation 343. The negation *not* is a low negation which is inside the domain of the *v*P. A focused negation particle *no* is merged with the specifier of the FocP. The interpretable negative feature [-Pol] values the unvalued polarity feature on the head of the high PolP as [*u*Pol: -Pol]. The PolP is deleted as the result of being identical with the PolP in the corresponding yes/no question. Since two negatives resolve to a positive, the negative features in the deleted PolP reveal the affirmative meaning 'he is coming'. Therefore, the negative particle *no* disconfirms the proposition in the question, conveying the meaning that, 'your proposition is wrong'.
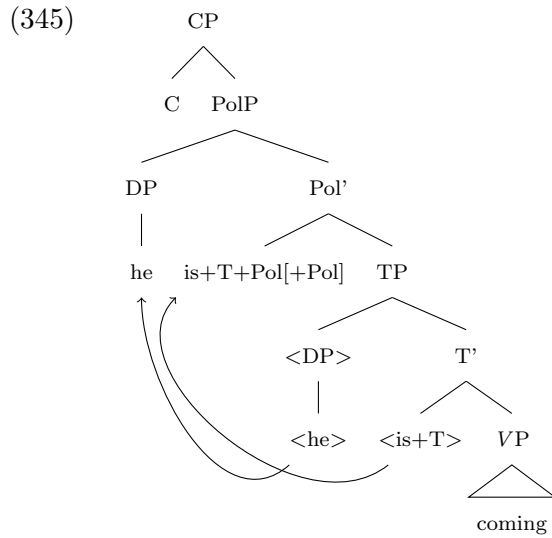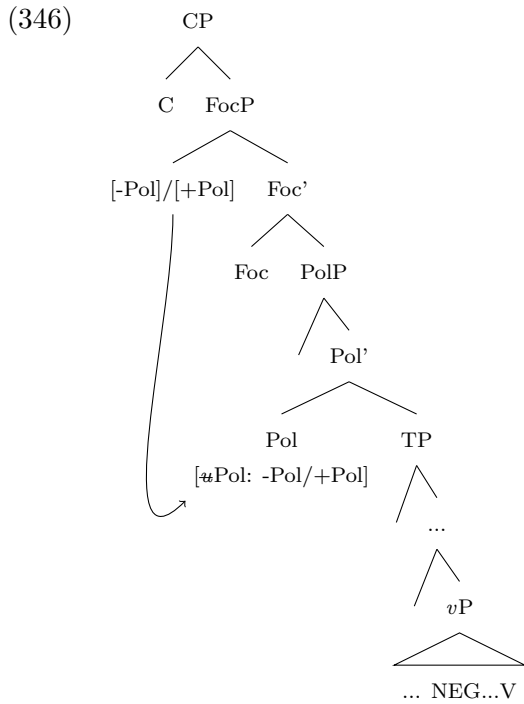
(342)   No, he is not not coming.

(343)
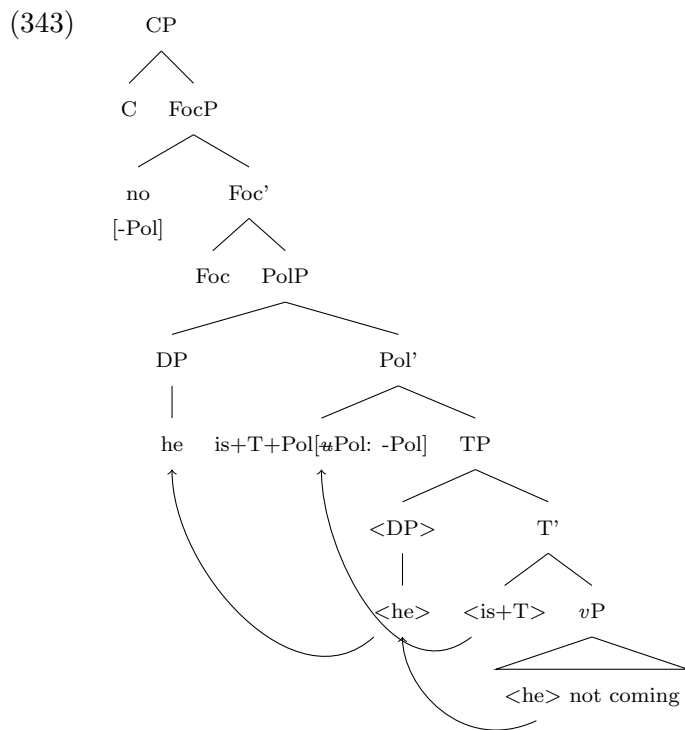
The full sentential expression of the second CP is like example 344, which is derived in 345. The VP is the same as the VP in the yes/no question. Therefore, the VP containing the word '*coming*' is omitted, and 'he is' remains as the second part in answer 334d. It further provides the information that 'he is coming', which confirms the proposition in the

yes/no question.

(344)   He is coming.

(345)

```
                    CP
                   /  \
                  C    PolP
                      /    \
                   DP        Pol'
                   |        /    \
                  he  is+T+Pol[+Pol]  TP
                                    /    \
                                <DP>      T'
                                 |       /  \
                               <he>  <is+T>  VP
                                             /\
                                          coming
```

Based on the above examples, the particle answers that employ the truth-based answer system to the negative yes/no questions in English are essentially derived as in 346, in which, the negation in the yes/no question is a low negation in the domain of the vP, which is the same in the full answer expression. An interpretable focused polarity feature is merged with the specifier of the FocP, in which the affirmative feature is spelt out as *yes* and the negative feature is spelt out as *no* in English. The interpretable polarity feature values the [uPol:] feature on the head of the high PolP above the TP domain. The polarities of the high PolP and the low PolP are in conjunction to form the interpretation of the 'affirmation or negation'.

(346)

```
                    CP
                   /  \
                  C    FocP
          [-Pol]/[+Pol]  / \
                  |    Foc'
                  |    /  \
                  |  Foc   PolP
                  |       /  \
                  |      /   Pol'
                  |     /   /  \
                  |   Pol    TP
                  |  [uPol: -Pol/+Pol]  /\
                  |              ...
                  |              /\
                  |             /  vP
                  |            / /  \
                  |       ... NEG...V
```

7.1.2 Particle answers in Mandarin

As described previously, Mandarin also allows multiple positions for polarities in a sentence. The yes/no question in example 347, which is quoted from Holmberg (2016, p. 193, Chap. 4), contains a middle negation *bu*, which is to the left of the modal word *keyi*(can). The modal is in the domain of the TP outside the *v*P. Therefore, the negation should be a polarity head of the middle PolP with a negative feature [Neg].

(347) Q: Lao Cheng bu keyi qu ma?
           Lao Cheng not can go Q
        'Is LaoCheng not allowed to go?'

    a. A: shi ((ta) bu keyi qu).
            yes   he not can go
         'Yes (he can't go).'

    b. A: bu, ta bu keyi qu.
            no he not can go

'No, he can't go.'

    c. A: bu, ta keyi qu.
          no he can go
      'No, he can go.'
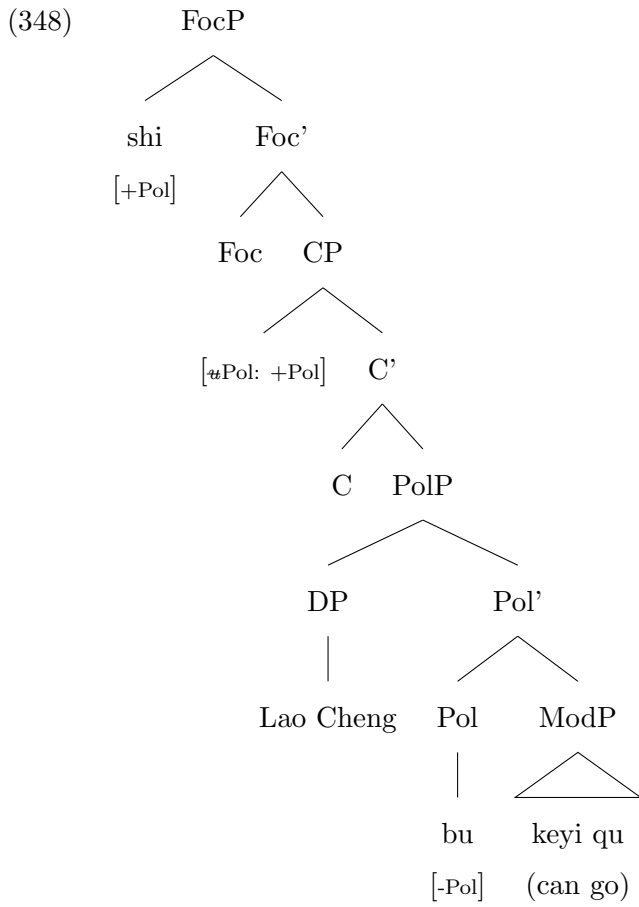
    d. A: bu keyi (qu).
          not can   go
      'No.'

    e. A: keyi (qu).
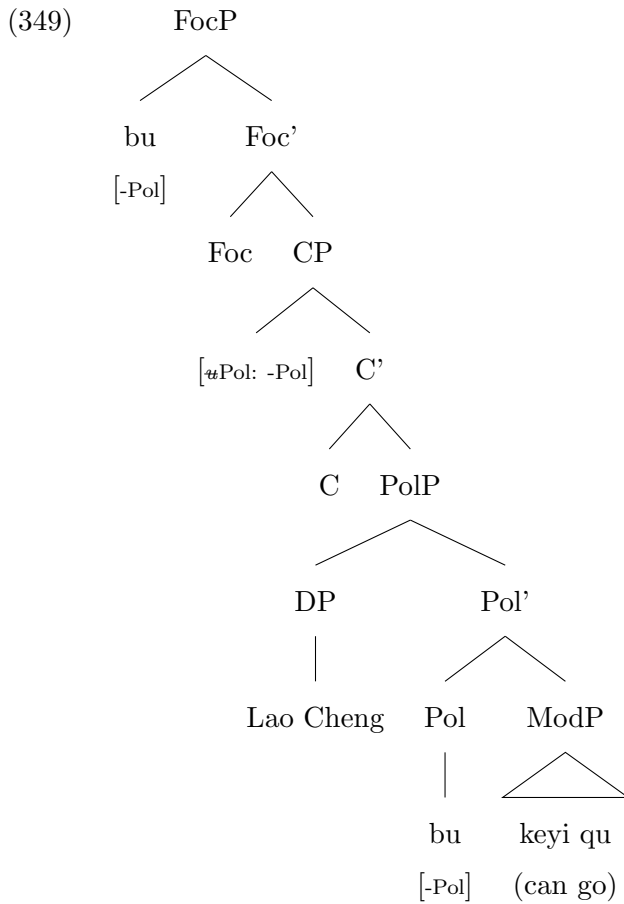   can   go
      'Yes, he can.'

Answers 347d and 347e are the echo answers, and answers 347a to 347c are particle answers. Based on the polarity of the particle and the polarity of the following expression, particle answers 347a and 347c are in the truth-based answer system, while answer 347b employs the polarity-based answer system.

Particle answers 347a and 347c employ the truth-based answer system. According to Holmberg (2016, pp. 191-197, Chap. 4), in the full sentential expression of the particle answers, the CP in the yes/no question is taken as the base to be further merged with the FocP. A particle with an interpretable and focused polarity feature merges with the specifier of the FocP. The interpretable polarity feature assigns the [+Pol] or [-Pol] value to the uninterpretable polarity feature on the specifier of the CP.
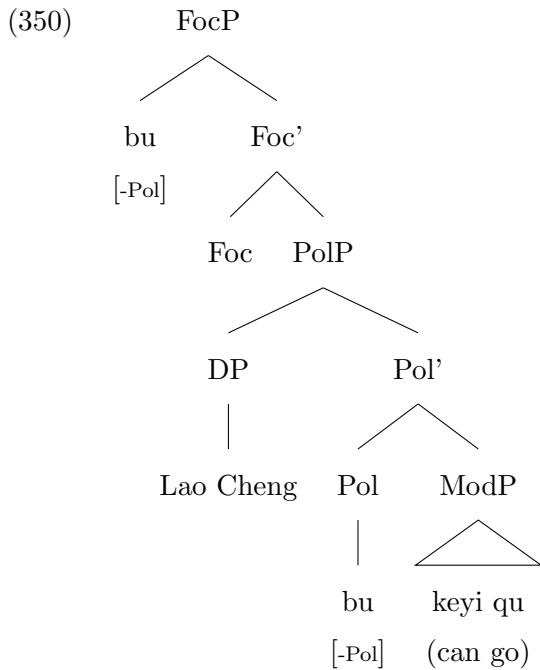
In answer 347a, the CP is from the yes/no question in which there is an unvalued polarity feature on the specifier of the CP, and the PolP is the proposition in the yes/no questions. The affirmative focused particle *shi* merges with the FocP. The interpretable affirmative polarity values the [uPol] as the affirmative polarity, which confirms the truth value of the proposition in the yes/no question. Then, since the PolP is the same as the PolP in the yes/no question, the PolP can be omitted.

(348)

```
                        FocP
                       /    \
                    shi      Foc'
                   [+Pol]    /  \
                          Foc    CP
                               /    \
                    [uPol: +Pol]     C'
                                    /  \
                                   C    PolP
                                       /    \
                                     DP      Pol'
                                      |      /  \
                                Lao Cheng  Pol   ModP
                                           |    /    \
                                          bu   keyi qu
                                        [-Pol]  (can go)
```

Regarding the negative particle answer 347c, similarly, the negative focused particle *bu* assigns the [-Pol] feature to the uninterpretable polarity on the specifier of the CP. Then, in the CP domain, the negative polarity on the specifier and the negative polarity in the PolP form the double negation, which resolves to an affirmative expression such as '*ta keyi qu*(he can go)', as in answer 347c.

(349)

```
                    FocP
                   /    \
                 bu      Foc'
                [-Pol]   /   \
                       Foc    CP
                            /    \
                    [uPol: -Pol]  C'
                                 /   \
                                C    PolP
                                    /    \
                                  DP      Pol'
                                  |       /   \
                              Lao Cheng  Pol   ModP
                                         |      /\
                                        bu   keyi qu
                                       [-Pol]  (can go)
```

In answer 347b, the polarity of the particle is consistent with the polarity in the following expression. According to Holmberg (2016, pp. 191-197, Chap. 4), this answer takes the PolP of the yes/no question as the base, which is further merged with a FocP. A negative particle *bu* merges at the specifier of the FocP, but it is not focused. Therefore, the negative particle does not assign the value, and the polarity in the PolP is interpretable as negative [-Pol] also. The negative particle only agrees with the negative polarity in the PolP.

(350)

```
            FocP
          /      \
        bu       Foc'
      [-Pol]    /    \
             Foc     PolP
                    /    \
                  DP      Pol'
                  |      /    \
             Lao Cheng  Pol   ModP
                        |     /\
                        bu  keyi qu
                      [-Pol] (can go)
```

Holmberg (2016, pp. 191-197, Chap. 4) provides a possible theory for particle answers to yes/no questions in Mandarin. However, in addition to the word *shi* being used as a particle answer, there is one more question regarding Holmberg's analyses, which concerns the particle answer to A-not-A questions. In the previous chapter, it was proposed that *en* and *eñ* are the particle answers in Mandarin, which also answer the A-not-A question. However, the derivation of particle answers to A-not-A questions remains unsolved.

(351) Q: ni   zhe zhoumo neng bu neng lai   canjia juhui?
          you this weekend can   not can come join   party
       'Can you come to join the party this weekend or not?'

   a. A: neng./ bu neng.
          can/   not can
       'Yes./ No.'

   b. A: en./ eñ.
          Aff/ Neg
       'Yes./ No.'

7.2   My Proposition Regarding Particle Answers

Regarding how to confirm a negative yes/no question, the particle answer can follow either the truth-based answer system or the polarity-based answer system. Example 347 is revised as example 352, below. Answers 352a and 352b contain the particles *en* and *eñ*, which follow the truth-based answer system. In answer 352c, the particle answer *eñ* is in the polarity-based answer system. Answers 352d and 352e are the echo answers to the yes/no questions.

(352)   Q: ta   bu   keyi qu yeying   ma?
             she not can go camping Q
        'Can't she go camping?/ Is she not allowed to go camping?'

    a. A: en. (ta   bu   keyi qu yeying.)
             Aff   she not can go camping
        'No. (she can't go camping.)'

    b. A: eñ,   ta   keyi (qu yeying).
             Neg she can   go camping
        'Yes, she can (go camping).'

    c. A: eñ. (ta   bu   keyi qu yeying.)
             Neg she not can go camping
        'No. (she can't go camping.)'

    d. A: bu   keyi.
             not can
        'No, she can't.'

    e. A: keyi.
             can
        'Yes, she can.'

7.2.1 The syntactic derivation of particle answers in the polarity-based answer system

Example 353 displays that there are many positions for the polarity in a sentence in Mandarin. The Pol_1 position is the middle negation, which is to the left of the modal verb *neng*(can). It is in the domain of the TP, denoting the sentential polarity. The positions for Pol_2, Pol_3 and Pol_4 are all the possible positions for the low negation.

(353) wo [Pol_1] neng mingtian [Pol_2] qi zixingche [Pol_3] qu tushuguan [Pol_4] huan
      I   Pol   can   tomorrow Pol   ride bicycle   Pol   go library   Pol   return
      shu.
      book

        'I can go to the library to return the book by bicycle tomorrow.'

In example 354, all the polarity positions are in the covert affirmative polarities. The solo negative particle answer 354a can only convey the meaning that marks the negative meaning on the entire sentence. That is, the negative particle answer *eñ* is identical to the full sentential answer in which the middle polarity is an interpretable negative polarity. If the interlocutor only wants to deny the action '*huan shu*(return book)' for example, the most concise answer is 354b, which is answered by the echo answer '*bu huan*(not return)'. A negative particle answer is not necessary. Therefore, I propose that either a particle answer or an echo answer is derived from the full sentential answer expression. Thus, the answer '*eñ, bu huan.*(Neg, not return)' is actually two CPs collocated: one derives the negative particle answer *eñ*, and the other derives the negative echo answer '*bu huan*'.

(354) Q: ni   mingtian qi   zixingche qu tushuguan huan   shu   ma?
         you tomorrow ride bicycle   go library   return book Q
      'Will you go to the library to return the book by bicycle tomorrow?'

      a. A: eñ.
          Neg
        'No(, I won't go to the library to return the book by bicycle tomorrow).'

b. A: (eñ) bu huan.
   Neg not return

'No. I will go to the library by bicycle tomorrow, but I won't return the book.'

In example 355, there is an overt low negation to the left of the *v*P '*huan shu*(return book)' in the yes/no question. The solo negative particle answer *eñ* in 355a only conveys the meaning that, 'I won't return the book', in which the negation still negates the *v*P '*huan shu*(return book)'. Regarding the echo answer, the focused PolP remains as the echo answer 355b. The negative particle answer and the negative echo answer have the same interpretations and the same position for the negation.

(355) Q: ni mingtian qi zixingche qu tushuguan bu huan shu ma?
       you tomorrow ride bicycle go library not return book Q

'Will you not return the book when you go to the library by bicycle tomorrow?'

a. A: eñ.
   Neg

'No, I won't return the book.'

b. A: bu huan.
   not return

'No, I won't return the book.'

The surface structure of the yes/no question in example 356 is the same as that in example 357. Both of the yes/no questions contain a negation to the left of the verb *qi*(ride), and both can be answered using the negative particle *eñ* alone. However, the two negative particle answers have different interpretations.

In example 356, the negation *bu*(not) is a low negation in the position of [Pol$_2$] in 353. The solo negative particle answer conveys the meaning, 'I won't ride the bike', in which the negation is for the first *v*P '*qi zixingche*(ride bicycle)'. It conveys the same meaning as echo answer 356b. The negation *bu*(not) negates the *v*P '*qi zixingche*(ride bicycle)', which

is clearly displayed in the echo answer.

(356) Q: ni   mingtian [bu qi   zixingche qu tushuguan huan   shu]   ma?
          you tomorrow not ride bicycle   go library   return book Q
       'Will you not ride the bicycle to the library for returning the book tomorrow?'

    a. A: eñ̃.
        Neg
       'No, I won't ride the bike.'

    b. A: bu qi.
        not ride
       'No, I won't ride the bike.'

Even though the surface structure is same, the bu(not) in example 356 is a low negation, but the negative bu(not) in example 357 is on the middle PolP.

(357) Q: ni   mingtian bu [qi   zixingche qu tushuguan huan   shu]   ma?
          you tomorrow not   ride bicycle   go library   return book Q
       'Won't you go to the library to return the book by bicycle tomorrow?'

    A: eñ̃.
      Neg

    'No(, I won't go to the library to return the book by bicycle tomorrow).'

As displayed in example 357, the negative polarity feature is on the middle PolP in the TP domain, which negates the entire serial verb construction. That is, it is a sentential negation. The solo negative particle answer 357 only refers to the meaning of the sentential negative expression. Since the Focus is on the middle PolP, namely, the entire serial verb construction in example 357, it is not acceptable to echo any vP alone to be the echo answer.

As defined in the previous chapter, the polarity of the particle answer that follows the polarity-based answer system is 'based on the polarity of the sentence answer'. Regarding English, the polarity of the particle is accordance with the syntactic polarity feature of the sentential answer, namely, the middle PolP. However, the above examples 355 to 357 reveal that the negative particle answer corresponds to the negative polarity of the focused PolP in Mandarin. That is, the particle answers that employ the polarity-based answer system depend on the polarity of the focused PolP in the full sentential expression answer. As I proposed, the particle answer is derived from the full sentential answer, and the echo answer is derived from the full sentential answer also. Therefore, I propose that the negative particle in the polarity-based answer system is derived from the focused PolP.

In example 355, the full sentential answer to the yes/no question is in example 358, with the derivation displayed in 359. To derive the fragment answer, the Focus head holds a strong [Focus] feature, which attracts the overt negative PolP to the specifier of the FocP to check the [uFoc:] feature. Then, the TP is deleted in the first ellipsis, and the VP in the PolP is deleted in the second ellipsis to form the echo answer '*bu huan*(not return)', as in 355b. If the *v*P is omitted instead of the VP-ellipsis at the second step of the ellipsis, the negation remains at the specifier of the FocP, which is spelt out as *eñ* to be the negative particle answer 355a.

(358)   Q: ni   mingtian qi   zixingche qu tushuguan bu huan   shu   ma?
           you tomorrow ride bicycle   go library   not return book Q
        'Will you not return the book when you go to the library by bicycle tomorrow?'

        A: wo mingtian   qi   zixingche qu tushuguan bu huan   shu.
           I   tomorrow ride bicycle   go library   not return book

        'I won't return the book when I go to the library by bicycle tomorrow.'

(359)
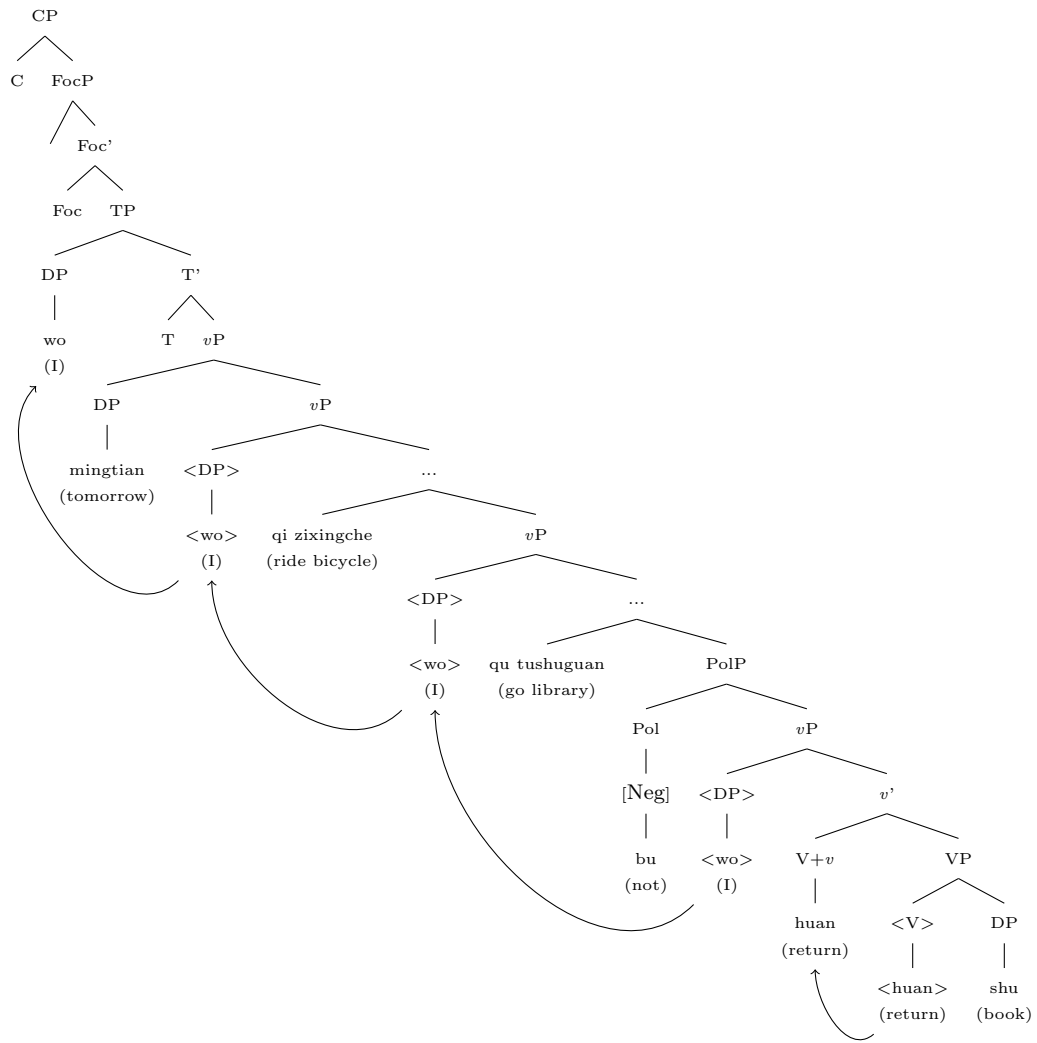
The full sentential answer to the yes/no questions in 357 is as in example 360, and it is derived using the syntactic structure in 361. The negation is a middle polarity in the TP domain outside the *vP*. The Focus head holds a strong [Focus] feature when the full sentential expression is used to derive the fragment answer. The PolP with the overt negation moves to the specifier of the FocP to value the unvalued focus feature on it. Then, the TP and the *vP* are deleted step by step. The negation in the PolP at the specifier of the FocP remains as the negative particle answer in example 357.

(360) Q: ni   mingtian bu [qi   zixingche qu tushuguan huan   shu]   ma?
          you tomorrow not ride bicycle   go library   return book Q

'Won't you go to the library to return the book by bicycle tomorrow?'

A: wo mingtian bu [qi   zixingche qu tushuguan huan   shu].
   I   tomorrow not ride bicycle   go library   return book

'No, I won't go to the library to return the book by bicycle tomorrow.'

(361)
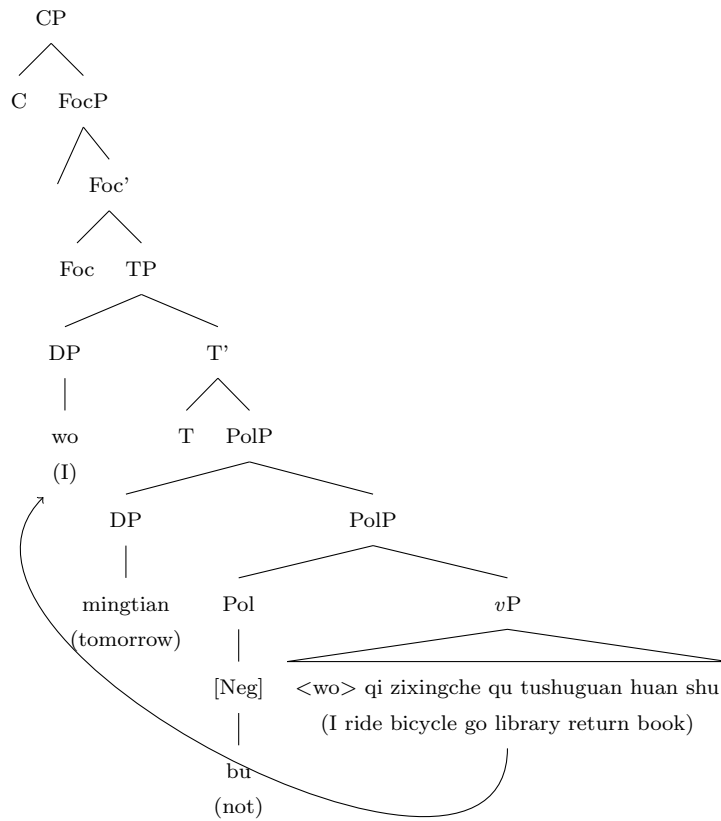
7.2.2 The syntactic derivation of particle answers in the truth-based answer system

Example 352 and its particle answers, which follow the truth-based answer system, are re-listed below as example 362. In the negative yes/no question, the negation is a middle negation in the domain of the TP. The affirmative particle answer *en* means, 'that's right,

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she can't go camping', while the negative particle answer 'eñ' means, 'that's wrong, she can go camping'. The truth-based particle answer conveys the meaning that the value of the proposition in the yes/no question is true or false. That is, the speaker is asking whether the proposition in the yes/no question is correct. The focus is on the truth value of the entire proposition. The polarity of the particle answers is different from the polarity of the middle PolP in the sentential expression.

(362) Q: ta bu keyi qu yeying   ma?
          she not can go camping Q
       'Can't she go camping?/ Is she not allowed to go camping?'

       a. A: en(, ta bu keyi qu yeying).
             Aff   she not can go camping
         'No(, she can't go camping).'

       b. A: eñ, ta   keyi (qu yeying).
             Neg she can   go camping
         'Yes, she can (go camping).'

In example 363, the yes/no question has a negation in the low PolP. The middle polarity is affirmative. The echo answers echo the modal verb *keyi*(can) with the polarity in echo answers 363a and 363b. It reveals that the middle PolP has priority over the low PolP. The polarity of the low PolP in the proposition in the yes/no question does not matter to the polarity of the particle answer. Regarding the particle answers, the solo affirmative particle answer *en* in example 363c conveys the meaning that, 'she can not go camping', and the solo negative particle answer means that, 'she can't not go camping', as in 363d. The particle answers can be treated as polarity-based particle answers, since the polarity of the particles *en* and *eñ* corresponds to the middle polarity.

(363) Q: ta keyi bu qu yeying   ma?
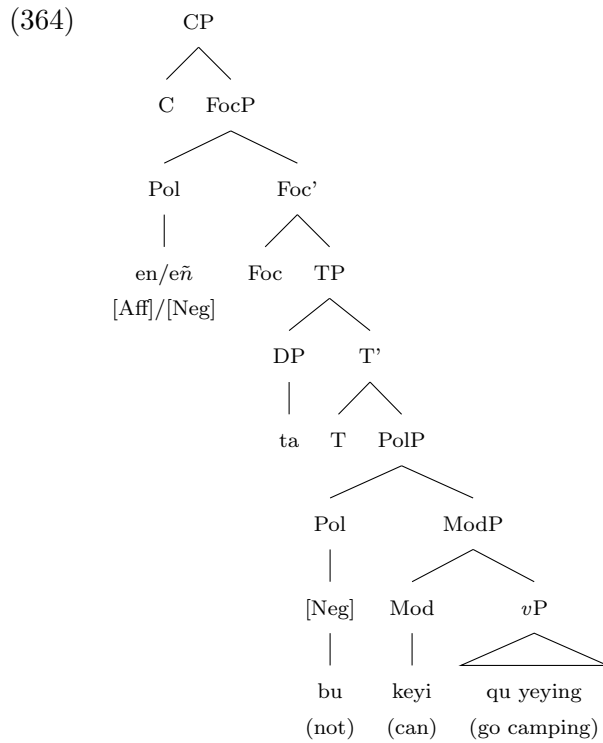   she can not go camping Q
       'Can she not go camping?'

a. A: keyi.
    can
    'Yes. (She can not go camping.)'

b. A: bu keyi.
    not can
    'No. (She can't not go camping.)'

c. A: en(, ta   keyi bu qu yeying).
    Aff   she can not go camping
    'Yes(, she can not go camping).'

d. A: eñ(, ta   bu keyi bu qu yeying).
    Neg she not can not go camping
    'No(, she can't not go camping).'

Therefore, only the negative yes/no question in which the negation is on the middle PolP has truth-based particle answers. The polarity of the truth-based particle answer is related to the polarity of the middle PolP in the proposition. The full sentential expression answer in example 362 is derived in 364.

The truth-based particle is merged at the specifier of the FocP with the interpretable affirmative or negative polarity feature. It denotes the polarity of the value of the entire proposition, namely, the TP. When the particle is affirmative, the TP is the same as the TP in the yes/no question. The TP can be deleted, and the affirmative particle *en* remains as the truth-based particle answer, as in 352a.

If the particle answer is negative, there are two negations in the CP: One is the negative particle conveying the false value of the proposition, namely the TP; the other is the middle negation for the TP. Therefore, the two negations have the same denotation, which produces an affirmative middle polarity as the expression '*eñ, ta [Aff] keyi qu yeying*(yes, she can go camping)'. Since only the *v*P is identical to that in the proposition in the yes/no question, then, only the *v*P '*qu yeying*(go camping)' can be omitted, as in answer 352b.

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This procedure explains why the negative truth-based particle answer cannot be used alone when it answers the negative yes/no question.

(364)

```
                        CP
                      /    \
                     C     FocP
                          /     \
                        Pol      Foc'
                         |       /    \
                      en/eñ    Foc    TP
                     [Aff]/[Neg]     /   \
                                    DP    T'
                                    |    /  \
                                    ta  T   PolP
                                       /       \
                                     Pol       ModP
                                      |        /    \
                                    [Neg]    Mod     vP
                                      |       |     /    \
                                     bu     keyi   qu yeying
                                    (not)   (can)  (go camping)
```

7.3 Summary

Particle answers can be divided into two categories depending on how they confirm or deny the negative yes/no questions that have a negation in the middle PolP: the polarity-based answer system or the truth-based answer system.

Holmberg (2012) and Holmberg (2016, pp. 152-165, Chap. 4) proposes a theory for the derivation of particle answers in English that has both the polarity-based answer system and the truth-based answer system, such as in example 334, repeated as 365, below.

(365)   Q: Is John not coming?

      a. A1: Yes. ['He is not coming.']

b. A2: No. ['He is not coming.']

c. A3: Yes, he is. ['He is coming.']

d. A4: No, he is. ['He is coming.']

Regarding the affirmative truth-based particle answer 365a in the form of '*Yes, ... Neg...*', the negation is the low negation which is too far away to value the uninterpretable polarity feature on the middle PolP. The affirmative particle *yes* assigns the affirmative feature to the [uPol] to form the answer '*Yes, ... [uPol: Aff] ... Neg...*'. Regarding the negative truth-based particle answer 365d, an interpretable particle *no* merges with the specifier of the FocP. It assigns the negative feature to the uninterpretable polarity on the high PolP head as [uPol: Neg]. Since there is an interpretable low negation in the CP, the double negation resolves to an affirmative polarity in the sentence. Regarding the affirmative polarity-based particle answer 365c, an interpretable particle *yes* merges with the specifier of the FocP, which values the uninterpretable polarity on the high PolP head as [uPol: Aff]. Regarding the negative polarity-based particle answer 365b, both the Pol head of the high PolP and the particle on the specifier of the FocP have the uninterpretable polarity feature. The interpretable negation on the middle PolP values the [uPol] of the high PolP as negative [uPol: Neg]. Then, the uninterpretable particle agrees with the valued high PolP as [uPol: Neg] as well.

Holmberg (2016, pp. 191-197, Chap. 4) also discusses the derivation of particle answers in Mandarin. A particle with an interpretable polarity merges with the specifier of the FocP. The [Neg]([-Pol]) feature on the interpretable particle agrees with the middle negation in the TP. Since the TP is the same as the TP in the yes/no question, the TP is deleted and the particle remains as the particle answer following the polarity-based answer system. Since a yes/no question formed using the interrogative particle *ma* is not an open question, the CP is merged with the FocP, the specifier of which is occupied by a particle with an interpretable polarity. The interpretable polarity assigns the truth value to the unvalued polarity feature on the specifier of the CP. If the negation is valued on the CP, it is formed by the double negation phenomenon with the negative middle PolP in the CP. The double negation resolves to an affirmative middle PolP.

Mandarin employs both the polarity-based answer system and the truth-based answer system for particle answers. The polarity-based particle answer is a result of a further step of the echo answer, since the polarity of the polarity-based particle answer always corresponds with the polarity of the focused PolP in the yes/no question. In the full sentential answer, when it derives the fragment answer, the Focus head holds a strong [Focus] feature that attracts the focused PolP to the specifier of the FocP. Then, the TP can be deleted. The PolP in the specifier of the FocP remains as the echo answer in the form of 'Pol, XP'. Since the 'XP' part is identical to the XP in the yes/no question, the 'XP' can be further deleted. The polarity remains in the specifier of the FocP as the particle answer.

A particle answer can be in the truth-based answer system when it answers a negative yes/no question. The polarity of the truth-based particle is used to convey the truth value of the proposition in the negative yes/no question. A truth-based particle with an interpretable polarity merges with the specifier of the FocP. The variable polarity, namely the Focus, is on the truth value of the entire proposition. When the negative particle *eñ* merges as the focused polarity, it denotes the polarity of the proposition having a negative value. However, the proposition, namely, the TP, already has a valued middle negation. The two interpretable negations make an affirmative polarity on the middle PolP. Since the middle polarity has changed, it is not identical to the TP in the yes/no question. Only the *v*P or other phrases in the middle PolP domain can be omitted in the answer. Therefore, a negative truth-based particle answer cannot be used to answer alone; it must be followed by an expression.

Chapter 8

Conclusions

This research investigated the syntactic derivation of yes/no questions in Mandarin from the perspective of the answers.

In Chapter 1, by comparing a pair of yes/no questions and their answers in English and in Mandarin, it was revealed that the yes/no questions and answers in Mandarin are quite different to English, which leads to the question of how do yes/no questions and their answers work in Mandarin. The majority of existing research focuses on the questions in yes/no questions themselves. However, the answers not only provide the information itself, but also interact with the corresponding yes/no questions. Therefore, this thesis researched yes/no questions in Mandarin from the perspective of the answer system rather than the perspective of the yes/no questions. The main objective of this thesis was to investigate how the answers to yes/no questions in Mandarin are derived. Holmberg (2012, 2016) conducted a great deal of research on yes/no questions and answers, in which he mentions a few examples about the answers of yes/no questions in Mandarin. Therefore, the second objective of this thesis was to investigate more yes/no questions and answers to examine whether Holmberg's theory regarding the derivation of answers to yes/no questions can be applied to the various types of yes/no questions and answers in Mandarin.

Chapter 2 described four types of yes/no questions according to the methods of how the yes/no questions are formed: yes/no particle questions, A-not-A questions, tag questions and intonation yes/no questions. In the yes/no particle questions, the yes/no question par-

ticles – *ma* or *ba* – that contain the [Q] feature are attached to the end of a declarative sentence to form a yes/no question. Since the yes/no particle *ma* question is neutral, preferring neither the affirmative answer nor the negative answer, most of the examples used in this thesis are in the form of the yes/no particle *ma* question. Comparatively, the yes/no particle *ba* question is biased towards the answer that corresponds with the proposition in the question. In the A-not-A question, the [Q] feature is on the A-not-A part, which consists of the covert affirmative polarity with the word *A* and the overt negative polarity with the word to form '*not A*'. The speaker asks the interlocutor to choose one option as the answer from these affirmative or negative polarities. The repetition of the word *A* in the 'A-not-A' structure means that the second 'A' in the negative form 'not-A' can be omitted when the 'A-not-A' structure appears at the end of the yes/no question. The 'A-not' structure still poses the affirmative and the negative polarities, which carries the [Q] feature to form a yes/no question. A tag question is composed of a declarative statement and a tag. The tag contains a predicate with a variable polarity. A yes/no question particle *ma* or *ba* that carries the interrogative [Q] feature in a tag can help the entire sentence to form a yes/no question. The tag can also be in the A-not-A form. The fourth yes/no question is the intonation yes/no question, which is realised using the phonological method.

Chapter 3 described the answers to yes/no questions in Mandarin. Following the parameter for the form of answers proposed by Holmberg (2012, pp. 53-54), the answers to yes/no questions in Mandarin follow both the particle answer system and the echo answer system, as in example 366. The affirmative particle answer is the '*en*', and the negative particle answer is the '*eñ*' in 366a. The answers '*shi*' and '*bu shi*' in 366b, which are usually acknowledged as the particle answers to yes/no questions, are not particle answers but echo answers. When a yes/no question contains an overt or a covert '*shi*', the answer has the possibility to derive the '*shi*' with the polarity as the echo answer. The '*shi*' or '*bu shi*' are unacceptable as answers to the yes/no question, such as in answer 366b.

(366)   Q: ni   zuijin shenti hao   ma?
            you lately body   good Q
         'Have you been in good health lately?'

a. A: en./ eñ.
Aff/ Neg
'Yes./ No.'

b. * A: shi./ bu shi.
be/ not be
'Yes./ No.'

c. A: hao./ bu hao.
good/ not good
'Yes./ No.'

In example 366, Mandarin not only can answer the yes/no question by using particles, but can also employ the echo answer system to answer the yes/no question, as in 366c. It is the adjective *hao*(good) that is echoed as the echo answer with the polarity. In Holmberg (2016, pp. 191-197, Chap. 4), only the modal verb-echo answer and the verb-echo answer are considered. Therefore, in Chapter 3, I described the various phenomena of echo answers in Mandarin, re-listed as in 367, below.

(367) 1. Modal verb-echo answers

2. Verb-echo answers

3. Adjective-echo answers

4. Preposition-echo answers

5. Adverb-echo answers

6. Echo answers to tag questions

7. Echo answers of *de* structure

Regarding the answers about how to answer negative yes/no questions, echo answers in Mandarin follow the polarity-based answer system, while the particle answers can employ both the polarity-based answer system and the truth-based answer system. In example 368, the affirmative particle *en* can barely be used to confirm the truth of the negation in the question. When the negative particle *eñ* is used alone, as in answer 368b, it follows

the polarity-based answer system. When the negative particle *eñ* employs the truth-based answer system, it must be followed by the full or fragment sentential answer.

(368) Q: ni   mei you qian   ma?
           you not have money Q
       'Don't you have money?'

    a. A: en(, mei you).
           Aff not have
        'No(, I don't have).'

    b. A: eñ(, mei you).
           Neg not have
        'No(, I don't have).'

    c. A: eñ, you.
           Neg have
        'Yes, I have.'
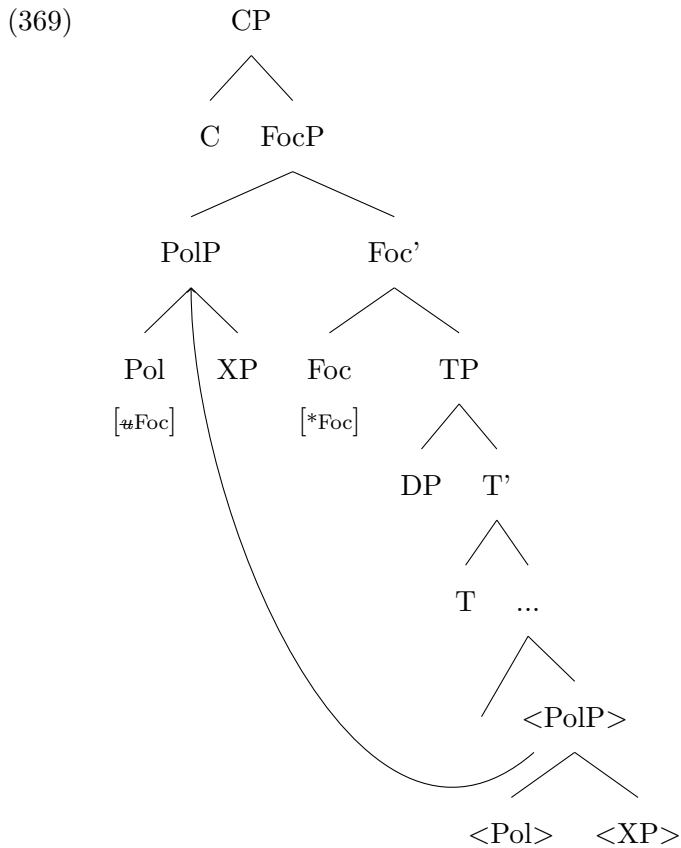

    d. A: (wo) you   (qian).
             I   have money
        'Yes(, I have money).'

    e. A: (wo) mei you   (qian).
             I   not have money
        'No(, I don't have).'

In Chapter 4, following the Focus concept proposed by Holmberg (2016, pp. 32-34, Chap. 2), I proposed that there is a FocP that stands for 'focus phrase' in yes/no questions and answers in Mandarin. The FocP is in the highest domain of the CP and above the TP, which has the [Focus] feature at the head of the FocP. In a yes/no question, the variable polarity takes the [*u*Foc:] feature that is checked by the [Focus] on the FocP head. In a yes/no question and its full sentential answer, the [Focus] feature on the FocP is weak,

which only values the [uFoc:] feature on the PolP in situ. However, when deriving echo answers, the [Focus] feature on the FocP head becomes strong, which attracts the PolP to the specifier of the FocP to check the [uFoc:], as with derivation 369. Then, the TP is deleted with the subject in the specifier of the TP, and more ellipses are carried out based on the specific structure in the PolP.

In Chapter 5, I pointed out that the derivation of pro-drop and VP(vP)-ellipsis proposed by Holmberg (2016, pp. 73-79, Chap. 3) cannot explain all the echo answers to yes/no questions in Mandarin, such as a yes/no question that contains a serial verb construction, a *ba* structure or a *bei* structure and a *de* structure. I applied my proposed derivation on the various echo answers listed in Chapter 3 and the echo answers that contain the structures unsolved in Holmberg's theory. It successfully derived the modal verb-echo answer, the verb-echo answer, the adjective-echo answer, the preposition-echo answer, the adverb-echo answer, and the echo answer that contains a *ba* structure or a *bei* structure.

(369)

```
                    CP
                   /  \
                  C   FocP
                     /    \
                  PolP     Foc'
                  /|\      /   \
                Pol | XP  Foc   TP
               [≠Foc]    [*Foc]  /\
                                DP  T'
                                   /  \
                                  T   ...
                                     /  \
                                  <PolP>
                                   /  \
                               <Pol>  <XP>
```

In a yes/no question that contains the *de* structures such as examples 370 and 371, even though there are verbs in the yes/no questions, the answer cannot echo the verb with the polarity as the echo answer, which is against the answer derivation theory proposed by Holmberg (2016).

(370) Q: zhe jian maoyi, ta zhi de piaoliang ma?
          this CL sweater, she knit DE beautiful Q
       'Is this sweater beautiful because of her knitting?'

   A: piaoliang./ bu piaoliang.
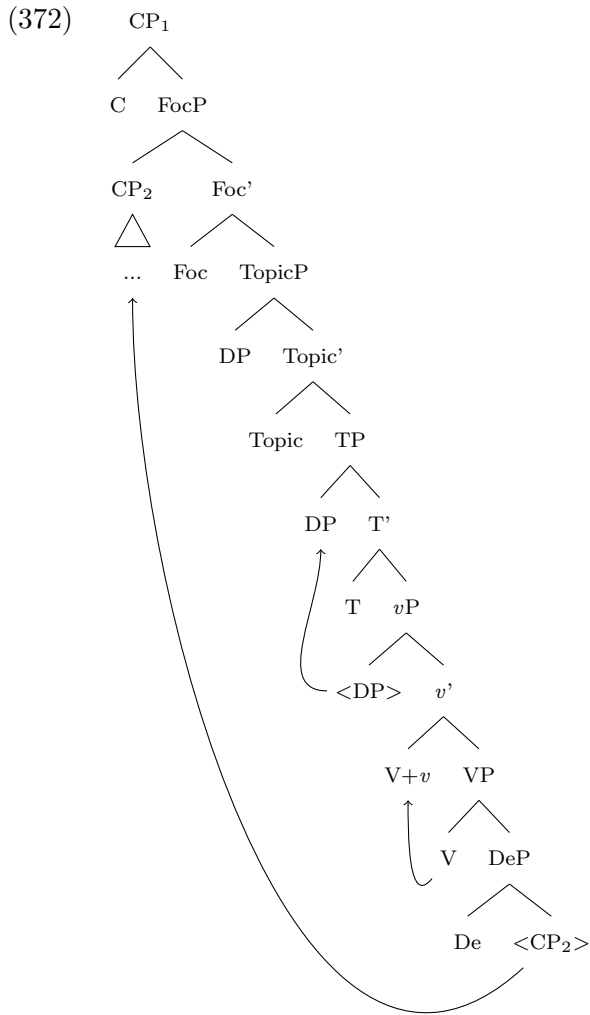   beautiful/ not beautiful

   'Yes./ No.'

(371) Q: zhe jian maoyi, ta zhi de piaoliang ma?
         this CL sweater, she knit DE beautiful Q
      'Is she able to knit this sweater beautifully?'

      A: zhi de piaoliang./ zhi bu piaoliang.
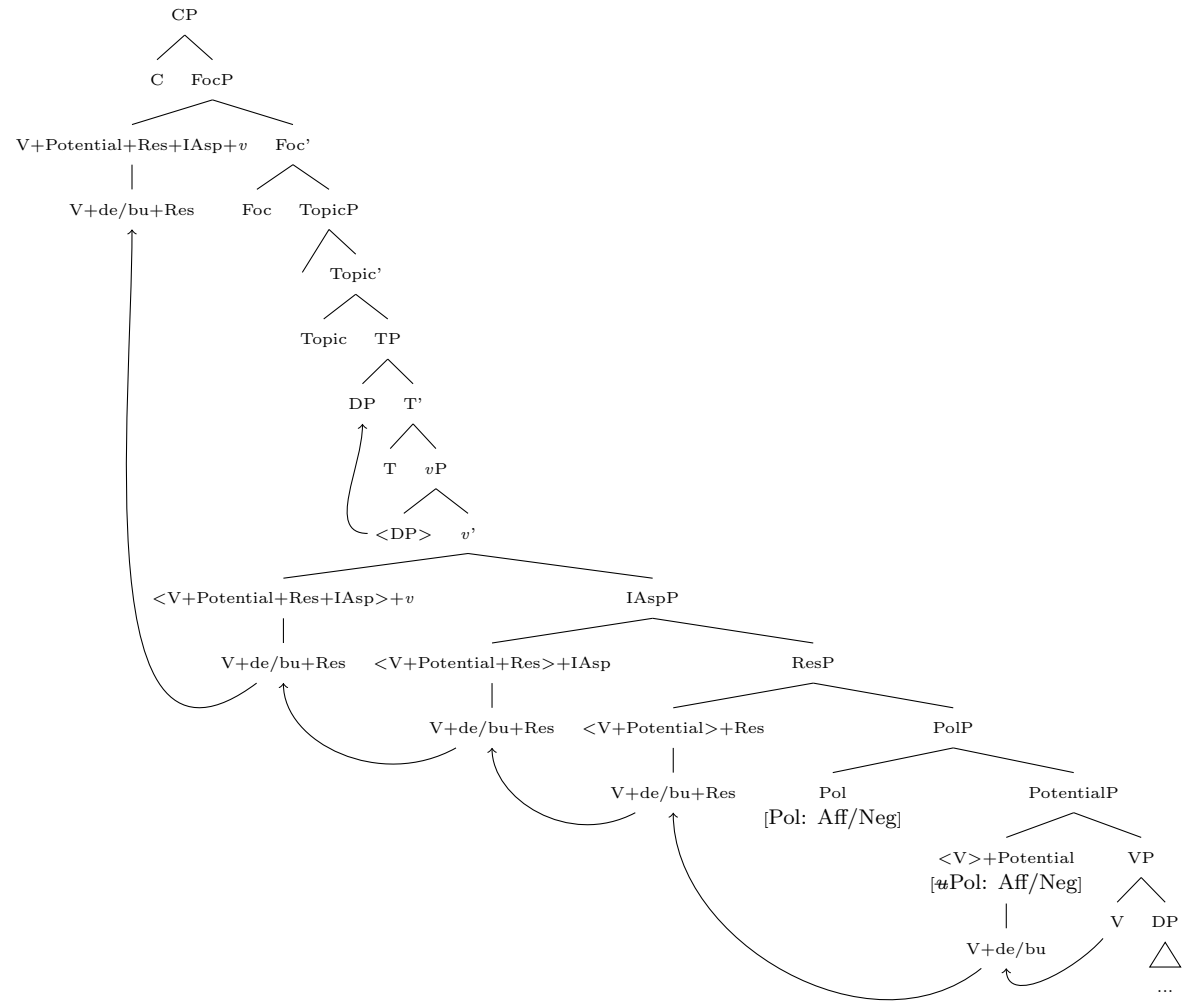   knit Aff beautiful/ knit not beautiful

      'Yes./ No.'

Chapter 6 investigated echo answers of yes/no questions including the *de* structures. The *de* in example 370 is a degree *de* that has its own projection DeP as the complement of the verb *zhi*(knit). The derivation of the echo answer to a yes/no question that contains the degree *de* is derived in 372. A CP_2 follows the *de* to express the degree of the word to the left of the degree *de*. In an echo answer, the [Focus] feature in the FocP in the matrix CP_1 becomes strong, which attracts the variable polarity to the specifier of the FocP. Since the PolP with [uFoc:] is inside the CP_2 which is the complement of the DeP, the entire CP_2 moves to the specifier of the FocP. Then, the TP in the matrix clause is deleted. Then, in the specifier of the CP_1, there is a FocP in the highest position in the CP_2 domain also. Further movements and deletions inside the CP_2 are carried out to derive the echo answer.

(372)

```
                CP₁
               /  \
              C    FocP
                  /    \
               CP₂      Foc'
               /\      /    \
              /  \   Foc    TopicP
             ...        /        \
                      DP         Topic'
                              /        \
                           Topic        TP
                                      /    \
                                    DP      T'
                                          /   \
                                         T     vP
                                             /    \
                                        <DP>       v'
                                                 /    \
                                              V+v      VP
                                                     /    \
                                                    V      DeP
                                                          /   \
                                                        De    <CP₂>
```
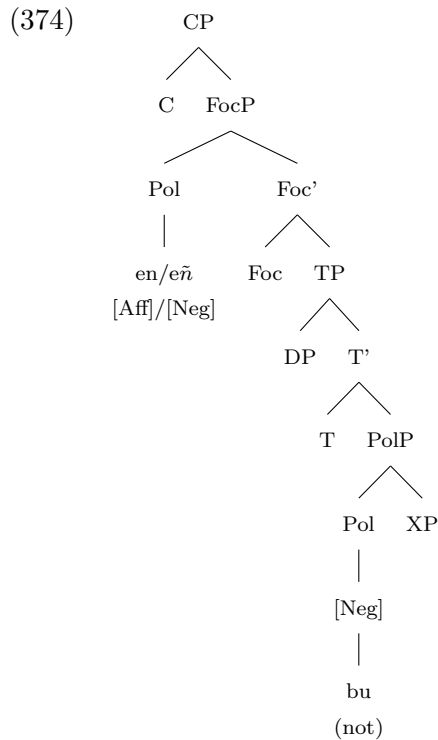
The *de* in example 371 not only conveys a meaning of potential (ability or possibility), but also is the affirmative form of the polarity. The resultative expression verb cluster with the potential *de* is derived in 373. The unvalued polarity feature on the head of the Potential P is checked by the polarity feature on the PolP head to spell out the overt affirmative polarity *de* and the overt negative polarity *bu*. The *de/bu* on the Potential head contains the meaning of potential and is combined with the sub-events by the head movement as a whole, which conveys a meaning that '(not) has the ability or possibility that the action can reach the result'. Since the variable polarity is in the cluster as a whole, the cluster moves to the specifier to be valued the uninterpretable focus feature by the strong [Focus]

on the Focus head. Then, the TP in the matrix clause and the DP in the VP are omitted step by step to derive the echo answer.

(373)

CP
C FocP
V+Potential+Res+IAsp+*v* Foc'
V+de/bu+Res Foc TopicP
Topic'
Topic TP
DP T'
T *v*P
<DP> *v*'
<V+Potential+Res+IAsp>+*v* IAspP
V+de/bu+Res <V+Potential+Res>+IAsp ResP
V+de/bu+Res <V+Potential>+Res PolP
V+de/bu+Res Pol
[Pol: Aff/Neg] PotentialP
<V>+Potential
[*u*Pol: Aff/Neg] VP
V+de/bu V DP
△
...

I accept the core idea of Holmberg (2012, 2016) that fragment answers are derived from their full sentential answers. In Chapter 7, the particle answers in Mandarin are also derived from the full sentential answers. Particle answers in Mandarin can employ both the polarity-based answer system and the truth-based answer system. Regarding the polarity-based answer system, the particle is an echo answer, which echoes the focused polarity in the yes/no question. Following the derivation of echo answer 369, the XP in the PolP on the specifier of the FocP is further deleted because it is identical to that in the yes/no question. The polarity remains as the polarity-based particle answer. Regarding the truth-based answer system, the interpretable particle merges with the specifier of the FocP, as in derivation 374. The particle refers to the truth/false value of the entire proposition in the negative yes/no question. The negative proposition has an interpretable middle negation, which is a sentential polarity, and the double negation gives rise to an affirmative polarity of the middle polarity. Since the polarity of the middle polarity is changed, it is not identical to that in the proposition in the yes/no question. The middle PolP cannot be omitted. Only the XP, which is the same as that in the proposition in the yes/no question, can be deleted. This explains why the negative truth-based particle answer cannot be used alone.

(374)

```
              CP
            /    \
           C     FocP
               /      \
             Pol      Foc'
              |      /    \
          en/eñ   Foc     TP
        [Aff]/[Neg]      /   \
                       DP    T'
                           /    \
                          T     PolP
                               /    \
                             Pol    XP
                              |
                            [Neg]
                              |
                             bu
                            (not)
```

This thesis builds a theory for deriving the shortest fragment answers to yes/no questions in Mandarin.

This thesis answers the research questions regarding the core theory that there is a FocP in the highest position in the domain of the CP. In yes/no questions and full sentential answers, the head of the FocP holds a weak [Focus] feature; while in fragment answers, the [Focus] feature becomes strong. In echo answers, the strong [Focus] feature attracts the variable PolP containing the [uFoc] to the specifier of the FocP to be valued. The TP is then deleted, and more ellipses are carried out based on the structure of the sentences. A polarity-based particle answer is a result of an echo answer with the same derivation. For the truth-based particle answer, the particle with the interpretable polarity merges to the specifier of the FocP, and the TP, the vP or the phrase that is identical to that in the negative yes/no question can be deleted.

The examples and the phenomena described in this thesis clearly answer the research question concerning whether Holmberg (2016)'s theory works for all the derivations of answers to yes/no questions in Mandarin. Holmberg (2016)'s theory cannot explain all the derivations of fragment answers to yes/no questions in Mandarin.

The answers to yes/no questions described in this thesis cover various types of yes/no questions and answers, which could provide the data and the inspiration for other researchers regarding further research. This thesis contributes also to the derivation of the *de* structures in Mandarin: the degree *de* and the potential *de*. Furthermore, this dissertation provides a new perspective to compare and analyse the answers to yes/no questions containing the degree *de* and the potential *de*. The description and explanation of the interpretation for the *de* structure could help to improve and revise the database of machine translation technology between Mandarin and other languages. This research could have a further impact in terms of computational applications and natural language processing and recognition.

Even though this research tries its best to consider various examples that contain different language structures to test the proposed theory, it cannot cover all the language phenomena in Mandarin, since the language expression is not only countless, but also changes and

creates new expressions as it evolves. Therefore, it is questionable whether the theory in this thesis is capable of deriving all fragment answers to yes/no questions in Mandarin. However, this thesis could still fill the gaps in the area of syntactic research regarding answers to yes/no questions in existing research and serves as a catalyst for further research on yes/no questions and answers in Mandarin. In addition, the ideas in this thesis may stimulate inspiration for other researchers in related research fields.

Below, I make four points about answers to yes/no questions in Mandarin regarding suggestions for further research.

The first point concerns the verb *you*(have). Normally, when a yes/no question contains the verb *you*(have), such as example 375, the answer echoes the verb *you*(have) with the polarity as the echo answer. In example 376, the yes/no question does not contain the verb *you*(have), and can be answered with the verb *chi guo*(eat ASP) with polarity as the echo answer. However, regarding the negative answer, it can also be answered by using '*mei you*(not have)' which is composed of the negation *mei*(not) and the verb *you*(have), as in 376b. Agreeing with Holmberg (2016) that the fragment answers are derived from their corresponding sentential answers, the negative answer '*mei you*(not have)' is derived from the negative sentential answer, which does not contain the verb *you*.

(375) Q: ni   you heisede make   bi   ma?
          you have black   marker pen Q
       'Do you have a black marker pen?'

       A: you./ mei you.
          have/ not have

       'Yes./ No.'

(376) Q: ni   chi guo xin kai   de na   jia tianpin dian de caomei   dangao ma?
          you eat ASP new open of that CL dessert shop of strawberry cake   Q
       'Have you ever eaten the strawberry cake in the newly opened dessert shop?'

a. A: chi guo./ mei chi guo.
   eat ASP/ not eat ASP

   'Yes./ No.'

b. A: mei you.
   not have

   'No.'

c. A: mei.
   not-have

   'No.'

In my opinion, this phenomenon results from the semantic meaning of the verb *you*, which has the interpretation of the existence of an action. In addition, the yes/no question in example 376 can also be answered using a solo negation word *mei*(not), as in answer 376c, since the negation *mei* also contains the interpretation of *you* to some extent. This leads to the second point that needs to be further researched – the negation words *bu* and *mei* in Mandarin.

In Mandarin, there are two spelt-out negation words, *bu* and *mei*, that cannot be interchanged. Regarding the most common verbs *shi*(be) and *you*(have), the verb *shi*(be) can be only negated by *bu*, and the verb *you*(have) can only be negated by *mei*. As far as I am concerned, the word *bu* contains the meaning of '*be*(be)' also, in addition to the negative meaning, and the word *mei* contains the meaning of '*you*(have)' also, in addition to the negative meaning. This is because '*bu*' and '*mei*' are not considered negative particle answers in this thesis, since they do not purely express the negation. It provides a possible solution for answer 376b. Since the negation for an action '*mei*' contains the meaning of '*you*(have)', the verb *you*(have) is acceptable to appear overtly in the sentence with the negation *mei*. Thus, the negation words *bu* and *mei* are worth researching in detail.

As mentioned previously, Mandarin has some special structures, such as the *ba* structure and the *bei* structure. These structures have many different usages that are not fully mentioned in this research. The theory proposed in this thesis can explain some yes/no questions and

answers containing the *ba* structure or the *bei* structure, such as examples 223 and 232. However, some usages of the *ba* structure and the *bei* structure in the yes/no questions and answers cannot be derived from echo answers via the theory in this thesis. In example 377, the verb *zhuazhu*(catch) has a DP *jingcha*(police) serving as the agent. The full negative sentential answer 377a reveals that the polarity is in the domain higher than the BeiP. However, in the affirmative echo answer 377b, only the *v*P(or VP) remains as the echo answer. The '*bei*' and '*jingcha*(police)' are omitted for some reason. I suppose that the nature of the verb and the syntactic position of the agent DP are related to the derivation. The usages, the syntactic position and the derivation of the *ba* structure and the *bei* structure need to be further researched since they can affect the other structures and the sentences in which they appear.

(377)   Q: zhen xiong   bei jingcha zhuazhu le   ma?
            real murderer BEI police   catch   ASP Q
        'Has the real murderer been caught by the police?'

    a. A: (zhen xiong)   mei (bei jingcha zhuazhu).
            real murderer not BEI police   catch
        'No, the real murderer has not been caught by the police.'

    b. A: (zhen xiong)   (bei jingcha) zhuazhu le.
            real murderer BEI police   catch   ASP
        'Yes, the real murderer has been caught by the police.'

The final direction for further research concerns the answers to yes/no complex questions. This thesis only investigated yes/no questions in structures of simple sentences, except those questions and answers containing the degree *de* structure. The bridge words in complex sentence may affect the echo answers to the yes/no questions. In examples 379 and 380, the subclauses are the same. However, in example 379, the echo answer echoes the verb in the matrix clause with the polarity. In example 380, the echo answer echoes the verb in the subclause with the polarity. I propose that the meaning of the bridge verb determines that the echo answer echoes the verb in the matrix clause or the verb in the subclause. Thus,

the answers to yes/no questions in the complex sentence structure deserve to be further researched, from the perspectives of investigate bridge words, the negation scope in the matrix clause, and other topics in complex sentences.

(378) Q: ni   juede mingtian hui xia yu   ma?
    you fell   tomorrow will fall rain Q
   'Do you think it will rain tomorrow?'

(379) A: hui./ bu hui.
    will/ not will
   'Yes./ No.'

(380) Q: ni   zhidao mingtian hui xia yu   ma?
    you know   tomorrow will fall rain Q
   'Do you know that it will rain tomorrow?'

   A: zhidao./ bu zhidao.
    know/   not know

   'Yes./ No.'

In addition to the suggested four points, there are still many unsolved problems and unexplored topics regarding yes/no questions and answers in Mandarin. This thesis mainly contributes a theory to derive the answers to yes/no questions in general. As a starting point, I hope this thesis can inspire more research to further investigate yes/no questions in Mandarin.

Abbreviations

Aff   affirmative

ASP   aspect

BaP   Ba Phrase

BeiP   Bei Phrase

CL   classifier

DeP   De Phrase

ExtP   Extent Phrase

FocP   Focus Phrase

INFL   inflection

Neg   negative

PTCL   particle

PL   plural

Pol   polarity

PolP   Polarity Phrase

PotentialP   Potential Phrase

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